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No. 41,782. Machine for Working Wood.

(*Machine à travailler le bois.*)

Honestus Morton Albee, Newark, New Jersey, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. In a carving and routing machine, the combination, with the pivotally jointed and horizontally movable arm b, of a vertically movable shaft f, and its rotary tool g, a guide rod b^{11}, attached to the said arm, a sliding carriage for said guide rod, a track for said carriage adapted to be secured to a table or bench, a plate b^{13}, controlling the vertical movement of the tool shaft, and a rod b^{16}, secured to the said plate, and having a tracing point b^{19}, arranged thereon, all said parts being arranged and adapted to operate, substantially as and for the purposes set forth. 2nd. In combination, in a carving and routing machine, a bracket or support a^1, adapted to be secured to a fixture or frame, and having a pulley shaft a^2, and an arm section b^1, pivoted on said pulley shaft, an arm section b^3, having a vertically adjustable section b^4, arranged thereon, a tool shaft f, and the tool g^1, and means for rotating said tool, and an intermediate arm section b^2, having a pivotal connection with both section b^1 and section b^3, and pulley shafts a^3, a^4, said pulley shafts being parallel with the tool shaft, all substantially as and for the purposes set forth. 3rd. In combination, with the horizontally movable and pivotally sectional arm b, having at the outer end thereof a rotary tool shaft and tool, and means for transmitting rotary motion to the same, a guide rod for directing the arm horizontally, and a tracing point b^{19}, and its carrier connected with and controlling the vertical movement of the said rotary tool shaft, substantially as and for the purposes set forth. 4th. In combination, with the horizontally movable and sectional arm having belts and pulleys for transmitting power, and a rotary tool shaft and its carving tool, a plate b^8, arranged on the outermost section of said arm, and providing bearings for a guide rod b^{11}, and for a vertically sliding plate b^{13}, a guide rod b^{11}, arranged to slide in bearings of a sliding carriage h, a track for said carriage, a vertically sliding plate b^{13}, having a connection b^{14}, adapted to work in or with a sleeve or portion b^{15}, of the pulley f^1, a rod b^{16}, extending horizontally from said sliding plate, and having a tracing point, all said parts being arranged and combined, substantially as set forth. 5th. In a wood working machine, substantially as described, the combination, with the horizontal movable and pivotally jointed arm carrying a rotary cutter, and means for operating the same, of a guide rod connecting with said arm, a sliding carriage providing bearings for said guide rod, and made in parts, one pivoted on the other in the line of said guide rod b^{11}, and means for setting one of said parts in its relation to the other, substantially as and for the purposes set forth. 6th. In combination, in a wood carving or routing machine, with a horizontally movable arm constructed in a series of pivoted sections, and carrying a vertically movable rotary cutter, and means for operating the same, of a guide rod and a tracing tool connecting with and controlling the vertical movement of the said rotary cutter, and a weight l, counterbalancing the weight of said cutter and its carrying shaft, substantially as and for the purposes set forth. 7th. In combination, in a wood carving or routing machine, substantially as herein described, a horizontally movable and pivotally jointed arm having at its end a rotary cutter and its carrying shaft f, a pulley f^1, secured to said shaft, and having at one end thereof a grooved collar b^{15}, having a shank f^{14}, extending through a perforated plate f^{15}, of said pulley, and a nut fastening said collar to said pulley but allowing an independent movement of the latter, substantially as set forth.

No. 41,783. Machine for Working Wood.

(*Machine à travailler le bois.*)

Honestus Morton Albee, Newark, New Jersey, U. S. A., 2nd February, 1893; 6 years.

Claim.—1st. The improved wood working machine, combining therein, the vibrating arm d, carrying at the end thereof a rotary routing or carving tool, and means for operating said tool, a screw shaft controlling the movement of said arm, and a lathe arranged below the plane of movement of said vibrating arm, a train of gearing connecting said lathe and screw shaft, and an adjustable plate or frame, k^9, carrying at one end a wheel k^3 of said train and at the other wheels k^7, and k^8, and means for holding said frame stationary, substantially as set forth. 2nd. The improved wood working machine, combining a jointed arm carrying a routing or carving tool, and means for operating said tool, a screw shaft controlling the movement of said arm, a lathe and a train of gearing embracing adjustable wheels for reversing the movement of the lathe in its relation to the screw shaft, substantially as and for the purposes set forth. 3rd. The improved wood working machine, combining a jointed arm carrying rotary and vertically movable routing tool, a screw shaft, and its carriages connected with said jointed arm, a pattern 4, a tracing tool and connections governing the vertical movement of the vertically movable routing tool, a lathe and gearing whereby the lathe and screw shaft are turned together, substantially as set forth. 4th. The combination, in a work working machine with the jointed arm and its routing tool, and means for operating the same, a lathe, screw shaft, and a carriage connected with and operating the said arm, gears transmitting movement from the screw shaft to the lathe and a gauge p q, all arranged and adapted to operate, substantially as set forth. 5th. In combination, in a wood working machine the jointed arm and its routing tool and means for operating the same, a lathe and screw shaft and gearing transmitting motion from one to the other, a graduated disc p on the centre j, and a fixed index q, all said parts being arranged and operating, substantially as and for the purposes set forth. 6th. In combination with the screw shaft, lathe carriage k^1, jointed arm and its tool and means for connecting and operating the same, of a rest s, arranged on an adjustable stud v fixed upon the table or bed plate, substantially as and for the purposes set forth. 7th. In combination, in a wood working machine a lathe, shaft, carriage, and jointed arm and its tool, and means for connecting and operating the same, substantially as set forth, a V-shaped heat serving as a rest for the stick and having a leg u, adjustably secured to a stud v, of a bed plate, substantially as set forth. 8th. In combination with jointed arm and its rotary tool and means for operating the same, a screw shaft, a carriage k,[1] arranged on a track k^2, and connected with said arm and provided with a slotted arm k^{12}, clamp k^{20}, and connections engaging and controlling the said jointed arm and its tool, substantially as set forth. 9th. In combination with the jointed or sectional arm having a vibrating movement and a rotary tool and means for operating said tool, a lathe and screw

shaft connected by gearing, the said screw shaft having a carriage k^1, connected with said arm, a pattern 4, a tracing tool w^1, connected with said arm and controlling the movements of the same, substantially as set forth.

No. 41,784. Process of and Apparatus for Impregnating Fibrous and Cellular Material by Electricity. (*Procédé et appareil pour imprégner par l'électricité des matières fibreuses et cellulaires.*)

Gustav Adolph Oncken, Merxem, Belgium, 2nd February, 1893; 6 years.

Claim.—1st. In the process of preserving or impregnating organic, fibrous and cellular matter, the employment of an electric current, substantially as set forth. 2nd. The process of preserving or impregnating organic, fibrous and cellular matter, consisting of first, running trucks containing the substances to be treated into an impregnating vessel, closing the latter, and fitting it with an acid, alkaline or other desirable solution, heating the same, and whilst heating, leading an electric current through the impregnating solution, substantially as and for the purpose described. 3rd. The combination, of the receptacles for the organic, cellular or fibrous matter to be treated with an acid, alkaline, antiseptic or other desirable solution, the steam generator, means for conducting the said solution to and from the said receptacles, a dynamo electric machine, the conducting wires, and electrodes placed opposite another at the ends of the said receptacles, substantially as and for the purpose specified.

No. 41,785. Fruit Evaporator. (*Evaporateur pour fruits.*)

Joseph Warren Doty, Lockport, New York, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. In an evaporator, the combination, with the outer casing, of a vertical series of horizontally disposed hollow headers spaced apart, each subdivided by a horizontal partition into non-communicating compartments, a supply pipe connected to each of the upper compartments of the headers, an exhaust pipe connected to each of the lower compartments, a series of horizontal coils laterally disposed and having their upper terminals connected to the upper compartment of their respective header and their lower terminals to the opposite compartment, and a series of pans mounted upon the coils between their branches, substantially as specified. 2nd. In an evaporator, the combination, with series of horizontally disposed coils connected with a steam supply, of an evaporating pan mounted within and supported by the series of coils and comprising a perforated bottom and opposite metallic L shaped flanges projecting above and below the bottom, and adapted to rest upon the coils, substantially as described. 3rd. The combination, with the case of an evaporator, having an opening at one end, of a steam supply and a steam exhaust pipe vertically disposed and arranged opposite each other at the sides of the opening and connected with a boiler, a series of horizontal headers spaced apart and subdivided into non-communicating compartments, pipes connecting the upper compartment with the supply pipe, similar pipes connecting the lower compartments with the exhaust pipe, and series of U shaped coils having their upper terminals connected with the upper compartments and their lower terminals with the lower compartment of their respective headers, substantially as specified. 4th. In a drier, the combination, with a casing provided with opposite open ends, of a series of heating coils located in one of said open ends, a series of horizontally disposed heating coils projecting from one end, steam supply and exhaust pipes leading to the same, said coils terminating short of the opposite end wall of the casing, a series of inclined evaporating pans arranged between the ends of the coil and said end wall of the casing, and an exhaust fan occupying the opening of said end wall, substantially as specified.

No. 41,786. Machinery for the Making of Tin Vessels. (*Machine pour la fabrication de la poterie d'etain.*)

William Woolnough, 174 Sebert Road, Forest Gate, Essex, England, 2nd February, 1893; 6 years.

Claim.—1st. The grooved or channelled squeezing jaws such as b, having a groove or channel therein such as d, with the tongue f, fitting into the recess g, for the double seaming rectangular or the like, tins cans, boxes or cases, substantially in the manner and for the purposes hereinbefore described and illustrated in the drawing. 2nd. In a squeezing machine for squeezing on and double seaming the tops and bottoms of tins, cans, boxes and cases or the like, I claim broadly, a groove or channel in the squeezing jaw, which acts to turn over and double seam the edges of a rectangular can or case or the like, substantially in the manner and for the purposes set forth.

No. 41,787. Barrel. (*Baril.*)

James Pleukharp, Columbus, Ohio, U.S.A., 2nd February, 1893; 6 years.

Claim.—As an improved article of manufacture, a standard barrel, composed of a given number of staves, each stave being the counter part of the other, and in longitudinal section of uniform thickness from end to end, and tapering slightly in width from the middle toward each end, and having the ends crozed and chamfered and having the edges similarly bevelled, and having the inner surface between the edges straight, and the outer surface curved to correspond approximately with the circumference of the barrel, and having a dowel projected from one edge and a corresponding opening in the opposite edge, substantially as and for the purpose described.

No. 41,788. Fishing Basket. (*Panier de pêche.*)

Walter Greaves, Ottawa, Ontario, Canada, 2nd February, 1893; 6 years.

Claim.—1st. A fishing basket having a partly perforated body moulded integrally of indurated fibre or the like material, and provided with a top or lid secured thereto by riveted hinges and fastenings, and the back provided with plates riveted thereto, and carrying rings for the attachment of the shoulder strap, and said back also provided with slots, substantially as set forth. 2nd. In a fishing basket, the combination of the front and sides a, back a^1, and bottom a^{11}, partly perforated, and the partition A^1, forming a compartment 3, all moulded integrally in indurated fibre or the like material, the rings B, on plates b, and washers b^1, secured to the back, strap slots 4, in said back, lid C, hinged to the body with riveted hinges c, and provided with suitable riveted fastenings in front, and the buttons d, pieces of cloth or flannel d^1, and elastic bands d^{11}, secured to the inside of said lid, and an opening 5 approximately in the centre of said lid, substantially as set forth.

No. 41,789. Finger Guard for Knives. (*Garde-doigt de couteau.*)

John May, Penshurst, Kent, England, 2nd February, 1893; 6 years.

Claim.—In finger guards for knives, a clip a, provided with a cushion b, and rubber bearing surfaces d, in combination with back of knives, substantially as described.

No. 41,790. Method of Making Yarn from Fibrous Waste. (*Méthode de fabriquer du fil des déchets fibreux.*)

Daniel Edgar Coe, Darby, Pennsylvania, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. The improvement in the art of converting fibrous hard waste into yarn, which consists in severing the threads or strands composing the waste into sections of the appropriate length, then drawing the waste until the proper degree of attenuation is reached, and then twisting the same into yarn, substantially as described. 2nd. The improvement in the art of converting fibrous hard waste into yarn, which consists, first, in dividing the threads or strands composing the waste into sections of the appropriate length, then drawing the mass to bring such threads or strands into parallelism and the waste into the form of a sliver, then combining and drawing the slivers thus formed until the proper degree of evenness and attenuation is attained, and then twisting the product so formed into yarn, substantially as described. 3rd. The improvement in the art of utilizing fibrous hard waste in the manufacture of yarn, which consists, first, in forming the waste into laps, next in cutting or dividing these laps into sections of the appropriate length, next in forming these sections again into laps, next in drawing such laps and converting them into slivers, next in combining a number of slivers and drawing them until another sliver is formed, next in combing these last mentioned slivers without changing their form, next in combining and drawing a number of the slivers thus combed until the proper degree of evenness and attenuation have been attained, and then twisting the product so formed into yarn, substantially as described. 4th. A yarn having a number of short sections of twisted threads or strands incorporated therein and forming an integral part of its body, substantially as described. 5th. A yarn composed of a number of short sections of twisted threads or strands spun or twisted together, substantially as described.

No. 41,791. Wrench. (*Clé à écrou.*)

William C. Riesberry, Carberry, Manitoba, Canada, 2nd February, 1893; 6 years.

Claim.—1st. In a screw wrench, the combination of the upper jaw having a stem A, provided with a handle C, said stem divided transversely and connected by a hinge joint H, and the lower jaw having a downward extension socket E, sleeved on said stem below the hinge, and provided with a screw F, and nut K, or device for adjusting the lower jaw relatively to the nut, &c., as set forth. 2nd. In a screw wrench, the combination of the upper jaw having a stem A, provided with a handle C, and divided transversely between said jaw and handle and connected by a hinge joint H, a spring M, secured to one section of said stem to keep the other section in alignment therewith, a lower jaw having a downward extension or socket E, sleeved on said lower section and having an upwardly extending cheek or flange 6, provided with an inclined plane 5, and an adjusting screw reciprocating the lower jaw, as set forth, for the purpose described. 3rd. In a screw wrench, the combination, with the upper jaw having a stem A, divided transversely and connected by a hinge joint H, the lower jaw having a downward socket E, sleeved on said stem below the joint and provided with a screw F,

and nut K, for adjusting the lower jaw, and a spring M, to keep the upper and lower sections of the stem A, in alignment, and permit the upper jaw to yield by the force of the lower jaw when taking a fresh grip of a nut, &c., as described. 4th. In a screw wrench, the upper jaw having a stem A, provided with a hinge joint H, and the lower jaw having a socket E, sleeved on said stem below the joint, and a spring M, closing the hinge joint and maintaining pressure on the upper jaw after yielding to pass the corners of a nut when the lower part of the wrench is moved in one direction to take a fresh grip of said nut, as set forth.

No. 41,792. Perpetual Calendar. (*Calendrier perpétuel.*)

William W. Kitchen, Rochester, New York, U.S.A., 2nd February, 1893; 6 years

Claim.—1st. A perpetual calendar, comprising a body having a central recess and having the names of the months arranged radially around the recess, and a centre piece held to turn in the recess, provided with a bevelled edge 14, over which the edge of said recess is upset or projected,, and having the initial letters of the days of the week produced thereon and adapted to register with the month spaces, substantially as described. 2nd. A perpetual calendar, comprising a body having a central concaved recess, and having radial spaces arranged around the recess with the months of the year produced therein, a convex bottomed centre piece held to turn in the recess, said centre piece having a bevelled edge over which the adjacent portion of the body fits, and the centre piece also having a transverse slot therein and the initial letters of the days of the week produced thereon, substantially as described. 3rd. A perpetual calendar, comprising a body having a central recess therein and having names of the months arranged in radial spaces around the central recess, the month spaces having also the dominical letters therein, and a centre piece held to turn in the recess, said centre piece having letters indicative of the days of the week thereon, substantially as described.

No. 41,793. Car Coupler. (*Attelage de chars.*)

Joseph Wilson Poston, Holly Spring, Mississippi, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. An attachment for pin and link car couplings, comprising a stationary frame adapted to be mounted on the draw head, a pin supporting shoe consisting of two spring held sliding sections normally locked in contact, and means for automatically releasing said sections when two cars come together, substantially as set forth. 2nd. An attachment for pin and link car couplings, comprising a stationary frame adapted to be mounted on the drawhead, a pin supporting shoe consisting of two spring held sliding sections normally locked in contact, catches for locking said sections, and a sliding frame adapted to automatically fall and release said catches when the two cars come together, substantially as set forth. 3rd. An attachment for pin and link car couplings, comprising a stationary frame adapted to be mounted on the draw head, and provided with guides, a pin supporting shoe consisting of two spring held sections, sliding plates carrying said sections and provided with recesses, catches adapted to engage the latter to lock said sections in contact, vertical spring held rods controlling said catches, and a sliding frame adapted to fall upon said rods when the cars come together and release the catches, substantially as set forth. 4th. An attachment for pin and link couplings, comprising a stationary frame adapted to be mounted on the drawhead, and provided with guides, a pin supporting shoe posing faces with downwardly convergent recesses, a tubular pin guide carried by said frame and arranged above the shoe, and means for automatically releasing the shoe sections when the cars come together, substantially as set forth. 5th. The combination, with a stationary frame carrying a pin supporting shoe consisting of two spring held sections, and means for locking the latter in contact, said frame being provided at each side with two outwardly projecting trunnions, of a sliding frame provided in each side respectively with a straight and a curved slot receiving said trunnions, said curved slots terminating at their lower ends in offsets, substantially as and for the purpose set forth. 6th. The combination, with a stationary frame carrying a pin supporting shoe, consisting of two spring held sections, and means for locking the latter in contact, of a sliding frame provided with a link supporter, said frame being adapted when released to release the shoe sections and carry the link supporter downwardly and inwardly, substantially as and for the purpose set forth. 7th. The combination, with a stationary frame carrying a pin supporting shoe, consisting of two spring held sections, and means for locking the latter in contact, said frame being provided at each side with two outwardly projecting trunnions, of a sliding frame provided in each of its sides respectively with a straight and a curved slot receiving said trunnions, said curved slots terminating at their lower ends in offsets, and having oppositely located offsets about midway their length, and plates pivoted at their upper ends between the straight and curved slots, and provided at their lower ends with curved recesses, the latter being adjacent to the upper end of said offsets, substantially as and for the purpose set forth.

No. 41,794. Device for Lowering Burial Caskets.

(*Appareil pour descendre les cercueils.*)

John B. Beugler, Dayton, Tennessee, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. In a device of the character described, the combination, with a beam and legs supporting the beam, of a carriage held to travel upon the beam, a spring controlled wheel journalled in the carriage, a shaft, also journalled in the carriage carrying a guide wheel fixed thereto, also a ratchet wheel rigidly secured to the shaft, and a brake wheel loosely mounted upon the shaft and provided with a pawl adapted for engagement with the ratchet, a lever controlling the brake wheel, a band attached to the spring controlled wheel, and passing over the brake wheel, a sling consisting of straps and united at its ends by bars, and a clamping device carried by the straps, and adapted for engagement with one of the bars of the sling, the strap being secured to the other bar, as and for the purpose set forth. 2nd. In a device of the character described, the combination, with a beam, legs supporting the same, and a carriage adjusting upon the beam, of a spring controlled wheel journalled in the carriage, a shaft also journalled in the carriage, a sprocket wheel secured to the shaft, a ratchet wheel fast to the shaft, a brake wheel loosely mounted upon the shaft and provided with a pawl engaging with the ratchet, a brake strap engaging with the brake wheel, a lever attached to the strap, a sling consisting of straps and united at its ends by bars, a chain attached to the spring, controlled wheel, passed over the sprocket wheel and attached to one of the bars of the sling, and a clamping device provided with a releasing slide, the slide and clamping device being adapted for engagement with the other bar of the slings, substantially as shown and described. 3rd. In a device for lowering coffins, the combination, with the lowering chains or rops, of a sling consisting of straps and bars uniting the ends on the straps, one of the bars of the sling being attached to the rope or chain, a clamping plate attached to the rope or chain, and engaging with the other bar of the sling, and a spring controlled releasing slide carried by the plate engaging with the bar of the sling with which the clamping device engages, as and for the purpose specified. 4th. In a device of the character described, the combination, with a supporting beam, legs adjustably attached to the beam, and a carriage held to travel upon the beam, of a lowering mechanism carried by the carriage, a sling consisting of straps united at their ends by bars, one of which bars is connected with the lowering mechanism, a clamping plate connected with the lowering mechanism and provided with claws or hooks to engage with the bars of the sling, and a releasing slide, spring controlled, carried by the plate, and, also, adapted for engagement with a bar of the sling, as and for the purpose set forth. 5th. In a device of the character described, the combination, with a supporting beam, legs adjustably secured to the beam, a carriage held to travel upon the beam and provided with a brake lever, a hoisting mechanism connected with the carriage, and a brake mechanism coating with the hoisting mechanism, of a sling provided at its ends with bars, one of which is connected with the hoisting mechanism, a clamping plate secured to the hoisting mechanism, and adapted for engagement with the other bar of the sling, and a spring controlled releasing slide carried by the plate, and adapted for engagement with the bar with which the plate engages, substantially as shown and described.

No. 41,795. Corset. (*Corset.*)

Lewis Schiele, New York, State of New York, U.S.A., 2nd February, 1893; 6 years.

Claim.—In a corset, the front edges of the two parts constructed each part with a stay at the meeting edge and with a second stay parallel therewith, but distant therefrom, so as to leave a flexible portion between the two stays of each part, combined with a series of studs on said flexible portion of one part and corresponding series of sockets on the said flexible portion of the other part, substantially as described.

No. 41,796. Rock Drill. (*Foret de mine.*)

Thomas Francis Farrell, Niagara Falls, New York, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. The combination, in a tripod, of the top plate, the integral bearings depending therefrom, arms pivotally and adjustably secured at one end to said bearings and at the other ends pivotally and adjustably connected to a sleeve carrying the rear leg holder, with the front leg holders pivotally and adjustably secured to projections of the arms, all arranged so that said top plate, front and rear legs are pivotally adjustable upon said arms, substantially as described. 2nd. A rock drill, combining therein a cylinder, a cylinder head secured to each end of said cylinder, the upper one of said heads being provided with a hole or recess, a drill carrying piston, adapted to move up and down in said cylinder, a drill rotating bar, a toothed wheel secured to the top of said rotating bar, a segmental shaped toothed block arranged in the hole or recess of the upper cylinder head and adapted to engage said toothed wheel. two or more pins secured to said toothed block, and adapted to operate in sockets in the upper piston head, spiral springs surrounding said pins and adapted to control said toothed block and set screws, controlling said spiral springs, all said parts being arranged and adapted to operate substantially as described and for the purposes set forth. 3rd. In a rock drill rotating device, the combination, with the cylinder, piston and cylinder head, of a rotating bar, a toothed wheel secured to the top of said bar and adapted to operate in a recess of the upper piston head, a segmental shaped toothed block arranged in said recess and adapted to engage said toothed wheel, two or more pins secured to said block and adapted to operate in sockets in the cylinder head, spiral springs surrounding said pins, and set screws

controlling said spiral springs, all said parts substantially as described and for the purposes set forth. 4th. In a rock drill, the combination with the cylinder and its guide, a circular mounting plate secured to said guide and provided with a bevelled edge, a top plate provided at one side with an inwardly bevelled projection and adapted to receive the said mounting plate, a clamping block arranged at the opposite side of said top plate and adapted to adjustably secure the mounting plate to the said top plate, a set screw controlling said clamping block, bearings arranged on the top plate, arms pivotally and adjustably secured to said bearings by means of a spindle and tightening nut, said arms being provided at their free ends with enlargements, serving as bearings for the rear leg holder carrying sleeve, a spindle and tightening nut adapted to adjustably secure said sleeve to said enlargements, a horizontally extending projection arranged on each of said arms, a front leg holder adjustably secured to each of said projections, all said parts being arranged and adapted to operate substantially as described and for the purposes set forth. 5th. In a rock drill, the combination, with the cylinder and the piston, said piston being provided with an annular groove connected by channels o^2, o^3, with the upper and lower steam chamber, respectively, of a valve chamber secured to said cylinder, a double headed cylindrical piston valve arranged in said valve chamber, each piston head consisting of two discs forming a steam chamber, channels connecting said steam chambers with the upper and lower steam chamber of the cylinder, a cylinder head arranged at each end of the valve chamber, a metallic plate secured to said cylinder head, a rubber cushion arranged between said metallic plate and cylinder head, a series of channels r^2, r^3 and r^4, r^5, connecting the chambers between the metallic plates and the outer discs of the cylindrical piston valves with the live steam chamber o, and the exhaust, respectively, all said parts substantially as described and for the purposes set forth.

No. 41,797. Medicinal Compound.

(*Composition médicale.*)

Walter Wesley Baer and William Jay Manson, both of Nanaimo, British Columbia, Canada, 2nd February, 1893; 6 years.

Claim.—The composition of ingredients as a prescription for the cure of cough, and other bronchial affections, consisting of syrupus, papaveris, spiritus jamciensis, acidum sulphuricum oil, naphthalin and syrupus simplex, substantially in the proportions and for the purposes set forth.

No. 41,798. Inking Apparatus for Printing Presses.

(*Appareil pour encrer les presses à imprimer.*)

Thomas George Spence, Brooklyn, New York, U.S.A., 2nd February, 1893; 6 years.

Claim.—1st. The combination of the type bed, an attachable frame therefor, a roller at each side of said frame, a ribbon attached to such rollers and extending across the frame, and means, such as described, for intermittently operating said rollers, as set forth. 2nd. In a printing press, the combination of the type frame, the platen, the inking ribbon extending across the frame between it and the platen, a roller at each end of the ribbon, to which the ribbon is secured, a ratchet and pawl mechanism for such roller, and a rod extending therefrom and connected with the platen, whereby after each impression a portion of the ribbon is moved for the next impression, as set forth. 3rd. In a printing press, the combination of the type frame, the platen, an inking ribbon between them, rollers at the ends of such ribbon, and tighteners located at the loose opposite edges of such ribbon, as set forth.

No. 41,799. Reversible Envelope. (*Enveloppe reversible.*)

David Irvine Barnett, Toronto, Ontario, Canada, 2nd February, 1893; 6 years.

Claim.—1st. A reversible envelope comprising a case open at both ends, a central dividing wall within the case separating the envelope into two contents receiving pockets, a flap at each end of the central dividing wall adapted to close the open ends of the envelope, substantially as and for the purpose specified. 2nd. A reversible envelope comprising a case open at both ends, a central dividing wall within the case separating the envelope into two contents receiving pockets, a flap at each end of the central dividing wall adapted to close the open ends of the envelope, and means for fastening said flaps, substantially as specified. 3rd. A reversible envelope comprising a case open at both ends, a central dividing wall within the case separating the envelope into two contents receiving pockets, a flap at each end of the central dividing wall, adapted to close the open ends of the envelope, a fastening device to secure said flaps, comprising a slit formed in each of said flaps, and extending inwardly and forwardly from the edge and arranged at an angle thereto, the said slits being cut from the opposite edges of said flaps, substantially as and for the purpose specified.

No. 41,800. Car Coupler. (*Attelage de chars.*)

August Hoyrmaun, Bubenc, and Arthur Stein, Schonpriesen, all in Bohemia, 2nd February, 1893; 6 years.

Claim.—1st. A duplex automatic coupling for railway and similar vehicles, consisting of hinged or pivoted links or rings of different widths, which come into contact with and pass up inclined planes formed on the coupling hooks and engage therewith upon two carriages being moved together, constructed and arranged, substantially as hereinbefore described and as illustrated by the accompanying drawing. 2nd. In a duplex automatic coupling for railway and other vehicles, the combination, with a draw bar capable of longitudinal movement, of pivoted links, rings, or their equivalent, and suitable projections or inclined planes for moving the pivoted links upwards, all constructed and arranged substantially as hereinbefore described and as illustrated by the accompanying drawing. 3rd. A duplex automatic coupling for railway and other vehicles, consisting of longitudinally movable draw bars, coupling hooks formed with inclined planes, pivoted links or rings, apparatus for lifting these links or rings, for coupling, and apparatus for imparting longitudinal motion to the draw bars, all arranged, constructed and operated substantially as hereinbefore described and as illustrated by the accompanying drawing. 4th. The combination, with a duplex automatic coupling for railway and similar vehicles, such as is hereinbefore described, of a locking or safety device, constructed and arranged as set forth and as illustrated by the accompanying drawings. 5th. The combination, with the duplex automatic coupling herein described, of an indicating device, substantially as described.

No. 41,801. Papeterie. (*Papeterie.*)

Adolf Bühler, Reichenhall, Bavaria, Empire of Germany, 4th February, 1893; 6 years.

Claim.—1st. The combination, with a package of double sheet of letter paper, or of a plurality of superposed envelopes, arranged with their sealing flaps overlapping one another, of a holder c, of greater length than the paper or envelopes, and inserted between the two pages, of the inner sheet of paper or under the flap of the upper envelope of the packages along the fold thereof, and a backing of more or less rigid material, to which said holder is secured, as described, for the purposes specified. 2nd. A block of letter paper, comprising a backing of more or less rigid material, a plurality of superposed packages of double sheet letter paper, said packages being arranged with their folded portions alternating with the edges of the sheets, and a holder c, for each package inserted in the inner sheet along the fold thereof, the ends of said holder being secured to the backing, as described, for the purposes specified. 3rd. The combination, with a package of envelopes, arranged with their sealing flaps overlapping one another, of a holder consisting of a strip c, of more or less flexible material, provided with a slit or slot for the passage of said sealing flaps, and a backing to which the strip c, is secured, as described, for the purposes specified. 4th. The combination, with two packages of envelopes e, arranged relatively to each other, as described, the holder or holders c, for said packages, and a backing of more or less rigid material, to which said holder or holders are secured, of a fastener secured to said backing and arranged to overlap the contiguous edges of the packages of the envelopes, substantially as described, for the purposes specified. 5th. A block of letter paper or envelopes, comprising a plurality of superposed packages of such, arranged as described, and the holders c, for the individual packages, and a backing or wrapper to which said holders are secured, said backing or wrapper being constructed to inclose the blocks of paper or envelopes, substantially as described, for the purposes specified. 6th. The herein described article of papeterie, comprising a double or folding wrapper, a block of envelopes consisting of a series of packages of such, holders for each individual package secured to the wrapper, as described, and a block of letter paper consisting of a plurality of packages of such, holders for each package thereof, and a backing to which said holders are secured, said parts being arranged and combined, substantially as described, and for the purposes specified. 7th. The herein described article of papeterie, comprising a double or folding wrapper h, provided on its edges with loops h^1, a block of envelopes consisting of a series of packages e of such, holders for each individual package secured to the wrapper, and a block of letter paper consisting of a plurality of packages a of such, holders for each individual package thereof, and a backing to which said holders are secured, said parts being arranged and combined, substantially as shown and described and for the purposes specified. 8th. The herein described article of papeterie, comprising a double or folding wrapper h, provided on two of its meeting edges with loops h^1, and on one half of its inner face with receptacles p and p^1, a block of envelopes consisting of a plurality of packages e of such, holders for each individual package secured to the wrapper, and a block of letter paper consisting of a plurality of packages a of such, holders for each individual package thereof, and a backing d, to which such holders are secured, said parts being arranged and combined, substantially as shown and described. 9th. The combination of a back d, slit n, tongue flap m, and envelope e, substantially as set forth. 10th. The combination of a back d, tongue flaps m, flaps n^1, having a slit and envelope, substantially as set forth.

No. 41,802. Bitters. (*Bitter.*)

James B. Ditmars, Clementsport, Nova Scotia, Canada, 4th February, 1893; 6 years.

Claim.—A compound, composed of a decoction of five pounds of wild cherry barks, (four red, one black), one pound princess pine, one pound balmony herb, one half pound juniper berries, bruised, one half gallon of alcohol and sufficient water to make about

six gallons, mixed with a syrup composed of three and one half pounds of granulated sugar, eight ounces tincture of prickly ash berries, and three pints of Rye whiskey, substantially in the proportions and for the purposes set forth.

No. 41,803. Electric Railway.

(*Chemin de fer électrique.*)

The Universal Electric Company of the City of New York, assignee of Granville Taylor Woods, New York, all of the State of New York, U.S.A., 4th February, 1893; 6 years.

Claim.—1st In an electric railroad system, the combination of the insulated lead or leads of the main circuit, a series of boxes having interior contact devices with which the main circuit is connected, each box being charged with oil or other insulating fluid in which the contacts are immersed and having a porous medium or portion through which the oil exudes and coats the exterior of the box and its connections, and a switch arm carried by the box and controlling the enclosed main circuit contacts, and adapted to be operated by a contact brush or device carried by the passing car. 2nd. In an electric railroad system, the combination of the lead or leads of the main circuit, a conduit, a series of boxes arranged therein, insulated connections from the lead or leads leading to contact devices within the boxes, the switch or contact arms of the boxes adapted to be operated by the brush of the passing car to complete the main circuit through the motor thereon, a pipe system for distributing oil or other insulating fluid under pressure and connections between said system and the interior of the boxes. 3rd. In an electric railroad system, the combination of the lead or leads of the main circuit, a conduit, a series of boxes arranged therein, insulated connections from the lead or leads leading to contact devices within the boxes, the switch or contact arms of the boxes adapted to be operated by the brush of the passing car to complete the main circuit through the motor thereon, a pipe system for distributing oil or other insulating fluid under pressure, and connections between said system and the interior of the boxes, each box having a porous medium or portion through which the oil filtrates and coats the exterior of the boxes and their connections. 4th. In an electric railroad system, the combination with the conduit of a series of boxes located therein and containing oil or other insulating fluid therein under pressure, the insulated lead or leads of the main circuit having insulated branches leading to contact devices within the boxes submerged in the oil, and contact controlling devices adapted to be actuated by the brush or contact device on the passing car to complete the circuit through the motor thereon, each box having a porous medium or portion through which the oil filtrates and coats the exterior of the box and its connections. 5th. In an electric railroad system, the combination of the lead or leads of the main circuit, the conduit, a series of closed boxes arranged therein having interior contact devices connected with the lead or leads, laterally projecting yielding switch arms, and the brush carried by the car, the brush having contact face or faces against which the switch arms work and insulation extending beyond the ends of the contact faces for the purpose set forth. 6th. In an electric railroad system, the combination of the lead or leads of the main circuit, the conduit, a series of closed boxes arranged therein having interior contact devices conected with the lead or leads, laterally projecting yielding switch arms, and the brush carried by the car, the brush having contact face or faces against which the switch arms work, and insulation extending beyond the ends of the contact faces, and the boxes being filled with oil, for the purpose set forth. 7th. In an electric railroad system, the combination of the lead or leads of the main circuit, the conduit, a series of closed boxes arranged therein, having interior contact devices connected with the lead or leads, latterly projecting yielding arms, and the brush carried by the car, the brush having contact face or faces against which the switch arm works, and insulation extending beyond the ends of the contact faces, and the boxes filled with oil, and having a porous medium or portion through which the oil filtrates and coats the exterior of the boxes and their connections, for the purpose set forth. 8th. The combination, substantially as set forth, of a conduit, the boxes therein having the yielding switch arms D, and the brush to be carried by the car having a contact plate b^1, which works against and makes contact with the switch arms, and insulation extending beyond the ends of the contact plate. 9th. The combination, substantially as set forth, of a conduit, the boxes therein having the yielding switch arms D, and the brush to be carried by the car having a contact plate b^1, which works against and makes contact with the switch arms, and insulation extending beyond the ends of the contact plate, the insulation extension being below or inside of the plane of the surface of the contact. 10th. The combination of the shell of the box having two projections or coupling connections, one p^2, for the connection of an oil supply pipe, and one g^1, for the leading in of a circuit conductor, the contact plate connected with the end of the conductor within the box, the contact arm working against said plate, the shaft or rod to which it is attached, its bearing, the porous packing surrounding the bearing and closing the end of the box, and the switch arm D carried by the shaft. 11th. The combination, substantially as set forth, of the box shell, the inwardly projecting flange *c*, the plates of insulating material and porous packing, the flanged sleeve, the shaft therein, the interior contact arm carried by the shaft, the switch arm carried by its outer end, the clamp nut on the screw and the spring connected with the switch arm and the clamp nut. 12th. The combination of the shell of the box, means for maintaining a supply of oil therein, the shaft or rod, its bearing and the switch arm, the edge of the box being extended up beyond the bearing of the shaft to form an oil receptacle. 13th. The combination of the box, the spring switch arm, its rod or shaft, the spring that holds the shaft in normal position, the contact arm carried by the shaft within the box, and the contact plate within the box to which the insulated circuit wire is connected. 14th. In an electrical railroad, a brush adapted to be carried by a car, consisting of insulating material having a contact plate on one or both sides, beyond the ends of which the insultion extends.

No. 41,804. Process of Making Scythes and Similar Tools. (*Procédé de fabrication des faux et autres outils semblables.*)

Joseph Reesman Mann, Pittsburg, Pennsylvania, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. The herein described process of forming a pattern for a scythe or similar tool, which consists in employing two solid bars, only of metal of different grades, and inserting one bar in the other in such manner that one edge of the harder metal will be exposed, substantially as and for the purpose specified. 2nd. The herein described process of forming a pattern for scythes or other tools, which consists in employing two solid bars only of metal of different grades, a body stock and an edge stock, and inserting the edge stock into the body stock when the latter is in a heated state, substantially as described. 3rd. The herein described process of forming a pattern for scythes or kindred tools, which consists in introducing in a solid bar of body stock a solid wedge bar of edge stock, substantially as specified. 4th. The herein described process of forming a pattern for a scythe or similar tool, which consists in employing as a body stock a solid bar of metal of one grade, and as an edge stock a solid metal bar of another grade, and forcing the body stock in a heated state upon and over the edge stock, the latter being in a cool state, substantially as and for the purpose set forth. 5th. As an improved article of manufacture, a pattern for scythes and similar tools, comprising as a body stock a transversely solid bar of one grade of metal, and as an edge stock a solid bar of a different grade of metal, the edge stock being embedded in the body stock, substantially as and for the purpose set forth. 6th. As an improved article of manufacture, a pattern for scythes and similar tools, comprising as a body stock a transversely solid bar of one grade of metal, and as an edge stock a transversely solid bar of a different grade of metal, essentially wedge shaped in cross section, which edge stock is embedded in the body stock, one longitudinal edge being exposed, as and for the purpose set forth.

No. 41,805. Apparatus for Making Peat Fuel.

(*Fabrication de combustible végétale.*)

The Ontario Peat Fuel Company, Toronto, Ontario, assignee of Archibald Anderson Dickson, Cote St. Antoine, Quebec, Canada, 4th February, 1893; 6 years. (Re-issue).

Claim.—1st. In an apparatus for manufacturing peat fuel, the combination, with mechanism for depriving the peat of foreign substances and extra moisture, of a heated chamber, into which the peat is fed continuously, a carrier within said chamber, and a hot air blast arranged to pass through said heated chamber, substantially as and for the purpose specified. 2nd. A press for forming blocks of peat fuel, consisting of an outer steam jacket, a cylinder or tube surrounded thereby, and a transverse passage through which the peat is fed to the interior of the cylinder, a plunger working therein, and a yielding resistance block inserted therein at the beginning of operation, all substantially as herein described. 3rd. In an apparatus for the manufacture of peat fuel, a drying chamber through which the peat is conveyed, and means for creating a suction through such chamber, for the purpose described. 4th. In an apparatus for the manufacture of peat fuel, a drying chamber, a hot air conductor communicating with said chamber, and a suction fan for exhausting such hot air, all combined and operating as and for the purpose described. 5th. In a peat machine, a hollow cylinder with means for conveying the peat through said cylinder, an air draft communicating therewith whereby the air is conveyed through said hollow cylinder, substantially as and for the purpose specified. 6th. In an apparatus for converting peat into fuel, a press for forming blocks consisting of a hollow cylinder or former having a plunger working therein, means for feeding the peat to the hollow cylinder or former and a resistance block fitted to the hollow cylinder or former, substantially as and for the purpose specified.

No. 41,806. Box or Case for Containing Jewellery or other Articles. (*Boîte ou étui pour contenir des bijoux ou autres objets.*)

The Detector Patent Safety Postal Box Syndicate, assignee of William Heatley, of 55 Curtain Road, London, England, 4th February, 1893; 6 years.

Claim.—1st. The construction and use of a wooden box or case having spring locking bar lid, as and for the purposes set forth. 2nd. A wooden box lid having bevelled edges, a cross bar with locking tongues and undercut grooves, substantially as set forth. 3rd. A wooden box having bevelled edges to the opening to be closed by a lid, internal side grooves to receive locking projections of a lid and

angularly pinned side walls, substantially as set forth. 4th. A wooden box having bevelled edges to the opening therein, internal side grooves to receive locking projections from a wooden lid, and angularly pinned side walls in combination with a lid having bevelled edges corresponding to the edges of the box opening, a cross bar and undercut grooves thereto, substantially as set forth.

No. 41,807. Game. (*Jeu.*)

Frederick T. Butler, Toronto, assignee of George H. Coo, Grimsby, all in Ontario, Canada, 4th February, 1893; 6 years.

Claim.—1st. In a game apparatus, substantially as described, a piece or man, provided with a device adjustably secured to, or placed thereon, to indicate the piece or man having the ball, substantially as described. 2nd. In a game apparatus, a chart or board A, having the lines H, and spots C, thereon, in combination with a suitable number of pieces or men, divided into two or more sets, suitably coloured or otherwise designated, one of which men having the ball, is provided with a device D, adjustably secured to, or placed thereon, to indicate the piece or man having the ball, substantially as described. 3rd. In a game apparatus, a chart or board A, having the lines H, and spots C, some of the latter being enclosed in a circle to designate the position of the men at the commencement of the game, in combination with a suitable number of pieces or men, divided into two or more sets, and suitably coloured or otherwise designated, one of which men having the ball, is provided with a device D, adjustably secured to or placed thereon, to indicate the piece carrying the ball, substantially as described. 4th. In a game apparatus, a chart or board A, having the lines H, spots C, goal flags, E, E^1, and goal circles or creases I, thereon, in combination with a suitable number of pieces or men, divided into two or more sets, and suitably coloured or otherwise designated, one of which men, having the ball, is provided with a device D, adjustably secured to or placed thereon, to indicate the piece or man having the ball, substantially as described.

No. 41,808. Inner Sole for Footware.

(*Fausse-semelle pour chaussures.*)

Augustine F. Littlefield, Lynn, Massachusetts, and Isaac Buck Lewis, Brooklyn, New York, all in the U.S.A., 4th February, 1893; 6 years.

Claim.—As an improved article of manufacture, an inner sole having a channel therein, a filling secured in the channel, and a veneer secured to its top surface and doubled over the edge so as to cover the channel, substantially as described.

No. 41,809. Computing Machine. (*Machine à compter.*)

Thomas B. Walker and Sarah E. Wilson, both of Minneapolis, assignees of Peter J. Landin, of Minneapolis aforesaid, all in Minnesota, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. The combination, with a suitable casing, of a series of ratchet wheels arranged therein, and a series of slides arranged in said casing, and partially exposed and provided with a series of notches arranged to engage said ratchet wheels as the slide is moved in one direction, and to pass said ratchet wheels without moving them as the slide is moved in the opposite direction, and provided also with a numbered series of notches arranged in the exposed portion of said slides, and corresponding with the series of notches which engage with the wheels, substantially as described. 2nd. The combination, with a suitable casing, of a series of slides arranged in said casing and partially exposed, of a series of ratchet wheels arranged in said casing, and adapted to be engaged by said slides as they move in one direction, and to remain stationary as the slides move in the opposite direction, and provided with a series of numbers or figures, and means for automatically retracting said slides after each movement thereof, substantially as described. 3rd. The combination, with a suitable casing, of a series of ratchet wheels arranged therein, provided with figures or characters, and a series of slides engaging said ratchet wheels, and provided with a series of numbered notches or recesses arranged on exposed portions of said slides, whereby as said slides are moved by placing an instrument upon one of the notches, the corresponding ratchet wheel will be moved to register a number corresponding to the number of the notch so engaged, and will remain in this position while the slide is returned to its normal position, substantially as described. 4th. The combination, with a suitable casing, of a series of ratchet wheels arranged therein, means for resetting said wheels after each operation, and a series of slides arranged to engage directly with said wheels, and turn them as the slides are moved in one direction, and to pass without turning them as the slides are moved in the opposite direction, rnd provided with a series of numbered notches arranged outside of a said casing, for the purpose specified. 5th. In a machine of the class described, the combination, of a notched slide provided with a series of numbers, a stop arranged in the line of movement of said slide, and a ratchet wheel engaged and turned by said slide as it is moved in one direction, and provided with a series of numbers whereby as said slide is moved to bring any one of its numbers opposite said stop, the ratchet wheels are turned and the same number is registered, substantially as described. 6th. In a machine of the class described, the combination, with the casing having an inclined lower wall and an open lower front portion, of a series of slides arranged in said casing, and provided with numbered notches arranged opposite the open portion of said casing, and a series of registering wheels arranged in said casing opposite an opening through which the numbers on the wheels may be seen, and adapted to be engaged and operated by said slides as they are moved in one direction and to remain stationary as they are moved in the other direction, substantially as described. 7th. In a machine of the class described, the combination, with a casing having a portion of its front open, of a series of slides arranged in said casing, and having a series of numbers arranged opposite the open portion of of said casing, whereby said slides may be moved by the application a suitable instrument to any one of its notches, springs for returning said slides to their normal positions after each operation, and a series of registering wheels arranged in said casing opposite a suitable opening, and adapted to be engaged and operated by said slides as they are moved in one direction only, substantially as described. 8th. The combination, with a series of registering ratchet wheels, of a series of slides provided with a series of notches corresponding to the ratchet teeth upon said wheels, and adapted to engage and turn said wheels as the slides are moved in one direction, and means for preventing a reversed movement of said wheels as the slides are turned in the oppsite direction, and a series of numbered notches upon said slides corresponding to the numbers upon said wheels, whereby said slides are adapted to be moved by engaging a suitable instrument with any one of said notches, substantially as described. 9th. The combination with a suitable casing, of a series of ratchet wheels arranged therein and provided with a series of characters or figures, a series of slides engaging said ratchet wheels, and provided with a series of numbered notches or recesses arranged in portions of said slides that are exposed, means for preventing said wheels from moving in a reversed direction, and means for automatically retracting said slides after each operation, substantially as described. 11th. The combination, with a series of registering wheels provided with ratchet teeth or notches, of a series of slides provided with a corresponding series of ratchet teeth or notches adapted to engage directly with the teeth upon said wheels as said slides are moved in one direction, means for retracting said slides after each movement, and means for preventing a reverse movement of said wheels, substantially as described. 11th. The combination, with a casing 2, provided with a shaft 4, of the series of ratchet wheels arranged upon said shaft, and having a figure or character for each ratchet tooth or notch upon each wheel, said wheels being arranged opposite an opening in said casing, a series of slides provided with ratchet teeth corresponding with the teeth upon said wheels, and provided with a corresponding series of numbered notches arranged in a portion of said slides that is exposed, and springs for returning said slides to their normal positions after each movement, and means for preventing a reverse movement of said wheels, substantially as described. 12th. The combination, with a series of registering wheels and means connecting said wheels, whereby each wheel is caused to move one notch or space, when the next lower wheel in the series moves a complete revolution, each of said wheels being provided with a series of ratchet teeth or notches, of means for preventing said wheels from moving in the reverse direction, a series of slides each provided with a series of teeth or notches corresponding with the ratchet teeth or notches on said wheels, and adapted to engage and turn said wheels as the slides are moved in one direction, and means for retracting each of said slides after each movement thereof, substantially as described. 13th. The combination, with a series of registering wheels and means connecting said wheels, whereby each wheel is caused to turn one space when the next lower wheel in the series makes a complete revolution, of means for preventing said wheels from moving in the reverse direction, means for simultaneously setting all of said wheels at zero, a series of slides each provided with a series of ratchet teeth corresponding to the teeth upon said wheels, and adapted to engage and turn said wheels as the slides move in one direction, and means for retracting said slides after each movement, substantially as described. 14th. The combination, with a suitable case, of a series of registering ratchet wheels arranged therein, means connecting said wheels whereby each wheel is caused to move one space as the corresponding wheels make a complete revolution, means for preventing the reverse movement of said wheels, a series of slides, each provided with a series of ratchet teeth or notches corresponding to the teeth on said wheels, and with a corresponding series of numbered notches arranged in exposed portions of said slides, and means for retracting each of said slides after each movement thereof, substantially as described.

No. 41,810. Railway Signal. (*Signal de chemin de fer.*)

Arthur Wellesley Berne and William H. Walsh, both of New York, State of New York, U.S.A., 4th February, 1893; 6 years.

Claim—1st. In combination, insulated electric conductors located along a railway track, a part of an electric circuit on a motor and in electric connection with the insulated conductor, said partial circuit including a signal and a battery, and a circuit closer in connection with the aforesaid insulated conductors, whereby a complete circuit is made through the signal on the motor whenever the motor enters upon a block where the insulated conductors are in closed electric connection at another point than through the signal, substantially as set forth. 2nd. In combination, insulated electric conductors located along a railway track, a part of an electric circuit on a locomotive and in electric connection with the insulated conductors, said partial circuit including a signal and a battery, a movable rail form-

ing a part of the railway track, contact pieces, one in electrical communication with one of the insulated conductors and the other with the other of the insulated conductors, and a circuit closer insulated from surrounding objects, and connected with the movable rail to move with it into and out of engagement with the contact pieces to make a second electric connection between the insulated conductors, substantially as set forth. 3rd. In combination, a railway track, a swinging bridge from a support for the rails of a portion of the track, contact pieces having a normal tendency to rest in electrical contact, insulated conductors located along the track and connected, the one with one of the contact pieces and the other with the other contact piece, an insulating piece carried by the bridge and adapted to separate the contact pieces when the bridge is closed and permit them to close when the bridge is open, and partial electric circuit carried by a motor and including a battery and a signal, said partial circuit being in constant electrical contact with the insulated conductors, substantially as set forth.

No. 41,811. Muzzle. (*Muselière.*)

Nelson Gillespie and Chester Gillespie, both of Hoosick Falls, New York, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In an animal muzzle, the combination, with a support, and means for securing the support upon the animal's head, of a collapsible link guard pendent from the support and extending around and below the animal's mouth, and detachable link mechanism for closing the lower end of the guard, substantially as described. 2nd. The animal muzzle having the separate transverse flexible link diaphragm detachably supported by the muzzle guard, said transverse link diaphragm having an open mesh to permit an animal to eat slowly through the same, substantially as set forth.

No. 41,812. Car Coupler. (*Attelage de chars.*)

William R. Knight, William R. Ownby and Ambrose Pierce, all of Rector, Arkansas, U.S.A., 4th February, 1893; 6 years.

Claim.—In a car coupling, the combination of a draw head, a coupling pin, a rock shaft journalled in the bottom of the draw head and provided at one end with a crank handle having perforations in its horizontal arm, said rock shaft being arranged in rear of the coupling pin, a link lifting plate arranged on the bottom of the draw head, and provided in its upper face with grooves, and having a longitudinal coupling pin slot and secured at its rear end to the rock shaft, a rock shaft 10, provided with an arm 9, a link pivoted to the arm 9, and provided with an eye receiving the horizontal arm of the crank handle, keys arranged in the perforations of said crank handle and securing the link to the same, and a detachable crank handle secured to the other end of the rock shaft 3, substantially as described.

No. 41,813. Book Rest. (*Appui pour livres.*)

Benjamin Gunnarson and Bengt Gunnarson, both of West Haven, Connecticut, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In a book rest, the combination, with two side pieces adapted at their lower ends to be attached to a chair, of two arms pivoted at their upper ends to the said side pieces and adapted at their lower ends to be attached to a chair, and a book rest hinged at one end to the upper end of one of the said side pieces, and provided with means for attaching its opposite end to the other side piece, substantially as described. 2nd. In a book rest, the combination, with two side pieces adapted at their lower ends to be attached to a chair, of two arms pivoted at their upper ends to the said side pieces and adapted at their lower ends to be attached to a chair, and a book rack attached to the upper ends of said side pieces having a leaf hinged to its lower edge and folding against its rear face and forming a receptacle for papers when open, substantially as described. 3rd. In a book rest, the combination, with two side pieces adapted at their lower ends to be attached to a chair, of two arms pivoted at their upper ends to the said side pieces and adapted at their lower ends to be attached to a chair, a book rack hinged to one of the said side pieces, means for securing the opposite end of the book rack to the other side piece, a leaf hinged to the lower edge of the rack and folding against its rear face, a pencil case attached to the lower edge of the said rack, and a suspension loop attached to the upper edge thereof, substantially as described.

No. 41,814. Apparatus for Stopping Engines.

(*Appareil pour arrêter les machines à vapeur.*)

The Electro Automatic Appliance Company, assignee of Frederick Denison Taylor, all of Hartford, Connecticut, U.S.A., 4th Februay, 1893; 6 years.

Claim—1st. In an apparatus for stopping an engine or other motor, in combination, a spring actuated shaft having a threaded portion, a clutch part secured to said shaft, an actuating spring having one end secured to the shaft, and the other to a fixed part of the frame, a reciprocating nut borne on the threaded portion of the shaft and held against rotation thereon, a spring actuated shipping lever extending across the shaft, and with its outer end engaging a tumbler, the tumbler with its outer end adapted to engage the armature of an electro magnet, the spring pawl having a shoulder located in the path of movement of the shipping lever, and the trip device with one end adapted to engage the spring pawl, and the other located in the path of movement of the nut, all substantially as described. 2nd. In an apparatus for stopping an engine or other motor, in combination, a spring actuated shaft having a threaded portion, a clutch device having one part secured to said shaft and the other part mounted in operative relation thereto, the shipping lever extending across the shaft between an elastic buffer and a reciprocating nut, the reciprocating nut borne on the threaded portion of the shaft and held against rotation thereon, and an electro magnet having its armature adapted to engage the tumbler of the releasing and resetting mechanism, all substantially as described. 3rd. In an apparatus for stopping a steam engine or other motor, in combination, a spring actuated shaft having a threaded portion, a clutch part secured to said shaft, the actuating spring connected to the shaft and to a fixed portion of the frame, the sprocket wheel secured to the outer end of the shaft, a reciprocating nut borne on the threaded portion of the shaft and held against rotation thereon, a shipping lever extending across the shaft and having its outer end engaging a cam slot in a tumbler, a buffer located back of the shipping lever, the tumbler having a cam slot in engagement with a projection on the shipping lever, and an arm engaging a catch on the armature of an electro magnet, the armature having a catch device, the clutch part mounted in operative relation to the shipping lever, the trip device with means for holding the clutch parts disengaged, and the reciprocating nut having a flange adapted to operate the trip device in its reciprocating movement along the shaft, all substantially as described. 4th. In an apparatus for stopping a steam engine or other motor, in combination, the spring actuated shaft having a threaded portion, the clutch part secured to one end of the shaft, a sprocket wheel secured to the outer end of the shaft, an actuating spring secured to the shaft and to a fixed part of the frame, and mechanism, substantially as described, for releasing the clutch and automatically resetting the releasing mechanism, all substantially as described. 5th. In combination, in an apparatus for stopping a steam engine or other motor, a spring actuated shaft having a threaded portion, the shatf actuating spring, the clutch parts secured to the shaft and to the frame respectively, and the releasing and resetting mechanism comprising a flanged nut borne on the threaded portion of the shaft, and held against rotation thereon, all substantially as described. 6th. In combination, in an an apparatus for stopping a steam engine or other motor, a spring actuated shaft having a threaded portion, the shaft actuating spring, the clutch parts secured to the shaft and to the frame respectively, the releasing and resetting mechanism, comprising a flanged nut borne on the threaded portion of the shaft and held against rotation thereon, the flange of the nut having a series of locking notches, all substantially as described. 7th. In combination, in an apparatus for stopping a steam engine or other motor, a spring actuated shaft, the clutch parts secured to the shaft and to the frame respectively, the releasing and resetting mechanism, comprising with the other elements a tumbler and a swinging shipping lever in operative engagement with each other, all substantially as described. 8th. In combination, in an apparatus for stopping a steam engine or like motor, a spring actuated shaft having a threaded portion, the clutch parts secured to the shaft and to the frame respectively, the releasing mechanism, substantially as described, and the resetting mechanism comprising a reciprocating nut borne on the threaded portion of the shaft, and held against rotation thereon, all substantially as described.

No. 41,815. Cash Register and Indicator.

(*Régistre et indicateur.*)

Hugo Cook, Dayton, Ohio, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In a registering machine, the combination of a main actuator, a driving mechanism therefor, capable of connection therewith and disconnection therefrom, a series of keys whose relative positions determine the different points at which the actuator shall be disconnected from the driving mechanism, an indicator wheel geared to the actuator and moving therewith, a type wheel or carrier moving in unison with the indicator wheel, and a printer co-operating with the type wheel. 2nd. In a registering machine, the combination of an oscillatory shaft, a gear toothed segment mounted on said shaft, a latch for connecting the segment with and disconnecting it from the shaft, a series of keys co-operating with the latch and whose relative positions detrmine the different points at which the segment shall be disconnected from the shaft, an indicator wheel geared to the segment, a type wheel moving in unison with the indicator wheel, and a printer co-operating with the type wheel. 3rd. In a registering machine, the combination of a revoluble shaft and a handle for operating the same, an oscillatory shaft a crank and pitman connection between the two shafts, a series of gear toothed segments loosely mounted upon the oscillatory shaft, latches for connecting the segments with and disconnecting them from the oscillatory shaft, a series of banks of keys, one bank for each segment, and co-operating with the latch thereof to disconnect the segment from the oscillatory shaft at different points, according to the key which is operated, a series of indicator wheels, one for each bank of keys and its associated segment and geared to the latter, and a registering mechanism actuated by the segments to register the values indicated. 4th. In a registering machine, the combination of a revoluble shaft, and a handle for operating the same, an oscillatory shaft, a crank and pitman connection between the two shafts, a series of gear toothed segments loosely mounted upon the oscillatory shaft, latches for connecting the segments with and dis-

connecting them from the oscillatory shaft, a series of banks of keys, one bank for each segment and co-operating with the latch thereof to disconnect the segment from the oscillatory shaft at different points, according to the key which is operated, a series of indicator wheels, one for each bank of keys and its accociated segment and geared to the latter, a series of type wheels, one corresponding to each indicator wheel and moving in unison therewith, and a printer co-operating with the type wheels and actuated by the revoluble shaft. 5th. In a registering machine, the combination of a main actuator, a driving mechanism therefor capable of connection therewith and disconnection therefrom, a series of keys whose relative positions determine the different points at which the actuators shall be disconnected from the driving mechanism, an indicator wheel driven by the actuator, and a lock actuated by the driving mechanism at the beginning of its movement to lock the unoperated keys while the indicator wheel is being moved to indicate the value of the operated key. 6th. In a registering machine, the combination of a revoluble shaft and a handle for operating the same, an oscillatory shaft actuated by the revoluble shaft, an actuator capable of connection with and disconnection from the oscillatory shaft, a series of keys whose relative positions determine the different points at which the actuator shall be disconnected from the oscillatory shaft, and a lock applied to the revoluble shaft to lock the same and its operating handle from movement, and actuated by the keys to release the shaft and handle whenever any key is operated. 7th. In a registering machine, the combination of the gear toothed segment J, the latch N, pivoted thereto and provided with the recess *b*, and shoulder *c*, the arm Q, the oscillating cam Z, co-operating with the arm Q, and the lug Z^1, co-operating with the recess *b*, and shoulder *c*, and the keys V, co-operating with the outer end of the arm N, to disconnect the latter from the lug Z^1. 8th. In a registering machine, the combination of a gear toothed segment J, the latch arm N, pivoted thereto and provided with the recess *a*, and *b*, and shoulder *c*, the cam Q, oscillating cam Z, co-operating with the cam Q, and the lug Z^1, co-operating with the recess *b*, and shoulder *c*, the keys V, co-operating with the recess *a*, in the outer end of the arm N, to disconnect the latter from the lug Z^1, the detent plate U, and the plate S, co-operating with the plate U, and provided with the lug R, co-operating with the arm Q, to hold the arm N, out of engagement with the lug Z^1, when no key of the series has been operated. 9th. In a registering machine, the combination of a gear toothed segment J, the latch arm N, pivoted thereto and provided with the recess *a*, and *b*, and shoulder *c*, the cam Q, the oscillating cam Z, co-operating with the cam Q, and the lug Z^1, co-operating with the recess *b*, and shoulder *c*, the keys V, co-operating with the recess *a*, in the outer end of the arm N, to disconnect the latter from the lug Z^1, the detent plate U, provided with the tooth Y, and sliding plate S, having a notch co-operating with the tooth Y, and provided with the lug R, co-operating with the arm Q, and also with a lug A^1 on the cam Z, and the arm Z^2 rigid with the cam Z, and arranged to move the detent plate U, at the completion of the forward stroke of the cam Z, to release the operated key. 10th. In a registering machine, the combination, of the revoluble shaft B, having the handle A, and gear C, fast thereon, the revoluble shaft E, having fast upon it a gear D, meshing with the gear C, and also a crank F, the oscillating shaft I, having fast upon it the arm H, the pitman C, connecting the crank F with the arm H, the segments J, loosely mounted on the shaft I, the latches for connecting the segments with and disconnecting them from the shaft I, the series of banks of keys V co-operating with the latches, the indicator wheels M, geared to the segments J, the type wheels driven by the segments J, and moving with the wheels M, the printer F^1 co-operating with the type wheels, and actuated by a cam H^4, fast upon the revoluble shaft E, and the registering wheels driven by the segments J, to register the values indicated by the registering wheels M. 11th. In a registering machine, the combination, of the cam disk B^3, revoluble with the operating handle A, the series of banks of keys V, the detent plates U, the rock shaft B^1, having fast thereon the arms C^1, co-operating with the lugs C^2, upon the detent plates U, and the arm B^2, fast upon the rock shaft B^1, and co-operating with the disk B^3, to alternately lock and release the operating handle and the detent plates in the manner described. 12th. In a registering machine, the combination, of the type wheels, the printer, the ticket receptacle containing the supply of tickets, and the feed wheel having a portion of its circumference toothed or roughened, and a portion cut away or left smooth, to intermittently feed the tickets from the receptacle to the printing point. 13th. In a registering machine, the combination, of the type wheels having the toothed locking wheels H^1 rigid therewith, the locking frame H^2 co-operating with the wheels H^1, and the revoluble cam H^4, for operating the locking frame H^2. 14th. In a registering machine, the combination, of the drawer locking bolt I^1, lever I^3, rod I^4, and the revoluble shaft E, having fast upon it the cam I^6, co-operating with the rod I^4. 15th. In a registering machine, the combination, of the main actuator, an indicator driven thereby, a driving mechanism for the actuator capable of connection therewith and disconnection therefrom, a series of keys whose relative positions determine the different points at which the actuator shall be disconnected from the driving mechanism, each of said keys being provided with a detaining notch or shoulder, a detent plate co-operating with the series of keys, and a lock for the driving mechanism released by the detent plate only when the detaining notch or shoulder of an operated key has been engaged with its co-operating dent on said plate. 16th. In a registering machine, the combination of a primary wheel provided with a cam L^5, the sliding bar L^7, provided with lugs L^6 and L^{10}, and carrying the pawl L^8, engaging the ratchet L^4 of the secondary wheel, and the revoluble cam L^9, co-operating with the lug L^{10}, substantially as described. 17th. In a registering machine, the combination of a primary wheel provided with a cam L^5, a revoluble shaft E provided with a cam L^9, a sliding pawl L^7 provided with a lug L^6, co-operating with cam L^5 and a lug L^{10}, co-operating with cam L^9, and carrying a pawl L^8, engaging the ratchet L^4 of the secondary wheel and a spring L^{11}, engaging the bar L^7 to yieldingly hold it in the positions to which it is moved by the cam L^5 and L^9, substantially as described. 18th. In a registering machine, the combination of the type wheels and the printer co-operating therewith, of the ribbon spools actuated by the movements of the printer, and means for automatically reversing the direction of movement of said spools, for the purpose described. 19th. In a registering machine, the combination with the type wheels and the printer co-operating therewith, of the spools carrying the inking ribbon, each provided with a ratchet, an actuating pawl for each ratchet, and means for automatically disengaging one pawl from its ratchet, and engaging the other pawl with its ratchet, to reverse the direction of movement of the inking ribbon, substantially as described. 20th. In a registering machine, the combination with the type wheels and the printer co-operating therewith, of the spools carrying the inking ribbon each provided with a ratchet, an actuating pawl for each ratchet carried by the printer, and the longitudinally movable threaded shafts, upon which the spools are mounted, provided with arms arranged to disengage the pawl from the ratchet, substantially as described. 21st. In a registering machine, the combination with the type wheels and the printer co-operating therewith, of the spools carrying the inking ribbon, each provided with a ratchet, an actuating pawl for each ratchet and the longitudinally movable threaded shafts upon which the spools are mounted, said shafts being free to slide through the spools but revolving with the spools, and provided with arms to disengage the pawls from the ratchets, substantially as described.

No. 41,816. Car Coupler. (*Attelage de chars.*)

Thaddeus B. Brower and Freeman W. White, both of Paso Robles, California, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In a car coupling, the combination of a draw head having an opening, a coupling pin, a pin lifter pivotally mounted and having its front end attached to the coupling pin, means for raising the pin lifter, a catch to hold the pin lifter elevated, and a link carrier having an inclined surface to engage and to direct the link and provided with a lug arranged to engage the catch to release a coupling pin, substantially as described. 2nd. In a car coupling, the combination of a draw head, a coupling pin, a pivotally mounted pin lifter connected with the coupling pin and provided with a shoulder, a catch consisting of a rock shaft provided with an arm to engage the shoulder and having a depending extension, and a link carrier having an inclined face to direct a link and provided with a laterally extending lug to engage the depending extension of the catch, substantially as described.

No. 41,817. Machine for Sawing Stave Bolts.

(*Machine pour scier les chevilles des douves.*)

Robert Aldred and Robert H. Tunks, both of Glencoe, Ontario, Canada, 4th February, 1893; 6 years.

Claim.—1st. The adjustable sash or saw frame H, in combination with the saw K, and saw mandrel F, substantially as and for the purpose specified. 2nd. In a stave bolt sawing machine, the grooved standards B, B, and pulley G, G, and weights C, C, and dogs I, I, substantially as and for the purpose specified.

No. 41,818. Apparatus for Treating Refuse.

(*Appareil de traitement des rebuts.*)

Richard Cunliffe and Edward Barlow, both of Manchester, Lancaster, England, 4th February, 1893; 6 years.

Claim.—1st. The continuous and automatic process of drying or calcining substances or materials of the nature described, consisting in extracting the liquid portion thereof or reducing the same previous to being subjected to heat, discharging the treated substance or material whilst the hot gases are withdrawn, condensing and the more volatile portion thereof burnt, substantially as set forth. 2nd. In apparatus for drying or calcining substances or materials of the nature described, the cylinder or retort *h*, arranged to rotate on pulleys h^2, inside a covering *g*, in combination with a hollow knife edged feed screw *k*, arranged to rotate inside a casing k^1, formed with a hopper *f*, the inner end of which feed screw *k*, is in communication with the inlet end of the cylinder or retort *h*, and the outer end by means of a pipe l^2, and chimney l^4, with the space l^5, between the exterior of the cylinder or retort *h*, and the interior of the covering *g*, substantially as and for the purpose specified. 3rd. The cylinder or retort *h*, specified in the preceding claim, in combination with a discharge and condensing chamber *p*, arranged in communication with the outlet end of the cylinder or retort *h*, and an exhaust fan *s*, or steam jet and cone *t*, t^1, the discharge portion of the chamber *p*, being furnished with a weighted door p^3, and the condensing part

with a partition p^5, having an opening p^6, in connection with a steam or water jet q, q^1, or both, substantially as set forth. 4th. The stationary furnace n, formed with doors n^1, and n^2, adapted either for liquid or solid fuel or gas, in combination with slides h^4, employed between the furnace n, and the cylinder or retort h, substantially as and for the purpose specified.

No. 41,819. Mower. (*Faucheuse.*)

Francis N. Violet, Milwaukee, and Charles H. Shaw, Wauwatosa, all in Wisconsin, U.S.A., 4th February, 1893; 6 years.

Claim.—1st. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle, and a triangular lever carried at one corner by a ball bearing on the frame in line with the crank shaft and connected at the outer corners with the crank and with the scythe, substantially as and for the purposes set forth. 2nd. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle, a triangular lever carried at one corner by a ball bearing on the frame in line with said crank shaft and connected at the other corners with the crank and with the scythe, and a rod having a ball and socket connection at its upper end with the frame and hinged at its lower end to said triangular lever in front of its ball bearing, substantially as and for the purposes set forth. 3rd. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parellel with said axle and connected by suitable mechanism with the scythe, and speed multiplying spur gears connecting said crank shaft with the axle on which said supporting wheels are mounted, substantially as and for the purposes set forth. 4th. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a crank shaft parallel with said axle and provided with a sprocket wheel a driving sprocket wheel connected with the sprocket wheel on the crank shaft by a chain belt, and spur gears connecting the driving sprocket with said axle, substantially as and for the purposes set forth. 5th. In a mowing machine, the combination with the inside shoe and the main frame provided with a vertical plate placed parallel with the line of travel of the machine, of a plate to which the shoe is hinged on a horizontal axis parallel with the travel of the machine, pivoted to the front end of the plate on said frame so as to be capable of vertical movement at its rear end, whereby a long bearing is afforded for the shoe carrying plate and the finger bar is rigidly supported, substantially as and for the purposes set forth. 6th. In a mowing machine, the combination with the main frame provided with a vertical bearing plate, set parallel with the line of travel of the machine, a shoe carrying plate pivoted to the front part of the plate on said frame and having a hooked projection embracing the rear edge of said plate, and a lever connected with the rear end of the shoe carrying plate, whereby the finger bar is turned as desired on a longitudinal axis, substantially as and for the purposes set forth. 7th. In a mowing machine, the combination with the main frame provided with a vertical bearing plate parallel with the direction of travel of the machine, a shoe supporting plate pivoted thereto at or near its front end, and a lever connected by a link with the rear end of the shoe carrying plate, said link having a vertically self adjusting connection with one of the parts named, whereby the oscillating of the finger bar to conform to variations in the surface of the ground is permitted, substantially as and for the purposes set forth. 8th. In a mowing machine, the combination with the axle, supporting wheels and main frame having a sleeve at one side which is mounted upon said axle, a crank shaft parallel with the axle, a triangular lever supported at one corner on a ball bearing on said frame in line with said crank shaft, and connected at the other corners with the crank and with the scythe, a suspending rod hinged to said lever, and having a ball and socket connection at its upper end with a suitable support on said frame, and speed multiplying spur gears by which the crank shaft is driven from the axle, substantially as and for the purposes set forth. 9th. In a mowing machine, the combination with the main frame, axle, supporting wheels and cutting apparatus, of a driving gear loosely mounted upon said axle, a clutch by which said gear is engaged and disengaged with said axle, a fork engaging with the sliding member of the clutch, and having a laterally projecting arm which passes loosely through an opening in the gear case or other part of the frame, a spring interposed between said fork and a relatively fixed part of the machine, and tending to hold the clutch members in engagement, and a lever engaging with the lateral arm of said fork, substantially as and for the purposes set forth. 10th. In a mowing machine; the combination with the main frame, supporting wheels and axle upon which they are mounted, of a crank shaft parallel with said axle and provided with a sprocket wheel, a spur driving gear mounted upon said axle, a pinion with which said driving gear engages, and a driving sprocket wheel concentric with said pinion, and connected by a chain belt with the sprocket wheel on the crank shaft, a clutch for engaging and disengaging the driving gear with the axle on which it is mounted, a triangular lever connected at diagonally opposite corners with the crank and with the scythe, and carried at the other corner by a ball bearing on said frame, substantially as and for the purposes set forth. 11th. In a mowing machine, the combination with the frame, of an angular lever connected at diagonally opposite corners with the scythe actuating crank and with the scythe, and at the intermediate corner with the frame, and a vibrating rod by which the forward portion of said lever is suspended from the frame, substantially as and for the purposes set forth. 12th. In a mowing machine, the combination with the main frame, axle and supporting wheels, of a scythe actuating crank on a shaft parallel with the axle, and an angular lever connected at diagonally opposite corners with said crank and with the scythe, and at the intermediate corner by a universal joint with the frame in line with the crank shaft, substantially as and for the purposes set forth.

No. 41,820. Axle Box. (*Boîte à graisse.*)

William Scott Morden, Montague, Michigan, U.S.A., 4th February, 1893; 6 years.

Claim.—The herein described axle box, the same comprising an interiorly screw threaded hub, inner and outer cups screwed into the opposite ends of said hub, the axle passing through the inner end of the inner socket, and a ball upon the end of said axle fitting within the cavity between said cups, as set forth. 2nd. In an axle box, the combination with the interiorly screw threaded hub H, the outer cup O, screwed into the outer end of said hub, and the inner cup I, screwed into the inner end thereof, with a washer W, between the meeting ends of said cups, the inner end of the inner cup having an opening, of the axle A, passing loosely through said opening, a dust guard upon said axle around said opening, and a ball B, rigidly secured to the end of said axle and fitting within the cavity between the cups, as set forth. 3rd. In an axle box, the combination, with the interiorly threaded hub H, and the cup I, screwed therein and having an opening in its inner end surrounded by a grooved flange F, of the axle A, passing loosely through said opening, a ball B, upon said axle upon which ball the cup turns, and a clamp C, clipped to said axle and having a flange *f*, engaging said grooved flange F, substantially as hereinbefore described.

No. 41,821. Carving Machine. (*Machine à sculpter.*)

Thomas L. Smith, Milwaukee, and Paul W. Post, West Superior, all in Wisconsin, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a carving machine, the combination of a rigid vibratory frame suspended on suitable bearings, an oscillatory yoke supported in said suspended frame by bearings in a line parallel with the bearings of said frame, vibratory arms hinged in said yoke on axes transverse to its axis of oscillation, and guiding and cutting tools connected with said vibratory arms, substantially as and for the purposes set forth. 2nd. In a carving machine, the combination of a tool carriage revoluble upon its axis, a guiding and a cutting tool connected therewith, and guiding mechanism connected with said tool carriage, substantially as and for the purpose set forth. 3rd. In a carving machine, the combination of a tool carriage capable of oscillation upon its axis, tool holders having a jointed connection with said carriage, a guiding and a cutting tool adapted to said holders, and guiding mechanism connected with said carriage, substantially as and for the purposes set forth. 4th. In a carving machine, the combination, with a supporting frame and work table, of a rod connected at its ends with said frame by jointed guiding mechanism, a sleeve supported and capable of oscillation upon said rod, tool holders pivotally connected with said sleeve, and a guiding and a cutting tool carried by said tool holders, substantially as and for the purposes set forth. 5th. In a carving machine, the combination, with a suitable supporting frame, of a tool carriage composed of a shaft, and a sleeve capable of oscillation thereon, jointed guiding mechanism having jointed connections with the ends of said carriage shaft and with said frame, screw threaded boxes pivotally attached to said sleeve, screw threaded tool holders adjustable axially in said boxes, and guiding and cutting tools adapted to said tool holders, substantially as and for the purposes set forth. 6th. In a carving machine, the combination, with a suitable supporting frame, of a frame suspended by suitable bearings thereon, an oscillating yoke supported in said suspended frame on suitable bearings, vibratory arms supported by and having jointed connections with said oscillating yoke, a shaft parallel with the axis of said yoke and hinged to the free ends of said vibratory arms, tool holders mounted upon said shaft, and a guiding and a cutting tool adapted to said tool holders, substantially as and for the purposes set forth. 7th. In a carving machine, the combination, with two or more cutting tools, of a guiding tool connected therewith so as to control the movements of said cutting tools, guiding mechanism connecting said tools with a suitable fixed support so as to permit them to be moved in any direction and at the same time to maintain them in the same relative position to each other and to the pattern and work, and driving mechanism arranged to rotate said cutting tools in opposite directions, whereby the tendency of each cutting tool to crawl over the work and to move away from a given position is balanced by the other tool tending in the opposite direction, substantially as and for the purposes set forth. 8th. In a carving machine, the combination, with a rigid vibratory frame hinged in a horizontal line at one side to a suitable support, of a jointed parallelogram having a jointed connection with said vibratory frame in a line parallel with the axis on which said frame swings, and a guiding and a cutting tool connected with the free side of said jointed parallelogram, substantially as and for the purposes set forth. 9th. In a carving machine, the combination, with a suitable supporting frame, of a vibratory frame suspended therefrom by one side, a jointed parallelogram hinged at on side to said

vibratory frame in a horizontal line parallel with that on which said frame swings, a tool carriage connected with the opposite free side of said parallelogram, and a guiding and a cutting tool supported by said carriage, substantially as and for the purposes set forth. 10th. In a carving machine, the combination, with a rigid vibratory frame, of a jointed parallelogram having a jointed connection therewith in a line parallel with that on which said frame swings, an oscillatory tool carriage mounted upon the free side of said parallelogram, and a guiding and a cutting tool connected with said carriage, substantially as and for the purposes set forth. 11th. In a carving machine, the combination, with a rigid vibratory frame hinged in a horizontal line to a fixed support, of a jointed parallelogram having a jointed connection therewith in a parallel line, an oscillatory tool carriage mounted upon the free side of said parallelogram, and connected guiding and cutting tools having jointed connections with said carriage, substantially as and for the purposes set forth. 12th. In a carving machine, the combination, with a rigid swinging frame having a jointed connection with a suitable fixed support, of vibratory arms having a universal joint connection with said swinging frame, a tool carriage hinged to the free end of said vibratory arms, and a guiding and a cutting tool, substantially as and for the purposes set forth. 13th. In a carving machine, the combination, with a universally movable tool carriage provided with a guiding and two or more cutting tools, of a pulley yoke capable of oscillation on a horizontal axis and provided with a weighted arm, two or more vertical pulley shafts journalled in said yoke, and forked arms hinged at their forked ends to said pulley yoke concentrically with said pulley shafts and provided at their free ends with sheaves which are connected with said cutting tools, substantially as and for the purposes set forth. 14th. In a carving machine, the combination, of a rigid frame capable of oscillation on a horizontal axis, a tool carriage provided with a guiding and one or more cutting tools, and vibratory arms having jointed connections at opposite ends with said oscillatory frame and with said carriage, substantially as and for the purposes set forth. 15th. In a carving machine, the combination, of a rigid frame capable of oscillation on a horizontal axis, vibratory arms having jointed connections with said frame, a tool carriage having jointed connections with the opposite ends of said arms, a guiding and a cutting tool carried by said carriage, and driving mechanism connecting the cutting tool with a suitable source of power, so as to conform to the movement of said carriage, substantially as and for the purposes set forth. 16th. In a carving machine, the combination, with a rigid frame capable of oscillation on a fixed horizontal axis, of a tool carriage connected with said frame by vibratory arms, tool holders provided with a guiding and a cutting tool and having jointed connections with said carriage, and driving mechanisn connecting the cutting tool with a suitable source of power in such manner as to conform to the movement of said carriage, substantially as and for the purposes set forth. 17th. In a carving machine, the combination of a frame capable of oscillation on a horizontal axis, a yoke carried by said frame and capable of oscillation on an an axis parallel to that upon which said frame swings, a tool carriage connected with said yoke by vibratory arms which have jointed connections therewith, and a guiding and a cutting tool carried by said carriage, substantially as and for the purposes set forth.

No. 41,822. Ironing Board. (*Planche à repasser.*)

George N. Simmons, Santa Cruz, California, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. The combination, in an ironing table, with a wide support having cross bars, a pair of bars hinged to the upper cross bar, an arm hinged to the lower cross bar, and a board pivoted to the upper end of said support, of a narrow support to which the other ends of said bars are hinged, this support having transverse grooves, a pin in said arm moving in the grooves, the body of the arm passing between said bars and having a notch, and a staple in said bars adapted to be engaged by the notch when the pin in the arm is at the lower ends of said grooves, as and for the purpose set forth. 2nd. The combination, in an ironing table, with a wide support having cross bars, a pair of bars hinged to the upper cross bar, an arm hinged to the lower cross bar, and a board pivoted to the upper end of said support, of a narrow support to which the other ends of said bars are hinged, a pin through the arm moving in transverse grooves in this support, the body of the arm passing between said bars and having a notch, a staple on said bars adapted to be engaged by the notch when said pin is at the lower end of the grooves, and a spring catch carried by said narrow support and removably engaging the end of this arm at such time, as and for the purpose set forth. 3rd. The combination, in an ironing table, with the board, a wide support beneath one end thereof, a narrow support beneath the other end thereof and provided with a longitudinal slot and transverse grooves, bars connecting the supports, and an arm connected to the wide support and having a pin moving in said grooves as this end of the arm moves in said slots, of a catch comprising a base secured to the narrow support, a spring arm rivetted at one end of said base, a knob having a shank passing through said arm near its free end, and a catch face on the shank at the opposite side of the arm from the knob, said face engaging the arm which connects the supports when said arm stands at the lower end of the longitudinal slot, as and for the purpose set forth. 4th. The combination, in an ironing table, with a wide support having cross bars, a pair of bars hinged to the upper cross bar, an arm hinged to the lower cross bar, and a board hinged to the upper end of said support, of a narrow support to which the other ends of said bars are hinged, said support having a longitudinal slot and transverse grooves, in the former of which the other end of said arm moves, a pin through this arm moving in the grooves, the body of the arm passing between said bars and having a notch, and a staple in said bars adapted to be engaged by the notch when the pin in the arm is at the lower ends of said grooves, as and for the purpose set forth. 5th. The combination, in an ironing table, with a wide support having cross bars, a pair of bars hinged to the upper cross bar, an arm hinged to the lower cross bar, and a board pivoted to the upper end of said support, of a narrow support to which the other ends of said bars are hinged, said support having a longitudinal slot in which the other end of said arm moves, a pin through this arm moving in transverse grooves in the support, the body of the arm passing between said bars and having a notch, a staple on said bars adapted to be engaged by the notch when said pin is at the lower end of said grooves, and a spring catch carried by said narrow support and removably engaging the end of this arm at such time, as and for the purpose set forth. 6th. The combination, in an ironing table, with the board, a wide support beneath one end thereof, a narrow support beneath the other end thereof and provided with a longitudinal slot and transverse grooves, bars connecting the supports, an arm connected at one end to the wide support, having a notch in its body, and having its other end moving in said longitudinal slot, a staple which said notch engages when the supports are in use, and a pin through said arm loosely engaging said transverse grooves in the narrow support, of a catch comprising a sheet metal base secured to the outer face of the narrow support, an upwardly extending spring arm carried by said base, a knob having a shank passing through said arm, and a catch face on said shank engaging the free end of the arm which connects the supports when the said arm is at the lower end of the longitudinal slot, as and for the purpose hereinbefore set forth.

No. 41,823. Armatures for motors and Generators.

(*Armature pour moteurs et générateurs.*)

Norman C. Bassett, of Lynn, Mass., U.S.A., 6th February, 1893; 6 years.

Claim.—An ironclad armature having longitudinal holes or perforations near its periphery, or surface coils wound through and partly filling said holes, and wedge or wedges of insulating material driven into said holes, so as to compress the coils and bind them within the holes. 2nd. The combination of the armature core having longitudinal perforations near its periphery or surface, the coils wound in said perforations so as to leave a part thereof unoccupied, an insulating plate or follower placed against the coil, and a wedge driven into the perforation so as to take up the unoccupied space and bind the coil tightly in place. 3rd. The combination of an ironclad armature, having longitudinal perforations near its periphery or surface, insulating tubes within said perforations and projecting beyond the armature ends, end plates of insulating material supporting the inner sides of the projecting ends, and coils wound through said perforation and over said insulated end plates. 4th. The combination of the annular perforated armature core, the insulating tubes through and projecting from said perforation, the insulating end plates supporting the ends of such tubes, one or more insulating pieces on the inner side of the core, and armature coils wound over said insulated plates and pieces and through the perforations. 5th. The combination, with the annular armature core and the coil wound thereon, of the coil supporting end rings and the central raising piece or bridge projecting above the end rings and over which the coil is wound and tightened. 6th. The combination, with a laminated annular armature core, of end plates between which it is clamped, and the supporting spiders for said end plates, having shoulders or lugs overlapping one another, as described, for engaging and supporting the inner side of the armature core. 7th. The combination, with the annular laminated armature, of the clamping end plates therefor and the spiders supporting said end plates, having a hub and socket drive joint and faces brought into true or correspondent relation and projecting beyond the coils for engagement with a press table. 8th. The combination, with an armature core and a porcelain or equivalent insulating plate on which the wire is wound, of the cushion or bed sheet, substantially as described, interposed between the said insulating plate and the core. 9th. An iron clad armature having holes or perforations, coils wound through and partly filling said holes, and wedges driven into said holes so as to compress the coils and bind them therein. 10th. An ironclad armature having holes near its surface coils wound through and partly filling said holes, and wedges driven into said holes so as to bind the coils therein. 11th. An armature having an ironclad or continuous surface with holes near said surface, coils partly filling such holes, and insulating material tightly filling the space not occupied by the coils.

No. 41,824. Safety Ladder. (*Echelle de sûreté.*)

August Necker, Lippstadt, Prussia, 6th February, 1893; 6 years.

Claim.—A folding safety ladder, consisting of the hinged parts or links *a*, surrounded by an endless rope *l*, folded together into the smallest possible compass when at rest, and which when dropped from a position can only unfold until the parts form a straight line,

while the two upper parts or links can be bent further beyond a straight line to form an anchorage.

No. 41,825. Purification of Sewage.

(*Purification des égouts.*)

Hamor Lockwood, Manchester, England, 6th February, 1893; 6 years.

Claim.—1st. The employment in the purification of sewage or foul water, of a mixture of the ferrous solution with the impure milk of lime herein described, supplemented when necessary by the addition of sulphuric acid, substantially as described. 2nd. The employment in the purification of sewage or foul water, of a mixture of the ferrous solution herein described, with hydrated lime, supplemented when necessary by the addition of sulphuric acid, substantially as described. 3rd. In the purification of sewage or foul liquids by means of salts of iron and lime, the use of sulphuric acid to render the resulting fluid neutral or acid, substantially as herein described.

No. 41,826. Electric Railway. (*Chemin de fer électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In an electric railway, a supply conductor extending along the railway, a car to move along said railway, an electric motor to propel the car, an electric conductor on the car connected to the motor, an electric connection to conduct the current between the supply conductor and the car conductor, and suitable means on the car whereby the current for the motor may be induced by the current in the supply conductor. 2nd. In an electric railway, the combination, of a track, an exposed line working conductor extending along a portion of the track, an insulated line working conductor extending along another portion of the track, a source of alternating currents of electricity for the the insulated line conductor, a car to move upon said track, a circuit on the car, a terminal for said circuit to make contact with the exposed line conductor, a second circuit on the car adapted to be completed thereon, a portion of the latter circuit arranged in inductional relation to the insulated line conductor, and a motor on the car in both of the circuits thereon, and arranged to move the car. 3rd. In an electric railway, the combination of the track, an exposed line working conductor extending along a portion of the track, an insulated line conductor extending along another portion of the track, a source of irregular or alternating currents for both conductors, a car to move on said track, a circuit on the car, having a terminal to move in contact with the exposed conductor, means to form a complete circuit on the car, a portion of the complete circuit in inductional relation to the insulated line conductor, and a motor on the car in the circuit thereon, and arranged to propel the car. 4th. In an electric railway, a supply conductor extending along the railway, a car to move along said railway, an electric motor to propel the car, an electric conductor on the car connected to the motor, an electric connection to conduct the current between the supply conductor and the car conductor, and suitable means on the car whereby the current for the motor may be derived from the supply conductor by induction. 5th. In an electric railway, a supply conductor extending along the railway, having one or more portions of its length exposed and one or more portions insulated, a car to move along said railway, an electric motor to propel the car, an electric conductor on the car connected to the motor, an electric connection to conduct the current between the exposed portion or portions of the supply conductor and the car conductor, and suitable means whereby the current for the motor may be derived from the insulated portion or portions of the supply conductor by induction. 6th. In an electric railway, a supply conductor extending along the railway, having one or more portions of its length exposed and suspended above the ground, and one or more portions insulated and beneath the surface of the ground, a car to move along said railway, an electric motor to propel the car, an electric conductor on the car connected to the motor, an electric connection to conduct the current between the exposed portion or portions of the supply conductor and the car conductor, and suitable means whereby the current for the motor may be derived from the insulated portion or portions of the supply conductor by induction. 7th. In an electric railway, having a conduction system for one portion and an induction system for another portion, a source of high tension current for the induction system, and a transformer to reduce the tension of a portion of the said current to supply the conduction system. 8th. The combination of a car or vehicle movable along a given path, a series of stationary magnetic cores placed at intervals along a portion of said path, coils surrounding said cores and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path, a magnetic core carried by the car in inductional relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, an electric magnetic motor on the car for propelling the same and connected in circuit with the secondary conductor. 9th. The combination of a car or vehicle movable along a given path, a series of stationary magnetic cores placed at intervals along a portion of said path, coils surrounding said cores and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path and deriving current from the same source, a magnetic core carried by the car in inductional relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, and an electro magnetic motor on the car, and for propelling the same, and connected in circuit with the secondary conductor. 10th. The combination of a car or vehicle movable along a given path, a stationary magnetic core, extending along a portion of the path, a conductor to magnetize said core and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path, a magnetic core carried by the car in inductional relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, and an electro magnetic motor on the car, and for propelling the same, and connected in circuit with the secondary conductor. 11th. The combination of a car or vehicle movable along a given path, a stationary magnetic core extending along a portion of the path, a conductor to magnetize said core and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path, a current transformer between the said conductor connected with the source and the exposed line conductor, a magnetic core carried by the car in induction relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, and an electro-magnetic motor on the car and for propelling the same and connected in circuit with the secondary conductor. 12th. The combination of a car or vehicle movable along a given path, a stationary magnetic core extending along a portion of the path, a conductor to magnetize said core and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path, an inductional transformer having one of its coils in circuit with the conductor connected with the source, and the other coil in circuit with the exposed line conductor, a magnetic core carried by the car in inductional relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, and an electro-magnetic motor on the car and for propelling the same and connected in circuit with the secondary conductor. 13th. The combination of a car or vehicle movable along a given path, a series of stationary magnetic cores placed at intervals along a portion of said path, coils surrounding said cores and connected with a source of irregular or alternating currents, an exposed line working conductor extending along another portion of the said path, a magnetic core carried by the car in inductional relation to the stationary cores, a secondary conductor wound thereon, a movable contact connected to the secondary conductor to make contact with the exposed line conductor, a current rectifier in the conductor on the vehicle, and a direct current motor on the car and for propelling the same and connected in circuit with the secondary conductor. 14th. In an electric railway having a conduction system for one portion and an induction system for other portions of the railway, the combination of a source of high tension current for one of the portions equipped with the induction system, a transformer to reduce the tension of a portion of the said current to supply the conduction system, and a transformer to increase the tension of a portion of the current of the conduction system to supply another portion of the railway equipped with the induction system. 15th. In an electric railway having a conduction system for one portion and an induction system for another portion of the railway, a source of low tension current for the conduction system, and a current transformer to increase the tension of a portion of said current to supply the induction system. 16th. In an electric railway having a conduction system for one portion and an induction system for another portion, means for supplying the conduction system with a direct current and the induction system with an alternating current. 17th. In an electric railway, a supply conductor extending along the railway, having one or more portions of its length exposed and one or more portions insulated, means for supplying the exposed portion or portions of the supply conductor with a current of lower tension than the other portion or portions, a car to move along said railway, an electric motor to propel the car, an electric conductor on the car connected to the motor, an electric connection to conduct the current between the exposed portion or portions of the supply conductor and the car conductor, and suitable means whereby the current for the motor may be derived from the insulated portion or portions of the supply conductor by induction.

No. 41,827. Lawn Mower. (*Faucheuse de pelouse.*)

E. C. Stearns & Co., assignee of Edward Carl Stearns, William Henry Craig and Obadiah Seeley, all of Syracuse, New York, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a lawn mower, the combination, with the stationary knife, of the bed plate provided with cast bolt holes, and at the upper ends of said holes with cast flat sided recesses, screw bolts passing upwardly through the stationary knife and the holes of the bed plate, and screw nuts arranged in said recesses, and with which the screw bolts engage, substantially as set forth. 2nd. In a lawn mower, the combination, with the side frames and the rotary cutter, of the adjustable bed plate supported between the side frames, and

provided with a rearwardly projecting lug, and an adjusting screw passing through said lug and engaging in a threaded opening in the side frame, substantially as set forth. 3rd. In a lawn mower, the combination, with one of the side frames provided with an inwardly projecting ear, and the rotary cutter of the adjustable bed plate provided with a lug arranged above the ear of the side frame, and an adjusting screw passing through the lug of the bed plate, and engaging in a threaded opening in the ear of the side frame, substantially as set forth. 4th. In a lawn mower, the combination, with one of the side frames provided with an inwardly projecting ear, and the rotary cutter, of the adjustable bed plate provided with a lug arranged above the ear of the side frame, an adjusting screw passing through the lug of the bed plate, and engaging in a threaded opening in the ear of the side frame, and a clamping screw arranged in a threaded opening in the lug of the bed plate, and bearing against the ear of the side frame, substantially as set forth. 5th. In a lawn mower, the combination, with the side frames, of vertically adjustable arms or brackets attached to the side frames, and the bed rollers journalled in said arms or brackets, substantially as set forth. 6th. In a lawn mower, the combination, with the side frames, of vertically adjustable arms or brackets attached to the side frames by horizontal clamping bolts, and provided on their inner faces with teeth which interlock with corresponding teeth on the contiguous faces of the side frames, and a bed roller journalled in said adjustable arms, substantiallly as set forth. 7th. In a lawn mower, the combination, with the side frames provided with upright loops, and studs or projections arranged below said loops, of the handle provided with arms or braces passing through said loops, and having openings which engage over said studs or projections, substantially as set forth. 8th. In a lawn mower, the combination, with the side frames and a handle pivoted thereto, of a forwardly inclined stop arranged on one of the side frames, and which permits the handle to be swung forwardly beyond a vertical position, substantially as set forth. 9th. In a lawn mower, thecombination, with the side frames, each provided with a horizontal stud or projection, and an upright loop arranged above said stud and consisting of a curved bar located inwardly from the side frame and connected with the latter by end portions, the front end portion being provided with a forwardly inclined face forming a handle stop, and the handle having arms passing through said loops and provided with openings which engage over the studs of the side frame, substantially as set forth. 10th. The combination with the knife of the rotary cutter and its fastening screw, of a supporting arm formed in its side with a recess and with a screw threaded opening which opens into this recess, substantially as set forth. 11th. In a lawn mower, the combination with the handle and the cross piece at the upper end of the handle, of jaws secured to the handle and embracing the cross piece on the opposite sides, substantially as set forth. 12th. In a lawn mover, the combination with the handle provided in its upper end with a concave seat, of the cylindrical cross piece arranged in said seat, and jaws embracing the cross piece on opposite sides and secured to the handle by a clamping bolt passing through the handle and the shanks of the jaws, substantially as set forth. 13th. The combination with a shaft having an eccentric groove in its periphery, of a surrounding sleeve having internal teeth provided with abrupt front faces and inclined backs, and a ball arranged in the eccentric groove of the shaft, substantially as set forth. 14th. In a lawn mower, the combination with a ground wheel having an internal gear rim, of the cutter shaft having an eccentric groove, a pinion mounted loosely on the cutter shaft and provided with a sleeve or chamber having internal teeth with abrupt front faces and inclined backs, and a ball arranged in the groove of the cutter shaft, substantially as set forth. 15th. In a lawn mower, the combination with the ground wheels, of pinions meshing with said ground wheels provided with sleeves having internal teeth formed with abrupt faces and inclined backs, a cutter shaft having in its periphery eccentric grooves arranged out of line with each other, and balls arranged in said grooves, substantially as set forth.

No. 41,828. Preserving Timber.

(*Préservation du bois de construction.*)

James McKeon, Oakland, California, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. The herein described method of preserving timber which consists of subjecting it to a bath composed of sulphate of iron and water in the proportion of eight pounds of sulphate of iron to three gallons of water, then applying a coat of resinous and vitreous material composed of oil of resin five gallons, mixed with vitrified lead fifteen pounds, pulverized glass fifteen pounds, and marble dust twelve pounds, then applying a coat of paint composed of rubber in solution five gallons, coal tar twenty gallons, linseed oil three gallons, sugar of lead seven pounds, litharge twelve pounds, black oxide ten pounds, and drier ten pounds, then applying a pulverulent composition composed of pulverized clinkers and burnt iron dust mixed with iron filings and quartz or marble dust in or about the proportion of eight pounds of each, then applying a coating of bitumous substance composed of asphaltum seventy-five pounds, dissolved in boiling tar twenty-five gallons, and mixed with quartz dust twenty-five pounds, and sand twenty-five pounds, and to each five gallons of this composition is added five pounds of the exterior fibrous covering of the cocoanut, substantially as set forth.

No. 41,829. Mold for Casting Knitting Machine Cylinders. (*Moule pour la fonte des cylindres de machines à tricoter.*)

Josph Emory Gearhart, of Clearfield, Pennsylvania, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. An apparatus for the purpose described, comprising a hollow mold body having longitudinal ribs on its inner side, an annular shoulder outside of and at the lower ends of the ribs, an end plate for the lower end of the mold supported below the shoulder, having an annular flange outside of the shoulder to form a mold chamber and provided with notches, and gates between the said chamber and the central mold cavity, substantially as described. 2nd. In an apparatus for the purpose described, a hollow mold body having longitudinal ribs on its inner surface, a core within the mold, a removable end plate for the mold, having an annular flange provided with notches in its inner periphery, said flange arranged outside of and at some distance from the mold body, leaving an annular mold chamber, , and gates between this chamber and the mold cavity, the parts combined, substantially as specified. 3rd. In an apparatus for the purpose described, a hollow mold body having longitudinal ribs on its inner face, a core within the mold, a removable end plate having an annular flange provided with notches in its inner periphery, said flange arranged outside of and at some distance from the mold body, leaving an annular mold chamber, and gates between this chamber and the mold cavity, an arm extending over the mold body, a vertically moving device in the said arm, and a cap piece fitting in the mold, which the bolt engages for forcing out the cast cylinder, the parts combined, substantially as set forth. 4th. In an apparatus of the character described, a hollow mold body having an inwardly extending flange at one end, an annular external shoulder at its opposite end, longitudinal ribs on its inner surface, which extend from the said flange to the lower edge of the said shoulder, a removable end plate having an annular flange of a greater diameter than the diameter of the said external shoulder, which is provided with a notch on its inner periphery, said flanges arranged outside of and at some distance from the mold body, leaving an annular mold chamber, and gates between the chamber and the central mold cavity, the parts combined, substantially as specified. 5th. In an apparatus for the purpose described, a hollow mold body having an external annular shoulder at one end, longitudinal ribs on the inner surface of the said mold, and a removable end plate at the shouldered end of the said mold body, which is supported at a suitable distance from the end of the said shoulder, the said end plate having an annular flange of greater diameter than the said external shoulder to form an annular mold chamber, and which flange is provided with notches on its inner edge, the parts combined, substantially as described. 6th. In an apparatus of the character described, a mold having movable end plates, a base having standards in which the mold is journalled, and an arm pivoted to swing over the mold, carrying a vertically swinging device to force out the cast article, the parts combined, substantially as set forth. 7th. In an apparatus of the character described, a mold, a base having standards in which the mold is journalled, the base having a cut away portion under the mold, movable end plates for the mold, and a stop for preventing the mold from revolving, the parts combined, substantially as shown. 8th. In an apparatus of the character described, a hollow mold body, a core placed therein having a longitudinal opening, and removable end plates for the end body, having openings, the parts combined, substantially as shown.

No. 41,830. Phonogram Blank.

(*Blanc de phonogramme.*)

Thomas Alva Edison, Lewellyn Park, New Jersey, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. Phonogram blanks made of metallic soap, substantially as set forth. 2nd. Phonogram blanks made of lead soap, substantially set forth. 3rd. Phonogram blanks made of a mixture of oleate and stearate of lead, substantially as set forth.

No. 41,831. Phonograph. (*Phonographe.*)

Thomas Alva Edison, Lewellyn Park, New Jersey, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a phonograph, the combination, with a diaphragm, of a recording point carried thereby having a curved cutting edge, substantially as set forth. 2nd. In a phonograph, the combination, with a diaphragm, of a recording point carried thereby having a circular cutting edge, substantially as set forth. 3rd. In a phonograph, the combination, with a record surface, of a recording point having a curved cutting edge and entering said record surface in an oblique direction, substantially as set forth. 4th. In a phonograph, the combination of a cylindrical phonogram blank, a diaphragm, and a recording point carried by the diaphragm having a curved cutting edge, substantially as set forth. 5th. In a phonograph, a recording point having two or more cutting edges, in combination with a holder holding such point normally in a fixed position, and in which such position may be changed to bring such cutting edges successively into operating position, substantially as set forth. 6th. In a phonograph, a recording point having two or more arc shaped cutting edges, in combination with a holder holding said point normally in a fixed position, and in which the position of the point

may be changed to bring such edges successively into operating position, substantially as set forth. 7th. In a phonograph, a recording point having a circular edge, in combination with a holder holding such point normally in a fixed position, and in which the position of the point may be changed, substantially as set forth. 8th. In a phonograph, a recording point having two or more cutting edges, in combination with a holder in which the point may be turned to bring such cutting edges successively into operating position substantiantially as set forth. 9th. In a phonograph, the combination of a recording or reproducing point having a shank or extension, and a sleeve for holding the same, substantially as set forth. 10th. In a phonograph, the combination, with a holding sleeve, of a recording or reproducing point having a shank, and an enlarged portion meeting said sleeve when the shank is inserted therein, substantially as set forth. 11th. In a phonograph, a reproducing point whose bearing surface is the surface of a portion or a sphere, substantially as set forth. 12th. In a phonograph, a spherical reproducing point, substantially as set forth. 13th. A sound record consisting of circular indentations or depressions having rounded sides and corresponding to the sound waves, substantially as set forth. 14th. A sound record consisting of circular indentations or depressions having rounded sides and corresponding to the sound waves, in combination with a diaphragm and reproducing point whose bearing surface is the surface of a portion of a sphere, substantially as set forth. 15th. In a phonograph, a reproducing point pivoted so as to have a lateral movement, in combination with a weight bearing thereon, substantially as set forth. 16th. In a phonograph, a reproducing point having a bearing surface which is the surface of a portion of a sphere, and pivoted so as to have a lateral movement, in combination with a weight bearing thereon, substantially as set forth. 17th. In a phonograph, a reproducing point having a bearing surface which is the surface of a portion of a sphere, and pivoted so as to have a lateral movement, substantially as set forth. 18th. In a phonograph, a laterally rocking spherical reproducing point, in combination with a weight bearing thereon, substantially as set forth. 19th. A sound record, consisting of circular indentation or depressions corresponding to sound waves, in combination with a reproducing point whose bearing surface is the surface of a portion of a sphere, and which is pivoted so as to have a lateral movement, substantially as set forth. 20th. In a phonograph, the combination, of the reproducing point, the lever carrying the same and connected with the diaphragm, the hinged plate, and the hinge connection between said lever and said plate, substantially as set forth. 21st. In a phonograph, the combination, of the reproducing point, the lever carrying the same and connected with the diaphragm, and having a longitudinal slot, the hinged plate, the lugs on said plate, and the pin connecting said lugs and passing through said slot, substantially as set forth. 22nd. In a phonograph, the recording point having a cylindrical head provided with a cutting edge and a shank or extension, substantially as set forth. 23rd. In a phonograph, a recording point having a cylindrical head with its end hollowed to form a circular cutting edge, substantially as set forth. 24th. In a phonograph, a recording point having a cylindrical head with its end hollowed to form a circular cutting edge, and a shank or contracted extension, substantially as set forth. 25th. In a phonograph, a reproducing point having a head whose bearing surface is the portion of a surface of a sphere, and a shank or contracted extension, substantially as set forth. 26th. In a phonograph, a reproducing point having a spherical head and a contracted shank, substantially as set forth. 27th. In a phonograph, a reproducing point having a spherical head, a contracted shank, and a flange on said shank, substantially as set forth. 28th. In a phonograph, the combination, with a diaphragm, of a sleeve connected with said diaphragm so as to receive motion therefrom, and a recording or reproducing point removably or rigidly held in said sleeve, substantially as set forth. 29th. In a phonograph, the combination, of a diaphragm, a lever connected therewith, a sleeve carried by said lever, and a recording or reproducing point removably held in said sleeve, substantially as set forth. 30th. In a phonograph, the combination, of a diaphragm, a lever connected therewith, a sleeve crrried by said lever, and a recording or reproducing point having a head or a shank or contracted extension removably held in said sleeve, substantially as set forth. 31st. In a phonograph, a recording or reproducing point, in combination with a holding sleeve and a cement, such as will be softened by heat, holding said point in said sleeve, substantially as set forth. 32nd. In a phonograph, the combination, of a recording point having a curved cutting edge, and a reproducing point having a rounded bearing surface, substantially as set forth.

No. 41,832. Phonogram Blank.

(*Blanc de phonograme.*)

Thomas Alva Edison, Lewellyn Park, New Jersey, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. A phonogram blank composed of a cylindrical base of moulded material, having a tapering bore, and a recording surface of softer material, substantially as set forth. 2nd. A phonogram blank composed of a base of plaster of paris and a recording surface of softer material, substantially as set forth.

No. 41,833. Leather Loops for Harness.

(*Ganse de cuir pour harnais.*)

Friend Johnson Bringham, Oroville, California, U.S.A., 6th February, 1893; 6 years.

Claim.—The art of making leather loops, which consists in piercing a block of leather by a slit between and approximately parallel to two opposing surfaces of the block, and afterwards enlarging and shaping by pressure outwards the aperture so formed, substantially as described.

No. 41,834. Cyclometer. (*Cyclomètre.*)

Frank C. Weston, Bangor, Maine, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. The combination of a cyclometer attached to a fixed part of the frame of a bicyle or tricycle, an operating arm or device carried thereby in a position to be actuated by a moving part of the said bicycle or tricycle, and connected with the registering mechanism of the cyclometer, substantially as described. 2nd. In a bicycle or tricycle and in combination with the fixed frame thereof, a cyclometer attached to said frame with its reading face or dial uppermost, and having an actuating device forming a connection between the registering mechanism of the cyclometer and a moving part of the machine, substantially as described. 3rd. In a bicycle or tricycle, and in combination with the fixed frame thereof, a cyclometer adapted to be operated by a moving part of the machine and having a clamp by which it is adjustably secured to the fixed frame, substantially as described. 4th. In a bicycle or tricycle, and in combination with the fixed frame thereof, a cyclometer attached to said frame, and having an actuating device comprising an oscillating arm, arranged to project into the path of a projection attached to one of the wheels of the machine, and said operating projection procured to the wheel in a position to come into contact with or strike the arm during the rotation of the wheel, substantially as described. 5th. The combination of a cyclometer attached to a fixed part of the frame of a bicycle or tricycle, and having an actuating device extending into the path of rotation, of an operating projection, secured to one of the wheels of the machine, and said operating projection detachably secured to the wheel, as and for the purposes described. 6th. The combination of a cyclometer attached to a fixed part of the frame of a bicycle or tricycle, and operating devices carried thereby, adapted to be actuated by a projection upon one of the wheels of the machine, said projection and means for adjusting its position upon the wheel, as and for the purposes described. 7th. The combination in cyclometer for bicycles and so forth, of the registering train with the oscillating plate b^3, carrying the spring pawl b^2, arranged to engage the wheel b^6, of the registering train, as specified, and the spring m, and the actuating arm or lever e, as and for the purposes described.

No. 41,835. Belting or Power Transmitter.

(*Courroie ou transmetteur de la force.*)

Eldoras Todd, Clavering, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—A power transmitter, consisting of a metallic belt comprised of a multiple number of metallic sheets arranged one above the other, a series of slots formed in the lowermost and intermediate sheets, rivets passing through said slots, each of said rivets having an enlarged head to enter a countersunk hole in the lowermost sheet, the opposite end of the said rivet secured to the uppermost sheet, the opposite meeting ends of each sheet fastened together to form a continuous belt, substantially as described.

No. 41,836. Builders' Level. (*Niveau de charpentier.*)

William Nisbett, Toronto, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—A disc journalled in a block with a flat surface, the said disc having a pointer or pointers projecting from its periphery, one side of which being weighted so that the pointer or pointers shall be held in a vertical position, substantially as and for the purpose specified.

No. 41,837. Apparatus for Applying Insecticide.

(*Appareil pour l'application des poudres insecticides.*)

Mary Augusta Hawley, Dixon, Illinois, U.S.A., 6th February, 1893; 6 years.

Claim.—The automatic powder sifting device hereinbefore described, consisting of a powder receptacle having a perforated bottom, a reciprocating agitator therein, a pivoted striker for engaging one end of the agitator rod, means for operating the rod in a reverse direction, a treadle and a connecting means between the treadle and striker, all combined substantially as shown and described.

No. 41,838. Protector for Trees.

(*Protecteur pour arbres.*)

Michael Bartholomew Ryan and Pleasant Ward, St. Louis, Missouri, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a tree protector, the combination, with a split band, of a strip secured to one of the ends thereof, and ears formed

on said strip adapted to be folded over the overlapping contiguous end of the split band, substantially as and for the purpose described. 2nd. In a tree protector, the combination with a split band provided with a circumferential groove in its upper edge, a packing secured in said groove, a metallic strip folded over and secured to one end of the band, and ears formed on said strip adapted to fold over and bind the other overlapping contiguous end of the split band, substantially as and for the purpose described.

No. 41,839. Manufacture of Barbed Wire.

(*Fabrication du fil de fer barbelé.*)

John Drennan Curtis, Worcester, Massaschusetts, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In the manufacture of barbed wire of the class described, the method of forming and applying the barbs, which consists in wrapping or coiling the free end of a continuous barb wire around a fence strand after two of the barb points or prongs have been cut and formed on said wire and before the complete severance of the barb from the main wire, and then severing the barb from the wire to form the last barb point or prong, substantially as set forth. 3nd. In the manufacture of barbed wire of the class described, the method of forming and applying the barbs, which consists in first, partly severing the barb from the main wire to form some of the barb points or prongs; second, wrapping or coiling the free end of the partly severed barb around one of the fence strands; and third, completely severing the barb from the main wire to form the last barb point or prong, substantially as set forth. 3rd. In machinery for making barbed wire of the class described, the combination with fence strand feeding mechanism, and barb wire feeding mechanism, of mechanism for cutting the barb from the body of the wire and forming barb points or prongs thereon, and a coiling spindle arranged and timed in its movement relatively to the cutting mechanism so as to coil the central portion or body of the barb around one of the fence strands, after the barb has been partly severed from the main wire in the operation of forming some of the prongs or points, and before the cutting mechanism operates to completely sever the barb from the wire to form the last barb point or prong, substantially as set forth. 4th. In machinery for making barbed wire of the class described, the combination of fence strand feeding mechanism, barb wire feeding mechanism, a series of cutters by which the successive cuts needed to form the points or prongs and sever the barb from the wire are made, and a coiling spindle which operates to coil the body or central portion of the barb around one of the fence stands after the cutters preceding the last one have done their work and before the last cutter has severed the barb from the main barb wire, substantially as set forth.

No. 41,840. Meter for Water. (*Compteur à eau.*)

John Thomson, Brooklyn, New York, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. The main castings forming the disc chamber, frustums mounted in said disc chamber, a disc supported in said frustums, a chamber below the lower frustum, and a vertical inlet between the channel and disc chamber, substantially as described. 2nd. The main casings forming the spherical contour of the disc chamber, the casings being divided on a medium line of the chamber, the lower casing being provided with the inlet and outlet channels and the chamber below the frustum, the upper casing being provided with a vertical inlet, the frustums supported in the casings, and the disc supported in the frustums, substantially as described. 3rd. The combination, of the main casing forming the spherical contour of the disc chamber, the concentric flanges to the casings, a recess in one or both of said flanges, the inner and outer face bearing surfaces, and the gum rubber gasket,, the gasket having a cross section substantially equal to the cross section of the recess, but normally of less breadth than the recess, substantially as described. 4th. The combination, of the main casings forming the disc chamber, the frustums mounted in the disc chamber, and disc supported therein, the chamber below the lower frustum, the vertical inlet and the curved section connecting the inlet and the chamber, the construction and arrangement being such that the discharge from the curved section into the vertical inlet is outside of the sweep of the disc, substantially as described. 5th. The combination, of the main casings forming the disc chamber, the frustums and disc mounted therein, the vertical inlet, and the horizontal chamber in the lower casing whereby the movement of the water through the horizontal chamber is in a direction substantially opposite to its delivery into the disc chamber, substantially as described. 6th. The combination, of the main casings forming the spherical contour of the disc chamber, of the detachable frustums, cylindrical bearings and stop shoulders formed in the disc chamber supporting the frustums, whereby the frustums are adapted to be applied from the interior of the disc chamber, substantially as described. 7th. The combination with the disc and diaphragm, of the separate controlling abutment, substantially as described. 8th. The combination with the disk, of the diaphragm, and a notch in the disc opposite to the diaphragm, and a separate controlling abutment co-operating with said notch, substantially as described. 9th. The disc ball having openings and a central partition, substantially as described. 10th. The disc having grooves in its surface, substantially as described. 11th. The ball having grooves in its surface, substantially as described. 12th. The combination of the free controlling block, and its cylindrical journal bearing, with the disc spindle, disc and frustums, the block being free to adapt itself vertically to the position of the spindle, substantially as described. 13th. The combination of the free controlling block, and its cylindrical journal bearing, with the disc spindle, disc and frustums, the block being free either to revolve with the spindle by frictional contact or to remain stationary, substantially as described. 14th. The combination of the intermediate gear and the hubs formed thereon, the differential gears having annular grooves and the piston, substantially as set forth. 15th. The combination of the free differential gear connected to the stuffing box spindle, the fixed differential gear directly secured to the casing, the annular grooves in the differential gears, the intermediate gear freely mounted in the grooves and the pinion, substantially as described. 16th. The dial pointers, having one edge straight and the other edge curved, the said pointer not reaching out to the numerals, substantially as specified. 17th. The combination, with the dial, of pointers having one edge straight terminating in points and the other edge curved, the extremity not reaching out to the numerals, substantially as specified. 18th. A valve device having piston sections and a valve adapted to reciprocate in a valve casing having chambers, one an end chamber connected to the main inlet chamber, another and intermediate chamber connected to a separate controlling chamber which receives the discharge from the measuring mechanism, and a final chamber communicating with the main outlet chamber, the piston in the first chamber being of less area than that in the intermediate chamber, the valve being actuated by the pistons to open and close the communication with the outlet chamber, substantially as described. 19th. The combination of a positive pressure piston acting in a chamber connected to the main inlet chamber, a controlling chamber, a negative piston, of greater area than the positive piston, acting in a chamber connected to the controlling chamber, and a valve acting in a chamber connected to the main outlet chamber, the said valve controlling the communication with the outlet chamber, substantially as described. 20th. A differential piston having one end exposed to the pressure of the main inlet chamber, and its other end arranged to receive pressure from a controlling chamber receiving the discharge from the measuring mechanism, the area of the piston which receives pressure from the controlling chamber being greater than that of the end exposed to the main inlet chamber, and a valve acting in the outlet chamber to vary the proportional area of the discharging ports according to the variations of pressure in the several said chambers, substantially as described. 21st. The combination, in a meter, of a series of chambers and pistons moving therein, and a controlling chamber receiving a limited portion of the fluid, one piston receiving the pressure of the inlet chamber, another piston receiving the pressure from the controlling chamber, and a valve controlling the entire discharge to the outlet, substantially as described. 22nd. The combination, with the measuring mechanism, main casing, differential piston valve and valve casing, of the main inlet chamber, the controlling chamber and the main outlet chamber, the arrangement and construction being such that the main inlet chamber is connected to the measuring mechanism and to the lesser piston area, the controlling chamber being connected to the greater piston area to the outlet from the measuring mechanism and a valve port in the valve casing, while the main outlet chamber is connected by a series of ports, controlled by a valve to the main inlet chamber and to the controlling chamber, substantially as described. 23rd. The combination, with the main inlet chamber, the inlet and outlet channels of the measuring mechanism, the controlling chamber and the valve casing chambers, of the valve device provided with a differential piston, one end connected to the main inlet chamber, the other end the section of greater area connected to the controlling chamber, and the valve acting in a ported cylinder, substantially as described. 24th. A valve device, having a differential piston and a valve, each operating in separate chambers, when both the measured and the inferred volumes pass through but one of the chambers, substantially as described. 25th. A valve device, having a differential piston and a valve, each operating in separate chambers, one of said chambers receiving and displacing from and to the main inlet chamber, another of said chambers receiving and displacing from and to the controlling chamber, while the third chamber receives from both the main inlet chamber and the controlling chamber, but delivers into the main outlet chamber, substantially as described. 26th. The combination of the negative piston 23, valve casing chambers J, H, and the main outlet chamber F, with a connecting channel, as 28, between chambers J and F, for the purpose of making the pressure within the said chamber J, negative to chamber H, substantially as described. 27th. The combination, with the differential pistons, valve casing, main inlet chamber and controlling chamber, of the valve directly connected to the differential pistons and actuated thereby to vary the area of the discharging ports, substantially as described. 28th. The combination, with the valve, valve casing, main inlet chamber and controlling chamber, of the series of valve ports disposed radially in a single transverse plane of the valve casing, substantially as described. 29th. The valve and valve casing, having a series of valve ports disposed radially in a single transverse plane of the casing, the disposal and construction being such that the entire flow of both the measured and the inferred volumes is delivered through the said valve ports from outside to inside of the valve casing, substantially as described. 30th. The combination of the spring with the differential piston, the valve and the valve casing,

the disposal being such that the spring co-acts with the pressure from the main inlet chamber to force the valve forward towards the main outlet chamber, substantially as described. 31st. The combination, with the differential piston and the valve casing, of the openings, as 19, for connecting the pressure of the main inlet chamber to the positive piston of the valve device, substantially as described. 32nd. The combination, with the measuring mechanism and the main casing, of the valve device and the valve casing when mounted in a cylindrical bearing formed in the axis of the main casing, substantially as described. 33rd. The combination with the valve casing and valve therein, of a series of ports, radially disposed in a single transverse section of the casing, the number of the said ports corresponding to the proportional ratio of the meter, substantially as described. 34th. The combination with the valve casing and valve therein, of a series of ports radially disposed in a single transverse section of the casing, each of said ports being of circular contour, substantially as described. 35th. A main inlet chamber, a controlling chamber, a valve controlling a series of ports communicating with the inlet and the controlling chambers, and arranged to direct the total flow in streams of uniform character, substantially as described. 36th. A main inlet chamber, a controlling chamber, a valve, and a series of ports communinicating with the inlet and the controlling chambers, and arranged to direct the total flow in equal streams converging towards the centre of the flow, substantially as described. 37th. A meter provided with a passage for the main stream and a passage for the measured stream, and means for throttling the main stream to equalize the resistance to the flow of the streams, substantially as described.

No. 41,841. Brick Machine. (*Machine à brique.*)

John Quincy Adams, Birmingham, Missouri, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a brick machine, the combination of the upper and lower dies, compound double toggle for operating the upper dies, bars for operating one side of said toggle, substantially as and for the purpose set forth. 2nd. In a brick machine, the combination of an upper and lower die, double toggles secured to the upper die bars, pivoted to said toggles, levers 23, 24, one of said levers pivoted to said toggles, and means for connecting said lever with a power mechanism, substantially as described and for the purpose set forth. 3rd. In a brick machine, the combination of upper and lower dies, double toggles 26, bars 34, having one of their ends pivoted to a portion of said toggles and their opposite ends pivoted to a sliding bar, the lever 23, having one of its ends pivoted to said toggles, and its opposite end pivoted to an operating device, lever 24, having one of its ends pivoted to said operating device and its opposite end pivoted to the sliding bar to which the bars 34, are pivoted, substantially as described and for the purpose set forth. 4th. In a brick machine, the combination of an upper and a lower die, double toggles 26, bars 34, levers 23, 24, connecting said toggle with a sliding support, a sliding support, rod 20, pivoted to the levers 23, 24, at one of its ends, and a crank shaft, in which the opposite end of said rod is journalled, substantially as described and for the purpose set forth. 5th. In a brick machine, the combination of upper and lower dies, toggles 26, bars 34, levers 23, 24, for operating said toggles, a shaft 53, at the upper end of said toggles, working in a slot 55, in the frame shaft 39, for supporting the lower dies, and rods 52, having a lower slotted end in which the shaft 39, operates, substantially as set forth. 6th. In a brick machine, the combination of upper and lower dies, a toggle for raising and lowering the upper die, a double sector having one of its sections connected with the shaft 39, the opposite section secured to the shaft 41, teeth on said sector, and means for rocking said sectors, substantially as and for the purpose set forth. 7th. In a brick machine, the combination of an upper die operated by a double toggle, a lower die operated by a double sector, arms connecting said sector with a cam, and a roller on one of said arms, with which the cam engages, substantially as and for the purpose set forth. 8th In a brick machine, the combination of upper and lower dies, the upper dies being worked by combined toggles, and the lower dies operated by a cam having a surface of variable pitch, said cam being connected by arms with a toothed sector for raising and lowering the lower dies, substantially as and for the purpose set forth.

No. 41,842. Machine for Sharpening Razors, Scissors, etc. (*Appareil pour aiguiser les rasoirs, les ciseaux, etc.*)

Charles Anthony Worden, Omaha, Nebraska, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In a machine for sharpening razors, the combination with a device for holding the razor, of two buttons of suitable abrading material, revolving at an angle to the axis of the blade of the razor, and travelling along opposite sides of said razor, and a device for revolving said buttons. 2nd. In a machine for sharpening razors, the combination, with a device for holding the razor, of buttons of suitable abrading material arranged at either side of said razor, revolving at an angle to the axis of the blade of the razor, means for adjusting the pressure of said buttons on said razor, a carriage mounted over said razor and adapted to carry said buttons along the sides thereof, and a device for revolving said buttons mounted upon said carriage, substantially as described. 3rd. In a machine for sharpening razors, the combination with a base plate, of a holder for the razor mounted therein, a frame mounted on said base plate, a carriage adapted to move forwards and backwards on said frame, revolving buttons of suitable abrading material mounted on said carriage and adapted to bear against the sides of said razor, and means of revolving said buttons, substantially as described. 4th. In a machine for sharpening razors, the combination, with a base plate, of a holder for the razor mounted therein, a frame approximately parallel to the edge of the razor mounted on said base plate, a carriage mounted on said frame and adapted to move forwards and backwards thereon, spindles placed in journals carried by said carriage, buttons of suitable abrading material mounted on said spindles, and springs normally pressing said buttons against the sides of said razor, as and for the purposes described. 5th. In a machine for sharpening razors, the combination, with a base plate of a holder for the razor mounted therein, a frame having tracks approximately parallel to the edge of the razor mounted on said base plate, a carriage mounted on said tracks and adapted to move forwards and backwards thereon, spindles placed in journals carried by said carriage, buttons of suitable abrading material mounted on said spindles, and springs normally pressing said buttons against the sides of the said razor, as and for the purposes described. 6th. In a machine for sharpening razors, the combination, with a base plate of a holder for the razor mounted therein, a frame having tracks and guide grooves approximately parallel to the edge of the razor mounted on said base plate, a carriage adapted to move forwards and backwards on said tracks, and having guide lugs adapted to engage in said grooves, spindles placed in journals carried by said carriage, buttons of suitable abrading material mounted on said spindles, and springs normally pressing said buttons against the sides of said razor, substantially as and for the purposes described. 7th. In a machine of the character described, a clamp for the razor, consisting of two jaws lined with rubber, felt or other soft and elastic material, the said jaws being pivoted in the said base plate, and the one jaw having a cam face, and the second jaw a lever arm adapted to engage said cam face, and a clamp screw bearing against said jaw, substantially as and for the purposes described. 8th. In a machine of the character described, the combination, with a base plate, and a holder for the razor mounted therein, of a frame mounted on said base plate, a travelling carriage carrying revolving buttons for sharpening the razor mounted on said frame, and a sponge with a spring support therefor mounted in the wake of said buttons near the end of said razor, substantially as described. 9th. In a machine of the character described, the combination, with a device for holding the razor in a fixed position, of a carriage adapted to move backwards and forwards in a direction approximately parallel to the edge of the razor, a spindle mounted in journals carried by said carriage, a conical button of suitable abrading material carried by said spindle, a device for revolving said spindle, a spring normally pressing said button against said razor, and a screw adjusting the tension of said spring, substantially as and for the purposes described. 10th. In a machine of the character described, the combination, with a base plate and holder for the razor secured thereto, of a track mounted over said holder, a carriage moving along said track, spindles mounted in said carriage, buttons of suitable abrading material mounted on said spindles, pinions also mounted on said spindle, and a combined fly and gear wheel mounted in said carriage and moving therewith, with means for turning the said wheel, substantially as and for the purposes described. 11th. In a machine of the character described, the combination with a base plate and a holder for the razor secured thereto, of a track mounted over said holder, a rack parallel to said track, a carriage moving along said track, spindles mounted in said carriage, buttons of suitable abrading material mounted on said spindles, pinions also mounted on said spindles, a shaft set across said carriage and moving therewith, rollers on said shaft travelling on said track, a pinion on said shaft engaging in said rack, and a combined fly and gear wheel mounted on said carriage and adapted to turn in one direction only, substantially as and for the purposes described. 12th. In a machine of the character described, the combination with a base plate and a holder for the razor secured thereto, of a track mounted on said base plate and approximately parallel with the edge of said razor, a rack parallel to said track, a carriage moving along said track, spindles mounted in said carriage at an angle to the direction of motion thereof, conical buttons made of suitable abrading material and pinions both mounted on said spindles, a shaft set across said carriage and moving therewith, rollers on said shaft moving on said tracks, a pinion on said shaft engaging in said rack, a double bevelled gear wheel loosely mounted on said shaft and engaging said pinions, a ratchet and pawl connecting said shaft with said gear wheel, and means for turning said wheel, substantially as described. 13th. In a machine of the character described, the combination with the travelling carriage and the button spindles, buttons, and pinions mounted thereon, of the shaft set transversely to the carriage with a handle loosely mounted thereon for moving said shaft and said carriage backwards and forwards, of the combined fly and gear wheel loosely mounted on said shaft, and the ratchet and pawl connecting said wheel to said shaft, substantially as and for the purpose described. 14th. In a machine of the character described, the combination with the travelling carriage E, of the side pieces E^1, carrying the button spindles, and having slots therein and hand lugs as shown, of the studs *e* secured to the carriage and engaging in the forward slot, and the clamp

screw c^7 engaging in the rear slot, whereby the height of the said button spindle and buttons may be adjusted, substantially as described. 15th. In a machine of the character described, the combination with the clamp jaws B with the holding device T and clamp screw T^1, substantially as and for the purposes described. 16th. In a machine of the character described, the combination with a travelling carriage of a revolving button carried by said carriage, means for moving said carriage and for revolving said button, the clamp jaws B and the holding device T and clamp screw T^1, substantially as and for the purposes described.

No. 41,843. Auger. (*Tarière.*)

Granville S. Decatur, Hamilton, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—1st. The combination of the segmental head A, having a through slot B, handle socket boss H, the front boss E, provided with square headed set screw F, and the adjustable bent arms c, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the head A, having slot B, and its bosses E and H, and the adjustable extension bent arms c, provided with the curved, bent and split boring blades D, substantially as and for the purpose hereinbefore set forth.

No. 41,844. Combined Air Injector and Exhauster.

(*Injecteur d'air et orifice d'évacuation combinés.*)

Salyer Reed Earle, Belleville, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—1st. In a combined air and steam injector and exhauster, the steam chamber having a series of pipes disposed around and radiating from its periphery, and having a central jet projecting from the end of the drum, said peripheral jets curved to discharge parallel to one another and in the same direction, substantially as shown and for the purpose specified. 2nd. In combination, the conical nozzle having a flared or enlarged outlet, and a flange on each end, and the conical receiver having a transverse steam pipe supporting a steam chamber having a series of jets thereon and within said nozzle, and by a flange on its larger end secured to the flange on the larger end of said nozzle, substantially as shown and described. 3rd. In combination, the nozzle having a flange on each end and a conical body flared at the smaller end, the conical receiver having a transverse steam pipe therein and supporting a steam chamber having a series of jet pipes to discharge into said nozzle, said receiver having a flange on each end, and by the larger end connected to the larger end of said nozzle, and the elbow having a flange thereon by which to connect to either the said receiver or said nozzle, as and for the purpose specified. 4th. In combination, the nozzle having a flange on each end, and its conical body flared at the smaller end, the conical receiver having transverse steam pipe and steam chamber supported on said pipe as specified, and flanges on its ends, the elbow having flanges thereon to connect it as provided, and the air pipe connected to the smaller end of said receiver to form a vertical injector, and to the elbow to form a horizontal injector, substantially as set forth. 5th. In combination with an injector and exhauster having a steam chamber and jet pipes and nipples therein, the air pipe connected thereto in rear of said chamber and jet pipes, and having a cut off as specified therein, substantially as and for the purpose set forth.

No. 41,845. Machine for Grinding Glass.

(*Machine pour polir le verre.*)

James William Bonta, Wayne, Pennsylvania, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. The combination, in a grinding machine, of the mechanism for rotating the glass under the grinders, a platen adapted to said mechanism and on which the glass to be ground is mounted, a second platen also adapted to the rotating mechanism, means for securing the two platens together, and means for reversing the platens with the glass between them, substantially as described. 2nd. The combination, of the two platens adapted to clamp the glass between them, mechanism for rotating the platen carrying the glass between the grinders, bearings on each of said platens, pivots adapted to said bearings, and vertically adjustable frames carrying said pivots, substantially as described. 3rd. The combination, of the two platens, mechanism for rotating the lower platen when in position, bearings on each of said platens, vertically movable slides carrying pivot pins adapted to the bearings, sleeves extending over said bearings, and mechanism for advancing and withdrawing said sleeves, substantially as described. 4th, The combination, of the two platens, the slides E, E, pivot pins on said slides to which the platens are adapted, vertical screw rods adapted to said slides, and a driving shaft geared to both of said screw rods, substantially as described. 5th. The combination, of the two platens, two sides, pivot pins on said slides adapted to bearings on the platens, mechanism for raising and lowering the said slides, sleeves on each side capable of being moved over the bearings of the platens, vertical cam shafts carried by the slides, cams on said shafts adapted to move the sleeves, pinions on said shafts with a rack bar engaging said pinions, and mechanism for moving said rack bar, substantially as described.

No. 41,846. Load Lifter. (*Monte-charge.*)

Samuel Jones, Uplands, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—A derrick, composed of a base supporting a post A, the boom D, pivotally carried by the post, the hoisting rope F, passing over a pulley at the ends of the boom, and through a pulley G, attached to the base, a bar or stop J, pivoted to the post to lock the boom, a beam or bar M, attached to the hoisting rope, and provided with a trip N, and a fork or grapple L, whereby the tension of the rope swings the boom when the stop is removed and the load suspended, as set forth.

No. 41,847. Milk Agitating Machine.

(*Appareil pour agiter le lait.*)

Benjamin Ewing, Brighton, Ontario, Canada, 6th February, 1893; 6 years.

Claim.—1st. In an agitating or stirring device, the flexible strip of metal or other suitable material having a sleeve on its upper end by which it is revolved or rotated, for the purpose set forth. 2nd. In an agitating device, the floating arm of buoyant material having a rectangular opening therein at its centre, as and for the purpose set forth. 3rd. In an agitating device, the immersed arm of wood or other buoyant material having a central opening to fit on a vertical flexible strip, in combination with said vertical flexible strip of metal or other suitable material, having a sleeve on its upper end by which it is connected to rotate, substantially as shown and described. 4th. In an agitating device, the combination of the floating arm of wood or other buoyant material and having a central rectangular opening therein, and the immersed arm of similar material adapted to fit at centre on a means as specified, to rotate it, substantially as shown and described. 5th. In an agitating device, the combination of the flexible strip of metal or other suitable material, a sleeve on the upper end of said flexible strip by which it is rotated, the floating arm loosely carried in rotation by said strip, the immersed arm of buoyant material on the lower end of said strip, and the pivot in said strip to retain said immersed arm, substantially as shown and described. 6th. In an agitating device, the parallel bars to rest on the top of a milk vessel and support mechanism as described, to revolve a vertical shaft therein, the vertical shaft connected to rotate a metallic strip having arms thereon, and the floating and immersed arms on said strip, substantially as shown and described.

No. 41,848. Horse Shoe. (*Fer à cheval.*)

George Custer, Bremond, Texas, U. S. A., 6th February, 1893; 6 years.

Claim.—1st. As an improved article, a horse shoe having upwardly projecting inwardly inclined bevelled flanges at the heel, substantially as described. 2nd. As an improved article, a horse shoe consisting of the plate 1, having nail holes 2, the depending flange 3, the triangular recess 5, the triangular toe calk, and the upwardly extending bevelled flanges at the rear or heel portion of plate, substantially as described.

No. 41,849. Steam Pump. (*Pompe à vapeur.*)

Thomas Clark Eicher, Scottdale, Pennsylvania, U.S.A., 6th February, 1893; 6 years.

Claim.—1st. In combination, with the working cylinder and piston, the steam actuated valve, comprising a piston valve having a recess or socket at each end, the piston plugs fitting said sockets and provided with ducts intermediate, their ends communicating with the interior of said sockets, and suitable valves and passages controlling the admission of fluid to the piston valve and working cylinder, whereby steam is gradually admitted behind the piston valve at the moment of the reversal of the inlet valve, and confined in the recess at the opposite end of the piston valve near the completion of its stroke, for the purpose of cushioning the valve and gradually admitting steam to the working cylinder, substantially as described. 2nd. In combination, with the main cylinder and piston and suitable valve mechanism for alternately admitting and exhausting the steam therefrom, the slide valve, the piston valve attached thereto, having the socket or recess at each end, the piston plugs fitting within said sockets, and provided with ducts intermediate, their ends leading from said sockets to the interior of the valve chest, and the automatically actuated oscillating valve, all constructed and adapted to operate, substantially as described. 3rd. In combination, with the pump cylinder, having the interior circumferential shoulders near the ends thereof, the removable bronze bushing provided with correspondingly arranged exterior, circumferential shoulders adapted to abut against the shoulders of the cylinder, and the interposed packing rings, and means for detachably securing the bushing within the cylinder, substantially as described. 4th. In combination, with the pump cylinder, provided with ports near its ends, communicating with water passages leading therefrom, and interior circumferential shoulders adjacent to said ports and between the same, the removable bronze bushing extending the length of the cylinder and provided with ports near its ends adapted to register with the cylinder ports, and with exterior circumferential shoulders arranged to abut against the shoulders of the cylinder, together with elastic packing, rings fitted between said shoulder and means for detach-

ably securing the bushing within the cylinder, substantially as described. 5th. In combination, with the valve chambers of the pump cylinder, the bronze bushings removably fitted within said chambers and having the valves seated therein, substantially as described. 6th. In combination, with the pump cylinder and piston, the valve chest mounted thereon, having the usual chambers and water passages, and the bronze bushings or shields removably fitted within said chambers, and having their upper ends partially cut away to provide a free passage connecting the two chambers, substantially as described.

No. 41,850. Apparatus for Drilling Wells.

(*Appareil pour creuser les puits.*)

Thomas De La Mare, Tovele, Territory of Utah, U.S.A., 7th February, 1893; 6 years.

Claim.—In an apparatus for drilling wells, the combination of the horizontal frame, a derrick secured to and supporting one end of the frame and provided with an upper bifurcated end, a derrick wheel adjustably mounted in said bifurcated end, a winding drum journalled in the frame at the derrick end thereof and normally stationary, a bifurcated supporting arm mounted in the frame and inclining toward the derrick, a fixed guide pulley journalled in the upper end of said arm, a horizontally slotted walking beam or lever having adjustment perforations at both ends and at an intermediate point, a pivot bolt adjustably pivoting one end of the lever within said bifurcated arm below the upper fixed guide roller, an operating crank shaft journalled at one end of the frame, a connecting rod connected to said shaft and adjustable in the perforations at the free end of the walking beam or lever, a rope actuating roller or pulley having its journals adjustably mounted in the intermediate perforations of the slotted walking beam or lever adjacent to and below the plane of the guide pulley, and the drill rope winding on said winding drum, passing therefrom over the top of the fixed guide roller, thence through the walking beam or lever and around the adjustable actuating roller therein, and then over the top of the derrick wheel to the drill, substantially as set forth.

No. 41,851. Seat for Vehicles. (*Siège de voiture.*)

Hugh McCann, Guelph, Ontario, Canada, 7th February, 1893; 6 years.

Claim.—1st. Adjustable seats for vehicles adapted to be movable in grooves formed in the sides of the body 1, of the vehicle, substantially as described. 2nd. Adjustable seats for vehicles adapted to be movable in grooves, and connected together by an endless cable or belt 13, fastened to a slide 8 at 15, and to a seat 2 at 14, said seat 2, hinged at 5, to the folding cushion board 4, and at 6, to a seat 3, substantially as described. 3rd. Adjustable seats for vehicles connected by an endless cable or belt 13, said cable or belt travelling around a projecting grooved piece 16, fastened to the sides of body 1, substantially as specified. 4th. Adjustable seats for vehicles provided with pins 20 and 21, locking into said sides of the body 1, brackets 7, fastened to slide 8, said slide is provided with a bracket 9, joining a lever 10, fastened to a backboard 11, and is provided with a stop 18, locking against stop 19, fastened to said side of body 1, backboard 11, having a pin 23, locking into a clip or mortise 24, fastened to sides of body 1, all combined and substantially arranged as and for the purposes hereinbefore set forth.

No. 41,852. Lock. (*Serrure.*)

Vincent Abel Coleman, Port Hope, Ontario, Canada, 7th February, 1893; 6 years.

Claim.—1st. The combination of the neck B, with the cross head C, projecting from an appliance connecting it with the throat latch of a halter, and of the loop A, projecting from the cheek buckle or cheek piece of a halter constructed as described, for use in the manner and for the purposes set forth. 2nd. The neck B, with the curve *f* and cross head C, with the curves *n*, *n*, and the loop A, having the sides *d*, *d*, with the recesses *e*, *e*, for locking other parts of harness in a manner similar to their use in the throat latch lock.

No. 41,853. Construction of Plows or Cultivators.

(*Fabrication de charrues ou cultivateurs.*)

Waverley C. Moore, Greer's Depot, South Carolina, U.S.A., 7th February, 1893; 6 years.

Claim.—In an interchangable cultivator, the combination of a central curved beam pierced with holes at intervals, and upturned at its rear end with the curved or angular side bars bolted at their forward ends to the central bar, and held at their ends by screw threaded rods and spacing nuts, and the curved double standards provided with adjusting heads, whereby the pitch of said standards may be changed and the side bar adjusted longitudinally upon the centre bar, substantially as shown and described.

No. 41,854. Water Tube Locomotive Boiler.

(*Chaudière de locomotive à tuyau d'eau.*)

George J. Perkins, Truckee, California, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In a locomotive steam engine, the combination with the fire box, of a tube sheet approximately square in cross section, with round edges, having its upper surface a continuation of the crown sheet of said fire box, and communicating at one end with the fire box and at the other end with the smoke arch, water tubes arranged transversely thereto, and an outer casing surrounding said tube sheet and forming water spaces therewith, substantially as described. 2nd. In a locomotive steam engine, the combination with the fire box, of a tube sheet made of two overlapping sheets of metal, said tube sheets being approximately square in cross section, with rounded corners, having its upper surface a continuation of the crown sheet of said fire box, and therefore on a level with the same, and communicating at one end with the fire box, and at the other end with the smoke arch, water tubes arranged transversely thereto, and an end wall or sheet at the forward end of the boiler, said end sheet being provided with man holes, and said water tubes being provided near their extremities with beads, substantially as and for the purpose set forth.

No. 41,855. Earth Auger. (*Sonde à trépan.*)

Henry Iwan and Louis Iwan, both of Streator, Illinois, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. An earth auger having concavo convex blades terminating in bits and set on a yoke to describe, each on one side of its fastening to the yoke toward the cutting edge a greater arc of a circle than that described by its portion at the opposite side of said fastening, substantially as and for the purpose set forth. 2nd. An earth auger having concavo convex blades terminating in bits, in combination with a yoke to the opposite ends of which the blades are fastened and having a central socket, and a pipe, for the stem, fastened at one end in the yoke socket and provided at its opposite end with a T-socket for the handle, substantially as described. 3rd. An earth augur having concavo convex blades provided at their ends with downward projectings bits *p*, and laterally extending mutually overlapping and bracing bits *o*, substantially as described. 4th. An earth augur having concavo convex blades terminating in downward projecting bits *p*, and laterally extending and slanting mutually overlapping and bracing bits *o*, substantially as described. 5th. An earth augur having concavo convex blades terminating in downward projecting bits *p*, and laterally extending bits *o*, provided with offsets *n*, in adjacent edges and overlapping and engaging, to brace each other, at the said offsets, substantially as described. 6th. An earth auger comprising, in combination, a stem provided with a handle at one end and a yoke at the opposite end, concave convex blades A set at opposite ends of the yoke each to describe a greater arc toward its cutting edge from the yoke than toward its opposite edge therefrom, said blades terminating in downward projecting bits *p*, and laterally extending bits *o*, provided withoffsets *n* in adjacent edges and overlapping and engaging, to brace each other, at the said offsets, substantially as described.

No. 41,856. Sash Balance. (*Contrepoids de croisée.*)

Robert McMillen, Pittsburgh, Pennsylvania, U.S.A., 7th February, 1893; 6 years.

Claim.—The herein described sash balance, and sash lock, consisting of the frame constructed as described, the levers 4 mounted therein, the toothed wheel 1 and spring arranged therein, the cross pieces 9, and 12 connected by a bar 13, and operating in the slots 10, and 11, the revolving piece 15 connected with the cross piece 12 by means of links 14, the locking pawl 19, and hook 20, all arranged and combined for service, substantially as and for the purpose described.

No. 41,857. Steam Drop Press.

(*Presse à bascule à vapeur.*)

James H. Mason, Chicago, Illinois, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In a steam drop press, the combination, of the piston cylinder, provided at its lower end with a reduced steam and an enlarged exhaust port side by side, a steam escape vent port located at a point near the top thereof, and an air vent directly above the steam vent, a supplemental steam chest or valve casing secured to said cylinder, and having corresponding ports registering with the cylinder ports, a rotary valve mounted in said chest or casing, and provided with separated reduced steam and enlarged exhaust passages disposed at an angle to each other, and adapted to alternately register with their respective ports opening into said cylinder, and a removal cap inclosing the valve at one end within the casing, substantially as set forth. 2nd. In a steam drop press, the combination, with the cylinder having a reduced steam, and an enlarged exhaust port at its lower end and side by side, of a supplemental steam chest or valve casing secured to said cylinder over said ports, and provided with an annular or circular recess in the side or body thereof, a rotary valve provided with separate transverse steam and exhaust passages disposed at an angle to each other, an end annular flange taking and working in said circular recess in the body of said casing, and means for controlling said valve, substantially as set forth, 3rd. The combination, with the cylinder having a steam and exhaust port side by side, and located at the bottom thereof, of a supplemental steam chest inclosing said ports, and provided with a circular recess or seat in one side of the body thereof, a rotary valve provided with separated transverse steam and exhaust passages disposed at an angle to each other, and with an end annular flange tak-

ing and working in said circular recess, and having a circular groove in the outer face thereof, an inclosing side or cap fitting over said flange, and secured to the body of said chest, and provided with a circular groove registering with said flange groove, packing inserted in said registering grooves, and means for controlling said valve, substantially as set forth.

No. 41,858. Harrow. (*Herse.*)

Austin Callander, Merrickville, Ontario, Canada, 7th February, 1893; 6 years.

Claim.—1st. An angle iron harrow frame, constructed of two uniform front and rear sections connected together at the sides at *a*, *a*, each section having holes E, in the horizontal flange, and slots G, in the vertical flange, the middle of said holes and slots coinciding vertically, and having terminations *l*, provided with L-shaped notches, and intersecting the bar of the conjoined section, and an intermediate tooth bar or bars D, having holes E, and slots G, and having L-shaped notches near the end and intersecting the front and rear of the harrow frame A, and rivetted thereto, as set forth. 2nd. The combination, with an angle iron harrow frame A, having holes E, in the horizontal flange, and slots G, in the vertical flange, said holes and slots respectively coincident vertically, of L-shaped tooth holders H, having a hole in the longer leg agreeing with the hole E, and inserted in the slots G, and bent against the harrow frame, and a shorter leg standing on the horizontal flange, and a harrow tooth inserted in said holes of the harrow frame and tooth bars, and in the hole of the tooth holder, as set forth.

No. 41,859. Apparatus for Holding and Dipping Pills. (*Appareil pour tenir et immerger les pilules.*)

Albyn D. Stearns, Detroit, Michigan, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In an apparatus for holding and dipping pills, the combination of an open frame provided with a cross bar, of a series of tubes engaged with said cross bar and led individually to a point of assemblage at their opposite ends, a union engaging the assembled ends of the individual tubes and a suction tube engaging said union, substantially as described. 2nd. In an apparatus for holding and dipping pills, the combination of a frame provided with a cross bar A^1, a series of tubes engaged with said cross bar, a suction tube engaging said series of tubes, and a perforated bar F, having a reciprocatory engagement with said frame and tubes, substantially as described. 3rd. In an apparatus for holding and dipping pills, the combination of a frame constructed with a cross bar A^1, and a cross bar A^4, of a series of tubes engaged with the bar A^1, and spaced therein one from another, said tubes assembled at the opposite extremities and passed through the frame, and a suction tube engaging the assembled ends of said tubes, substantially as described. 4th. In an apparatus for holding and dipping pills, the combination of a frame, a series of tubes engaged with said frame forming seats for the pills at one end, a suction device connected with the opposite ends of said tubes, and a perforated reciprocatory removing bar engaged with said frame and with said tubes, said frame and tubes having a removable engagement with said suction device, substantially as described. 5th. In an apparatus for holding and dipping pills, a series of individual tubes, each tube forming a seat for a pill at one end, and means for individually exhausting said tubes, substantially as described.

No. 41,860. Crestings or Copings. (*Crêtes ou larmiers.*)

Clark B. Nelson, Crawfordsville, Indiana, U. S. A., 7th February, 1893; 6 years.

Claim.—1st. The combination, with a glass or other vitreous coping or cresting, of a shoe conforming to the shape of the base of the coping or cresting and to which the coping or cresting is secured, substantially as set forth. 2nd. The combination, with an ornamental coping or cresting, of a shoe in which it is secured, and a sheathing to which the shoe is secured, substantially as set forth.

No. 41,861. Support for School Desks and Seats. (*Support pour pupitres et sièges d'ecole.*)

Frederic Austin Chandler, Somerville, Massachusetts, U.S.A., 7th February, 1893; 6 years.

Claim.—A supporting standard for school desks and seats, composed of a lower portion or base A, and an upright or upper portion B, provided with grooves or recesses and adapted to slide vertically within said base, combined with a double or U-shaped spring D, adapted to slide horizontally on said base and engage the grooves or recesses in the vertically sliding upright, and a clamping bolt E, passing through said spring and adapted to hold the same when slid forward to lock the upright at the desired heighth, substantially as set forth.

No. 41,862. Machine for Covering Dress Stays. (*Machine pour couvrir les buscs de corset.*)

George Otto Schneller, Ansonia, Connecticut, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In a machine for covering wire, the combination of a pair of feed rolls adapted to produce a continuous feed for the wire, a second pair of feed rolls to which the wire passes from the first pair of feed rolls, the second pair of feed rolls having a surface movement more rapid than that of the first pair of rolls, a covering mechanism, substantially such as described, between the two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, with mechanism, substantially such as described, between the said covering device and the said first pair of rolls to automatically cut the wire at a predetermined time, substantially as described, and whereby the pieces so cut from the wire will be advanced by the second pair of rolls more rapidly than the body of the wire is advanced by the first pair of rolls. 2nd. In a machine for covering wire, the combination of a pair of feed rolls between which the wire to be covered passes, a second pair of feed rolls to which the wire passes from the said first pair of feed rolls, the surface movement of the said second feed rolls being greater than that of the first pair of feed rolls, a covering mechanism between the said two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutting mechanism between the covering device and the said first pair of rolls, and through which cutting mechanism the wire passes, the said cutting mechanism being adapted to cut the wire at a predetermined time, and whereby the piece so cut is advanced by the second pair of feed rolls at a greater velocity than the body of the wire is advanced by the first pair of feed rolls, and whereby a space will be formed within the covering between successive pieces of wire, a second cutter beyond the said second pair of feed rolls adapted to cut the covering between the adjacent ends of the covered pieces of wire, substantially as described. 3rd. In a machine for covering wire, a pair of feed rolls between which the wire to be covered passes, a second pair of feed rolls to which the wire passes from the first pair of feed rolls, the surface movement of the second pair of feed rolls being greater than that of the first pair of rolls, a covering mechanism, substantially such as described, between said two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutting mechanism between the covering devices and said first pair of rolls, and through which cutting mechanism the wire passes, the said cutting mechanism being adapted to cut the wire at a predetermined time, with mechanism for imparting to said cutting mechanism a movement with and substantially the same velocity as that of the covered wire, substantially as described. 4th. In a machine for covering wire, the combination of a pair of feed rolls adapted to produce a continuous feed for the wire, a second pair of feed rolls to which the wire passes from the first pair of feed rolls, the second pair of feed rolls having a surface movement more rapid than that of the first pair of rolls, a folding device between the said two pairs of rolls, and leading between the said second pair of rolls, and through which the wire must pass, mechanism substantially such as described to coat the strip of covering with adhesive material, and conduct said strip into said folding device, with mechanism substantially such as described between the said folding device and the first pair of feed rolls to substantially cut the wire at a predetermined time, substantially as described, and whereby the piece so cut from the wire will be advanced by the second pair of rolls more rapidly than the body of the wire is advanced by the first pair of rolls. 5th. In a machine for covering wire, a pair of continuously revolving feed rolls between which the wire to be covered passes, a second pair of feed rolls to which the wire passes from the said first pair of feed rolls, the surface movement of said second pair of feed rolls being greater than that of the first pair of feed rolls, a folder arranged between the said two pairs of rolls, and leading between the said second pair of rolls, and through which folder the wire must pass, mechanism substantially such as described to coat and present to said folder a strip of material with which the wire is to be covered, a cutting mechanism between the folder and the first pair of feed rolls through which cutting mechanism the wire passes, the said mechanism being adapted to cut the wire at a predetermined time, and mechanism adapted to impart to said cutting mechanism a movement with and at substantially the same velocity as that of the surface movement of the said second pair of rolls, substantially as described. 6th. In a machine for covering wire, the combination of a pair of continuously revolving feed rolls, one of said rolls arranged upon its arbor to permit a limited extent of over motion, a second pair of feed rolls through which the wire passes from the first pair of feed rolls, the surface movement of the second pair of feed rolls being greater than that of the first pair of feed rolls, a covering mechanism through which the wire passes to said second pair of feed rolls, a longitudinal slide arranged between the covering mechanism and said first pair of feed rolls, the said slide having a longitudinal movement imparted to it corresponding to the surface movement of said second pair of rolls, the said slide carrying a cutting mechanism through which the wire passes, and adapted to cut the wire while the slide is moving with the wire, mechanism between the said slide and the said first pair of rolls, substantially as described, and whereby in the return movement of said slide the said first pair of rolls are separated. 7th. In a machine for covering wire in which a mechanism is provided for a continuous feed of the wire, the combination therewith of a longitudinal slide arranged to move in a path parallel with the advancing movement of the wire, mechanism substantially such as described to impart to said slide an advancing movement corresponding to the advancing movement of the wire, a cutter stationary on said slide, a lever hung to said slide and carrying a second cutter, between which two cutters the wire passes, a second lever hung to said slide, and in connection with said

cutter lever, the said second lever constructed with a cam shaped groove, and a lever hung upon a stationary axis and so as to swing in a plane parallel with the path of movement of the slide, the said stationary lever carrying a stud adapted to work in the said cam shaped groove on the said second lever, the said stud carrying lever held stationary in one direction, but free in the opposite direction, substantially as described, with mechanism to return said slide, and whereby under the advancing movement of said slide, the cutters will close, and then open before the slide returns. 8th. In a machine for covering wire, the combination of a pair of feed rolls between which the wire, passes a second pair of feed rolls through which the wire also passes, the the surface movement of said second pair of feed rolls being greater than that of said first pair of feed rolls, a folder between said pairs of rolls, and through which the wire passes to said second pair of rolls, mechanism substantially such as described to coat and conduct to said folder a strip of material, a cutting mechanism between the folder and the first pair of rolls, adapted to cut the wire at a predetermined time, and so that the portion so cut from the body of the wire will advance under the revolution of the second pair of rolls more rapidly than that of the body of the wire, and thereby leave a space of the covering material between the ends of the one piece so cut and the end of the next piece, a second cutting mechanism arranged beyond the said second pair of rolls, and adapted to cut the covering between the ends of the covered pieces of wire, substantially as described. 9th. In a machine for covering wire, a pair of feed rolls between which the wire to be covered passes, a second pair of feed rolls through which the wire also passes, the said second pair of feed rolls having a surface velocity greater than that of the first pair of feed rolls, a covering mechanism substantially such as described between the two pairs of rolls, and through which the wire to be covered passes to said second pair of rolls, a cutter between said covering mechanism and the said first pair of rolls, adapted to cut the wire at a predetermined time, the portion so cut being engaged by the second pair of rolls, and consequently advanced at a greater velocity than that of the body of the wire fed by the first pair of rolls, and whereby a space will be formed within the covering between succeeding pieces of wire, a cutter beyond the said second pair of feed roll arranged to separate the covered pieces at a point in the covering between the adjacent ends of the pieces of wire, mechanism substantially such as described for imparting to both said cutters a longitudinal movement during the cutting operations at substantially the same velocity as that of the covered wire, substantially as described.

No. 41,863. Window Frames and Sash Support.

(*Support pour cadres et croisées de fenêtre.*)

George Harvey, Toronto, Ontario, Canada, 7th February, 1893; 6 years.

Claim.—1st. A window frame and sash support comprising a frame, a movable style in said window frame adapted to press against the side of the window sash and means for giving pressure to said movable style, substantially as and for the purpose described. 2nd. In a window frame and sash support, the window sash, a frame surrounding said window sash, a movable style in said frame adapted to press against the side of the window sash means for giving pressure to said movable style, a sash weight secured to said window sash, substantially as and for the purpose described. 3rd. In a window frame and sash support, the combination of a window frame, the window sash, a movable style formed in said window frame adapted to press against the side of the window sash, an opening through said movable style, a sash cord one end of which is secured to the window sash, and the other end passing through the opening in the movable style and secured to a weight and means for giving pressure to the movable style, substantially as and for the purpose described. 4th. In a window frame and sash support, the combination of the window frame, the sash, a movable style formed in said frame, the pulley box, a bracket within said box movably secured the front end of said bracket adapted to bear against the movable style, and a weight attached to to said bracket to give the required pressure, substantially as and for the purpose specified. 5th. In a window frame and sash support, the combination with the window sash, of a frame surrounding the same a movable style forming part of the window frame adapted to press against the side of the window sash an opening through said style, a pulley bracket located within said box, a pulley mounted in said bracket and projecting through the opening in the movable style, a sash cord one end of which is secured to the window sash the other end of which passes over the pulley mounted in a pulley bracket extending downward through the pulley box and around a pulley secured to the sash weight and then secured to the pulley bracket and a sash weight held by the sash cord, substantially as and for the purpose specified.

No. 41,864. Cushion for Billiard Tables.

(*Bande pour tables de billiard.*)

The Brunswick Balke Callender Company, assignee of Moses Bensinger, Chicago, Illinois, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In a billiard cushion strip, the combination, with the usual rubber body portion A, of a face hardening strip, composed of the material or substance known as "vulcanized fibre," the said strip being arranged, substantially as hereinbefore set forth. 2nd. In a cushion strip, provided with a face, hardening strip of vulcanized fibre, the combination, of the body portion A, the strip of vulcanized fibre *f*, and strip of canvas, or other suitable textile fabric, which envelopes the strip *f*, all substantially as and for the purposes set forth.

No. 41,865. Cushion for Billiard Tables.

(*Bande pour tables de billiard.*)

The Brunswick Balke Callender Company, assignee of Moses Bensinger, Chicago, Illinois, U.S.A., 7th February, 1893; 6 years.

Claim.—A billiard cushion strip, composed of the usual rubber compound, provided with a suitable face hardening device and formed with a comparatively large recess *f*, located about centrally of the back side of the strip, the flat and recessed portions of said back side of the strip being backed with canvas or its equivalent, substantially as and for the purposes set forth.

No. 41,866. Toothed Gearing. (*Engrenage.*)

Matthew Pettigrew Campbell, Glasgow, Lanark, England, and James Rutherford, Spokane Falls, Washington, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. A gear weel having angular pivoted teeth free to oscillate on their pivots, the distance of the teeth from centre to centre being constant, while their inclination may be varied to accord with screws or worms of varying pitch, substantially as shown described. 2nd. A gear wheel having pivoted teeth and enlarged roots adapted to bear against each other, substantially as shown and described.

No. 41,867. Method of and Apparatus for Electrolytically Producing Soda and Chlorine.

(*Méthode et appareil pour produire par l'électrolyse de la soude et du chlore.*)

Elisha B. Cutten, New York, State of New York, U. S. A., 7th February, 1893; 18 years.

Claim.—1st. The process of obtaining caustic soda by electrolyzing a solution of sodium chloride, and causing that part of the solution containing the greatest proportion of soda to become segregated or separated by the action of gravity upon it, or by mechanical means, from the remainder of the electrolyte, and simultaneously extracting mechanically from said electrolyte the produced chlorine. 2nd, An electrolytic apparatus operating and arranged, subtantially as herein set forth, wherein a solution of sodium chloride may be electrolyzed to produce caustic soda and chlorine in accordance with the process described. 3rd. An electrolytic apparatus operating and arranged, substantially as herein set forth, wherein a regulated continuous supply of sodium chloride may be electrolyzed to produce caustic soda and chlorine, and wherein the solution weakened by electrolytic decomposition may be re-fortified with salt and returned to the electrolytic cell for renewed decomposition in accordance with the process described. 4th. An electrolytic cell having an outer vessel forming a cathode, a non-porous inner cylinder open at the bottom and closed above, and containing an anode and suction or pumping apparatus connected with the inner cylinder cover above the liquid level and operating to exhaust gas from said inner cylinder, the whole being adapted to the electrolysis of sodium chloride to produce caustic soda and chlorine in accordance with the process described.

No. 41,868. Shears. (*Forces.*)

Thomas M. Underwood and John Rowan, both of Baldwin, Mississippi, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. In a barber's appliance, the combination, with the pivoted members of a pair of shears, of a rod extending therefrom and provided at its outer end with a head or stop, an expansion spring interposed between one of said members and the stop, and a comb having one extremity perforated and loosely receiving the pivot rod and interposed between the spring and head, substantially as specified. 2nd. In a barber's appliance, the combination, with the pivoted members of a pair of shears, of a screw threaded pivot rod therefor, adjusting nuts for said pivot rod on both sides of the shears, an expansion spring interposed between one of said members and the adjacent nut, a comb having its rear extremity held on the pivot rod between the said spring and nut, and a spring clip provided with spaced vertical perforations on the forward extremity of the comb, substantially as specified. 3rd. In a barber's appliance, the combination with the shears and its pivot rod, of a comb having a plate provided with a plurality of perforations secured to its rear extremity, a spring between the shears and the said plate, and an adjusting nut controlling the tension of said spring, substantially as specified.

No. 41,869. Cleaner for Grain. (*Nettoyeur des grains.*)

August Heine, Silver Creek, New York, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. The combination, with the enclosing case of the machine, of a trough shaped scouring case of the machine, of a trough shaped scouring case provided with perforations for the passage of the dust, and a scouring cylinder arranged within the lower

portion of the scouring case, and separated from the top of the machine by a chamber, in which the dust floats, substantially as set forth. 2nd. The combination, with the enclosing case of the machine, of a trough shaped scouring case, provided with perforations for the passage of the dust, a scouring cylinder arranged within the lower portion of the scouring case, and separated from the top of the machine by a chamber in which the dust floats, and a fan by which the floating dust is drawn through the perforations, substantially as set forth. 3rd. The combination, with the enclosing case of the machine, of a trough shaped scouring case, having an inclined rear wall and provided with perforations for the passage of the dust, adjustable deflectors arranged upon said inclined rear wall, a scouring cylinder arranged within the lower portion of the scouring case and separated from the top of the machine by a chamber, in which the dust floats, and a fan by which the floating dust is drawn through the perforations of the inclined rear wall of the scouring case, substantially as set forth. 4th. The combination, with the scouring mechanism, of a fan, an air separator which receives the grain from the scouring mechanism, and in which such grain is subjected to an ascending air current created by said fan, and in which such air current is afterwards freed from the solid matter which it has removed from the grain, and a return passage by which the air current is conducted back to the point at which the grain encounters the ascending air current, substantially as set forth. 5th. The combination, with a scouring mechanism, of a receiving hopper arranged underneath the same and receiving the scoured grain, a fan whereby the air current is drawn upwardly through said receiving hopper, a separator through which the air current is propelled by the fan, and in which the solid matter is separated from the air current, and a return passage by which the purified air is returned to the receiving hopper, substantially as set forth. 6th. The combination, with a scouring mechanism, of a receiving hopper arranged underneath the same and receiving the scoured grain, a fan whereby an air current is drawn upwardly through the receiving hopper, a zig-zag separating passage receiving the blast of the fan at its upper end, and a return passage whereby the lower end of the separating passage is connected with the receiving hopper, substantially as set forth. 7th. The combination, with a scouring mechanism, of a receiving hopper arranged underneath the same and receiving the grain, a fan whereby an air current is drawn upwardly through said receiving hopper, and an upright separating passage provided with two series of inclined boards, one series being arranged contingous to the front wall of such passage, and the other series being arranged at a distance therefrom, and separated from the rear wall of such passage by narrow dust discharge openings, substantially as set forth. 8th. The combination, with a scouring cylinder, of a perforated scouring case in which said cylinder is arranged, a receiving hopper in which said perforated case is arranged, a fan whereby an air current is drawn upwardly through said receiving hopper, a separator through which the air current is propelled by said fan, and a return spout connecting the tail of said separator with said receiving hopper, substantially as set forth. 9th. The combination, with a scouring cylinder, of a scouring case provided with discharge openings at both ends, a conveyer trough arranged underneath the scouring case and receiving the grain therefrom, a duplex screw conveyer arranged in said conveyer trough, which latter is provided with an elevated discharge opening, a hopper which receives the grain from said discharge opening, a fan by which an air current is drawn upwardly through said hopper, a separator which receives the air current from said fan, and in which the solid matter is separated from the air current, and a return spout which connects the tail end of said separator with the receiving hopper, substantially as set forth. 10th, The combination, with a scouring mechanism, of a hopper which receives the grain therefrom, a fan by which an air current is drawn upwardly through said hopper, a pocket arranged in the blast spout of said fan for the separation of the heaviest material contained in the air current, a descending zig-zag passage which receives the air current after it has deposited the heaviest material, and in which the light material is separated from the air current, and a return passage connecting the tail end of said zig-zag passage with the receiving hopper, substantially as set forth.

No. 41,870. Balance Scales. (*Balance à bascule.*)

Richard M. Shaffer, Baltimore, Maryland, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. A pair of balance scales, consisting of a fulcrumed frame bearing at one end a pan or its equivalent and the other end a support for adjustable weights having a single point of connection with the fulcrumed frame, a series of weights of different gravities, and adjusting devices for each for placing them singly or collectively upon said support to balance the articles in the weighing pan, substantially as shown and described. 2nd. A pair of balance scales, consisting of a fulcrumed frame bearing at one end a pan or its described equivalent and at the other end a weight support placed at a lower level and having a single point of connection with the fulcrumed frame, a series of weights of different gravities sustained just above the weight support, adjusting devices for depositing said weights upon the support, and outer case inclosing the weights and weight support, and operating knobs or handles arranged outside the case marked to correspond with the weights which they represent and connected to their adjusting mechanism, substantially as shown and described. 3rd. The combination, with an inclosing case, of a fulcrumed main frame having at one end a rod extending up through the case and bearing a pan or its described equivalent, and having at the other end a weight support within the case for adjustable weights, with vertical standard O^2, rising above the weight support, and the swinging oscillating stay arms O, O^1, pivoted or hung centrally above the fulcrum of the main frame and pivoted the one to the rod of the pan below the same and the other to the standard of the weight support above the latter, substantially as shown and described. 4th. The combination, with the weight support in a balance scale, of a series of weights loosely hung above it, the links *c*, loosely connected thereto, the lifting arms *d*, connected to the links, the lifting cams *e*, arranged beneath the arms and provided with extension *f*, the vertical pull rods I, and the links *g*, connecting the same to the cam extensions, substantially as shown and described. 5th. The combination, with the weight support, the weights, and the weight adjusting devices, of series of springs for tightly holding the adjusting devices to place against looseness, substantially as described. 6th. The combination, with the outer case having balance frame, weight support, weights, and adjusting devices within, of the cross bar L, springs K, attached to the cross bar and pressing upon the weight adjusting arms, the undercut guide bars J, and the dovetailed sliding cover M, substantially as shown and described. 7th. A balance scales, consisting of an inclosing case, and external weighing pan or its described equivalent, a series of external pulls or handles marked with the specified weights which they represent, and a series of weights of different gravities, a pan or support having a single point of connection with the fulcrum frame, and adjusting devices within the case and connected to said pulls or handles, substantially as described, to cause the weights to be brought at will into or out of weighing action, as set forth.

No. 41,871. Grain Binder. (*Lieuse à grain.*)

Louis H. Grieser, Duluth, Minnesota, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. The method herein described of binding grain, consisting in first forming a gavel or bundle, then successively taking a number of strands from the periphery thereof, bending them upwardly or outwardly, then weaving such bent portions together, and finally tucking the last twisted strands underneath the first woven strands, substantially as set forth. 2nd. In a grain binder, the combination, with the revoluble wheel, having the segmental flanges on its outer face with spaces between the ends thereof, of the gate pivoted to said wheel, the inwardly projecting curved lug, the upright arm having a roller, the oscillating rod to which said roller is secured, and the packer and its connections, substantially as described. 3rd. In a grain binder, the combination, of the wheel having segmental flanges on its outer face, the gates pivoted to said wheel, the inwardly extending curved lug formed with or secured to one of said flanges, the upright having a roller at its upper end, the oscillating bar or rod to which said roller is secured, the segment and pinion, the bar or rod to which said pinion is secured, and the two part packer, substantially as described. 4th. In a grain binder, the combination, with the wheel having segmental flanges on its outer face, the gate pivoted to said wheel, the inwardly extending curved lug formed with or secured to one of said flange, the upright arm having a roller at its upper end, the oscillatting bar or rod to which said roller is secured, the segment and pinion, the bar or rod to which said pinion is secured, and the two part pivoted packer having V-shaped longitudinal grooves on its inner surface, substantially as described. 5th. In a grain binder, the combination, with the two part pivoted backer having longitudinal grooves in the inner surface, of the wheel having segmental flanges, one of which is provided with an inwardly projecting curved lug, the gates pivoted to said wheel, one of said gates having a flaring extension, while its inner faces are formed of two curves, and provided with a finger or stop adapted to engage with a recess in one of said flanges, the roller adapted to engage with said gate, the upright carrying the roller and the connections between said packer and wheel, substantially as described. 6th. In a grain binder, the combination, with the two part packer, having longitudinal grooves on its inner surface, the wheel having segmental flanges, pivoted gates, and an inwardly projecting curved lug, the hub formed with said wheel, the cogged disc, the pinion journalled in said wheel, and moving therewith and meshing with said disc, of the shaft carrying the cage and provided with a finger and a twister, substantially as described. 7th. In a grain binder, the combination, with the two part packer, having longitudinal V-shaped grooves and means substantially as described for actuating the same, of the wheel having a hub with a bevelled pinion and cogged disc, of the pinion journalled in front of said wheel and meshing with said disc, the shaft connected with said pinion and rotated thereby, the cage carried by said shaft, and provided with a revolving shaft having a series of curved twisting blades, substantially as set forth. 8th. In a grain binder the combination, with the two part packer, and the driving wheel provided with a rotating shaft, of the cage carried by said shaft, having the finger, the revolving shaft, the pinions connected with said shafts, the curved twisting blades, and the roller adapted to run on the periphery of the packer, substantially as described. 9th. In a grain binder the combination, with the cage having the finger and revolving twister, of the two part packer, having longitudinal V-shaped grooves on its inner surface, and a reciprocating tucker, substantially as described. 10th. In a grain binder the combination with the cage having a finger and a revolv-

ing twister, of the two part packer, having longitudinal V-shaped grooves on its inner surface, the reciprocating tucker, working in a race in an extension of the packer and having its end bevelled forming a jaw, and the jaw pivoted to said tucker and connected with said pivoted jaw, substantially as described. 11th. In a grain binder, the combination, with the cage having the finger and revolving twister, of the reciprocating tucker working in a race in an extension of the packer, and having its front end bevelled forming a jaw and with a groove in its upper side, the jaw pivoted in lugs on said tucker, and the arm connected with the jaw and working in the aforesaid groove, substantially as described. 12th. In a grain binder, the combination, with the cage having the finger and revolving twister, of the two part packer, the reciprocating tucker working in a race in an extension of the packer and having its front end bevelled, forming a jaw and with a groove in its upper side, the jaw pivoted in lugs on said tucker, bar or rod connected with said pivoted jaws and working in said groove, a pin or stud on the said rod, a plate having a slot through which said stud projects, a shaft journalled on the said extension of the packer, and a two armed plate apated to be struck by the cage in its movement and actuate the tucker, substantially as described. 13th. In a grain binder, the combination, with the cage having the finger and revolving twister, of the two part packer, the reciprocating tucker working in a race in an extension of the packer and having its front end bevelled, forming a jaw with a groove in its upper side, the jaw pivoted in lugs on said tucker, a rod connected with said pivoted jaw and working in said grooves, a pin or stud on the said rod, an arm having a slot through which said stud passes, and at its other end provided with notches, a shaft journalled in the said extension of the packer, a two armed plate secured to said shaft, a pivoted spring pawl adapted to engage with said notches, a spring rod connected at one end with said pawl and having its other end formed into a hook and engaging with a stud on the other section of the packer, substantially as described. 14th. In a grain binder, the combination, with the two part packer, of the shaft connected with the movable section thereof and provided with an inwardly extending discharging arm, substantially as described. 15th. In a grain binder, the combination, with the packer made in two sections and pivoted together, and provided with a series of V-shaped grooves on its inner surface, of the adjustable segmental plates connected with said sections, and provided with recesses having bevelled sides, whereby the sides of said grooves may be varied, substantially as described. 16th. In a grain binder, the combination, with the binder driving wheel having segmental flanges and pivoted gates, an inwardly projecting lug or finger, of the oscillating bar having an upright carrying a roller, the segment mounted on the other end of said shaft having a projecting pin, the curved arm having an extension and slot in which said stud works, the pivoted curved arm connected with said arm, and having longitudinally extending bars provided with inwardly projecting slats, substantially as described. 17th. In a grain binder, the combination, with the binder driving wheel, having segmental flanges on its outer face, pivoted gates, and an inwardly projecting lug or finger, of the oscillating shaft having an upwardly extending arm provided with a roller, a segment secured to the opposite end of said shaft, the pinion meshing with said segment, the rod connected with said pinion, the bell crank lever and shaft connected therewith, the pivoted lever, the shaft having crank, the rods connecting said lever and cranks, and the inwardly extending fingers or slats secured to said shafts, substantially as described. 18th. In a grain binder, the combination, with the oscillating shaft having a segment at one end provided with a stud, the pinion meshing with said segment, a rod connected with said pinion, a bell crank lever and shaft connected therewith, the pivoted lever, the shaft having a crank, the rods connecting said lever and cranks, and the inwardly extending fingers or slats secured to said shafts, of the pivoted arms having longitudinal bars, with inwardly extending fingers or slats, the curved arm pivoted to said arms and having a slotted extension in which the pin or stud on the segment works, substantially as described.

No. 41,872. Method of Making Sheet Metal Check Hooks. (*Méthode de fabriquer des crochets de sellette de métal en feuille.*)

Harry Eugene Kelley, Niagara Falls, New York, U.S.A., 7th February, 1893; 6 years.

Claim.—1st. The herein described method of making a sheet metal hook, which consists in cutting a straight blank from a flat sheet of metal, then imparting the desired cross section to the straight blank by stamping between suitable dies, and then bending the blank into hook form, substantially as set forth. 2nd. The herein described method of making a sheet metal hook, which consists in cutting a straight blank from a flat sheet of metal, then stamping the straight blank to the desired cross section between suitable dies, then polishing or finishing the stamped blank, and finally bending the polished or finished blank into hook form, substantially as set forth. 3rd. The herein described method of making a sheet metal hook, which consists in cutting a straight blank from a flat sheet of metal, then imparting the desired cross section to the straight blank by stamping between suitable dies, then punching the bolt hole in the blank, then polishing the blank and then bending the polished blank into hook form, substantially as set forth.

No. 41,873. Electric Battery. (*Pile électrique.*)

Electrolibration Company, Birmingham, Alabama, asssignee of John Norwood Webb, Washington, Columbia, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. A portable thermo-electric battery, the ends, plates or parts of which for heating or cooling are of relatively great size to the intermediate connector, which is a suitable flexible connection, substantially as described. 2nd. A plate for a thermo-electric battery, composed of a sheet of tin or other suitable substance, folded upon itself in convolutions, provided with interposed separating pieces, and a metallic binder, substantially as shown. 3rd. The combination of a plate for a thermo-electric battery, composed of a sheet of some relatively thermo-electro positive substance, folded upon itself in convolutions, a relatively thermo-electro negative substance, in the form of wire, and again a thermo-electro positive substance connected to the first by the wire, substantially as set forth.

No. 41,874. Steering, Propelling and Reversing Apparatus. (*Appareil pour gouverner, propulser et renverser.*)

Delbert J. Reynolds, Winnebago, Minnesota, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. The combination, with a vessel, of a propelling wheel supported thereon, a cylinder pivotally supported in a rocking bar, pivotally mounted in the boat, a piston rod fitted within the cylinder and adapted to impart a continuous rotary motion to the wheel, and means connected with the propeller for shifting and reversing the propeller, substantially as set forth. 2nd. In a boat, the combination, with a cylinder having a double pivotal connection within the boat, whereby a lateral and upward and downward movement is possible, of a piston, a propeller supported on the boat and operated from the piston, clutch mechanism connected with the propeller, and reversing and shifting mechanism, substantially as set forth. 3rd. In a boat, the combination, with the pivotally supported cylinder, and a piston rod therein, of a shaft carrying paddles, gear wheels loosely mounted on the shaft, a double rack bar connected with the piston rod, and arranged to operate the gear wheels, and clutch mechanism for alternately locking the gear wheels to the propeller shaft, substantially as set forth. 4th. The combination, with a shaft having a pair of wheels loosely mounted thereon, said wheels formed with recessed outer faces, and having circular rims or flanges, of a double cam loosely mounted on the shaft which supports the wheels, a lever, and rollers journalled on the lever at points between the cam and circular rim, and means for holding the lever in position, substantially as set forth. 5th. The combination, with a shaft, sets of paddle blades secured to the shaft so that their outer ends incline outward, and a pair of gear wheels loosely mounted on the shaft, of double cams keyed on the shaft, a lever loosely mounted on the shaft and carrying friction rollers adapted to act as wedges to clutch the cams to the gear wheels, spring devices for holding the lever in position, and a double rack bar having its teeth meshed with the teeth of the wheels, whereby the latter are operated by the reciprocations of the rack bar, substantially as set forth. 6th. The combination, with a suitable support, and a shaft journalled in the support, and having paddle blades on its outer ends, of a pair of gear wheels loosely mounted on the shaft at its centre, means for clutching said wheels to the shaft alternately, and double rack bars for driving the wheels, substantially as set forth. 7th. The combination, with a suitable support, a housing secured to the support, said housing having journal boxes therein, and a shaft revolubly supported in the boxes, of gear wheels loosely mounted on the shaft, clutch mechanism, and double rack bars for driving the wheels, substantially as set forth. 8th. The combination, with the pivotally supported cylinder, a U-shaped bracket secured thereto a sectional housing, the ends of which terminate in suitable journal boxes, and a shaft journalled in these boxes, said shaft carrying outwardly inclining blades on each end, of gear wheels loosely mounted on the shaft, clutch mechanism for locking them to the shaft, a piston rod, double rack bars, a guide flange thereon, and means for reversing the shaft and for raising and lowering the propellers, and swinging them laterally, substantially as set forth.

No. 41,875. Apparatus for Raising and Moving Material. (*Monte et porte-charge.*)

Howard A. Carson, Malden, William H. Bradley, Brookline, Frank L. Smith, Salem, and Ernest W. Bowditch, Boston, assignees of Joseph N. Drew, Malden, all of Massachusetts, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In an apparatus for raising and moving material, a track consisting of two channel iron beams supported at suitable intervals by hangers secured between said channel iron beams and carried by cross beams, whereby the lower flanges of said channel iron beams form the track for the travellers to run upon, substantially as set forth. 2nd. In an apparatus for raising and moving material, a track consisting of two channel iron beams supported from overhead cross beams carried by suitable framework, in combination with a train of carriages suspended from and adapted to travel upon the lower flanges of said channel iron beams, substantially as set forth. 3rd. In an apparatus for moving and raising material, a track consisting of two channel iron beams supported from overhead cross beams, in combination with a traveller having running

wheels L, adapted to be suspended from and travel upon the lower flanges of said channel iron beams, said traveller having anti-friction wheels M, arranged on a line with the edges of said lower flanges of said track, substantially as and for the purpose set forth. 4th. In an apparatus for raising and moving material, the combination of a track consisting of two channel iron beams supported at intervals by hangers secured to cross beams on a movable frame with a train of travellers adapted to run upon the lower flanges of said channel iron beams, and having running and anti-friction wheels, said travellers being connected one to another by a rod or tension member, all arranged and operated substantially as set forth. 5th. In an apparatus for raising and moving material, the counter buffer S, in combination with a track, consisting of two channel iron beams, said buffer being mounted on a metal frame secured on the top of said track, substantially as set forth. 6th. In an apparatus for raising and moving material, a track consisting of two channel iron beams I, connected together at their ends by bolts or rivets r, bolts g^5, having hooked ends for passing under said rivets, the plate H, through which the upper ends of the bolts pass, nuts for securing the same, the plate s, interposed between the channel iron beams and between the hooks, and bolts or rivets r^1, for retaining said plate s, in place, substantially as and for the purposes set forth.

No. 41,876. Machine for Making Grids for Secondary Batteries. (*Machine pour faire des plaques à claire voie pour piles secondaires.*)

Albert Franklin Madden, Newark, New Jersey, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In a machine of the character described, the combination, with a suitable form and means for moving the same, of a chamber for molten metal adjacent to said form, and a roller adapted to force said metal into the form, substantially as described. 2nd. The combination, with the chamber adapted to contain metal, and having means for applying heat thereto, of a sliding form, and a roller journalled in the path of the form and impinging its upper surface, substantially as described. 3rd. The combination, with the reciprocating carriage and the form arranged therein, of the metal chamber, means for heating it, and a roller journalled in said chamber with its lower surface in the same plane with the top of the form, substantially as described. 4th. The combination, with the reciprocating carriage having a form, of the chamber, means for heating the same, the roller for pressing the metal into the form, and a surfacing tool behind the roller, substantially as described. 5th. The method of forming grids for secondary batteries and similar articles, which consists in exposing a form to a body of pasty or partially fluid metal, and then compressing said metal into the form, substantially as described. 6th. The method of forming grids for secondary batteries, which consists in exposing a properly shaped form to a body of wholly or partially fluid metal, and then rolling said metal into the form, substantially as described 7th. In a machine of the character described, the combination with the movable form, of the lead containing chamber across which the form passes, the heater arranged within said chamber, and burners connected with said heater, substantially as described. 8th. The combination with the form, of the crucible, the chamber, a connection between said crucible and the chamber, and the tubular heater seated in said chamber and provided with burners, said heater having its open end contiguous to the bottom of the crucible. 9th. The combination with the form and the chamber, of the heater seated in said chamber, and consisting of two or more separate inlets provided with burners, and one or more outlets, and a crucible arranged above said outlet, substantially as described. 10th. The combination with the form, of the open bottomed lead chamber, the heater provided with burners and seated in said chamber, a roller also seated in said chamber, means for operating said roller, and mechanism for the reciprocation of the form. 11th. In a machine of the character described, the lead containing chamber, and a roller seated in said chamber, in combination with the form consisting of the stationary bars, movable parts arranged between said bars, means for moving the form bodily relative to the lead chamber, and additional means for actuating the movable parts of the form, substantially as described. 12th. In a machine of the character described, a form consisting of a series of fixed bars provided with transverse notches or slots, in combination with a series of ejector plates seated between the fixed bars, and transverse strips passing through the ejector plates and the fixed bars, and movable with said ejector plates, substantially as described. 13th. In a machine of the character described, the combination with a series of fixed bars, of ejector plates set and adapted to operate between said bars, and transverse ejector strips carried by the ejector plates and intersecting the fixed bars at right angles to their length, substantially as described. 14th. The combination with the bars 31, having transverse slots 33, provided with the enlarged portions 34, the notched ejector plates 35, and the partition strips 39 seated in and carried by the ejector plates, and passing through and movable relative to the fixed bars, substantially as described. 15th. In a machine of the character described, the combination with the fixed bars, of a series of ejector plates between and parallel with said bars, and transverse ejectors at right angles to the length of said bars and secured to and carried by the ejector plates, substantially as and for the purpose set forth.

No. 41,877. Method of and Apparatus for Manufacturing Ice Cream, etc. (*Méthode et appareil pour faire la crème à la glace, etc.*)

Jay Baker, Kansas, Missouri, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. An improved method for manufacturing ice cream, water ices, frozen custards, and similar preparations, consisting in applying the liquid preparation, while in constant motion, to a moving external surface, the said surface being charged internally with a suitable cold producing substance, substantially as set forth. 2nd. An improved method of manufacturing ice cream, water ices, frozen custards, and similar preparations, consisting in applying the liquid preparation while in constant motion, to an external moving surface, and constantly cutting and removing from said surface the frozen film thus produced, substantially as set forth. 3rd. An improved apparatus for manufacturing ice cream, water ices, frozen custards and similar preparations, comprising one or more revoluble receptacles for cold producing material, a corresponding number of knives operating by contact with the external surfaces of the freezing receptacles for the liquid preparation, and pipes or tubes for conveying the liquid preparation from the feeding receptacles, and discharging it upon the external surfaces of the freezing receptacles, substantially as set forth. 4th. An improved apparatus for manufacturing ice cream, etc., comprising a suitable casing or housing, one or more revoluble freezing receptacles mounted therein, a corresponding number of knives operating by contact with the exterior of said freezing receptacles, a corresponding number of liquid feeding receptacles also mounted in said casing above the freezing receptacles, and feeding tubes for conveying the liquid preparation from the feeding receptacles, substantially as set forth. 5th. An improved apparatus for manufacturing ice cream, etc., comprising a suitable casing or housing, one or more revoluble freezing receptacles mounted therein, a corresponding number of knives operating by contact with the exterior of said receptacles, a corresponding number or rocking feed receptacles for the liquid preparation, mounted upon a separate rock shaft, and feeding tubes for conveying the liquid preparation from the feeding receptacles to the interior of the freezing receptacles, substantially as set forth. 6th. An improved apparatus for manufacturing ice cream, etc., comprising a suitable casing or housing having in its upper portion a receptacle for cold producing substance, a number of hollow revoluble freezing receptacles and a conduit communicating at one end with the receptacles for cold producing material, and at the opposite end with the interiors of said receptacles, substantially as set forth. 7th. An improved apparatus for manufacturing ice cream, etc. comprising one or more revoluble freezing receptacles, and a pan or partition located beneath the said receptacles and having a corresponding number of depressions or other cavities located each beneath one of the receptacles, substantially as set forth. 8th. An improved apparatus for manufacturing ice cream; etc., comprising a number of revoluble freezing receptacles, and a number of spring pressed yielding knives, operating by contact with the external surface of said receptacles, substantially as set forth. 9th. An improved apparatus for manufacturing ice cream, etc., comprising a revoluble feeding receptacle for liquid having a filling and an outlet aperture in longitudinal alignment at one of its sides, an outlet aperture located opposite from said filling and discharge apertures, and an external semi-circular channel extending transversely of the feeding receptacle, and terminating at a point in alignment with the filling and discharging apertures, substantially as set forth. 10th. An improved apparatus for manufacturing ice cream, etc., comprising a revoluble freezing receptacle of double frustro conical form, substantially as set forth. 11th. An improved apparatus for manufacturing ice cream, etc., comprising a revoluble freezing receptacle of double frustro conical form and provided with one or more internal cup shaped stirrers, substantially as set forth. 12th. An improved apparatus for manufacturing ice cream, etc., comprising a knife, a straight supporting frame having curved and angular ends connected to the ends of said knife, substantially as set forth. 13th. An improved apparatus for manufacturing ice cream, etc., comprising a knife having a straight supporting frame provided with outward curved and angular ends connected to the extremities of the knife, and a directing frame connected at its upper edge to the frame and beneath the knife, substantially as set forth. 14th. An improved apparatus for manufacturing ice cream, etc., comprising one or more revoluble freezing receptacles, a gear pinion connected to one end of the receptacle, and a gear pinion having a sleeve embracing a fixed rod of the machine and meshing with said gear wheel, substantially as set forth. 15th. An improved apparatus for manufacturing ice cream, water ices, frozen custards, etc., comprising a suitable receptacle for cold producing material, one or more hollow removable freezing receptacles, a conduit connected to the outlet of the first named receptacle, a bend connected to the conduit and also to the hub of the freezing receptacle, a lubricating cup connected to the bearing of the said hub, a drain outlet connected to the bend, and a plate connected to the inner surface of the bend and overlaying the drain opening thereof, substantially as set forth. 16th. An improved apparatus for manufacturing ice cream, water ices, frozen custard, etc., comprising a receptacle for broken ice, a removable hollow freezing receptacle, a conduit connected to the outlet of the freezing receptacle, and a bend connected to the conduit and to the hub of the freezing receptacle, and a wire meshing secured in the top of the receptacle for ice and serving to

grade the latter, substantially as set forth. 17th. An improved apparatus for manufacturing ice cream, water ice, frozen custard, etc., comprising a suitable receptacle for cold producing material, one or more revoluble freezing receptacles, a conduit connected to the receptacle for cold producing material, a bend connected to said hub, and a hollow ring for containing a cold resisting fluid located within the hub and in contact with its inner surfaces, substantially as set forth.

No. 41,878. Automatic Determining Device for Phonographs. (*Appareil automatique déterminatif pour phonographes.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In a phonograph, the combination, with the recording or reproducing frame movable toward and away from the phonogram surface, a guide rest, and an adjustable presser foot supporting the said frame from the guide rest, of a determining point carried by said frame and making contact with the phonogram surface, and a lock locking the spectacle frame, operated directly by the movement of the determining point after it touches the phonogram surface, substantially as set forth. 2nd. In a phonograph, the combination, with the recording or reproducing frame movable toward and away from the phonogram surface, a guide rest, and an adjustable presser foot supporting the said frame from the guide rest, of a pivoted lever carrying a determining point, said determining point making contact with the phonogram surface, and a lock locking the spectacle frame, operated directly by the movement of the determining point after it touches the phonogram surface, substantially as set forth. 3rd. In a phonograph, the combination, with the recording or reproducing frame movable toward and away from the phonogram surface, a guide rest, and an adjustable presser foot supporting the said frame from the guide rest, of a determining point carried by said frame and making contact with the phonogram surface, a lock locking the spectacle frame, operated directly by the movement of the determining point after it touches the phonogram surface, a movable determining point carried by said frame and making contact with the phonogram surface, a direct lock locking the spectacle frame, and a variable connection between the locking parts, whereby the desermining point is enabled to ride lightly on the phonogram blank, substantially as specified. 4th. In a phonograph, the combination, with the recorder or reproducer frame movable toward and away from the phonogram surface, a guide rest, and an adjustable presser foot supporting the said frame from the guide rest, of a determining point mounted on a pivoted lever, and a lock comprising a bar of the presser foot, and a piece actuated by the lever bearing the determining point, substantially as set forth. 5th. In a phonograph, the combination, with a movable frame and guide rest, of a lock for locking said movable frame, comprising a bar and a piece movable toward and from said bar actuated by the contact of a movable determining point with the phonogram, whereby the determining point is enabled to ride lightly on the phonogram blank, substantially as set forth. 6th. In a phonogram, the combination, with a movable frame and guide rest, of a lock for locking said movable frame, comprising two bars screws threaded and cut with relation to each other half a thread out, and a movable piece engaging with one or the other of said bars, actuated directly by the contact of the determining point with the phonogram blank, substantially as speciffed. 7th. In a phonogram, the combination, with a movable frame and guide rest, of a lock for locking said movable frame, comprising two bars, screw threaded and set with relation to each other half a thread out, and a movable piece engaging with one or the other of said bars, actuated directly by the contact of the determining point with the phonogram blank, and having a spring whereby a slight up and down play is given to said movable piece, substantially as and for the purpose set forth.

No. 41,879. Method and Apparatus for Producing Chlorine in Liquid Form. (*Méthode et appareil pour la production du chlore à l'état liquide.*)

Elisha B. Cutten, New York, State of New York, U.S.A., 8th February, 1893; 18 years.

Claim.—1st. The method of producing liquefied chlorine, which consists in first electrolyzing chloride of sodium in a closed vessel and mechanically removing the chlorine gas generated, second, passing said gas through a dehydrating apparatus whereby substantially all of its moisture is abstracted, and third, liquefying the direct gas by the agency of pressure and low temperature. 2nd. The apparatus for producing liquefied chlorine substantially as hereinbefore described, consisting in a closed electrolytic cell, a means, such as a pump, for exhausting the generated chlorine from said cell, dehydrating apparatus through which said chlorine is forced, and a liquefying tank containing means for refrigeration, in which tank, by the action of said pump and by the refrigeration, said chlorine is reduced to liquid form.

No. 41,880. Stop Fastener for Windows. (*Arrête-fermeture de croisée.*)

Oscar B. White, St. John, New Brunswick, Canada, 8th February, 1893; 18 years.

Claim.—The combination, of a strip having an elongated slot therein and a spring abutment secured to said plate and crossing the slot, of a second plate having a tongue thereon adapted to receive the spring when the two plates are forced together, making an automatically adjustable window stop, substantially as set forth,

No. 41,881. Conduit for Electric Railways. (*Conduit pour chemins de fer électriques.*)

Charles Dibble Comstock Huestis, assignee of William Bradley, both of Fort Wayne, Indiana, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In a conduit for electric railways, the combination of a box or pipe, with the plate A, forming the upper side *a*, the lower part *b*, forming with said upper side a slot *s*, a slot extending from the roadway or track down to or below the bottom of the box or pipe, one side of said box or pipe forming part of one side of said slot, the same being adapted to permit the operation of a supporting arm of a contact device, and also adapted to confine within the slot the passage of water and other substances which may enter it, and conduct such passage outside the box directly into the drain, a drain placed below the bottom of said box and directly beneath said slot, and communicating with it, adapted to carry off the water which may pass into it, standard C, adapted to support the trolley wire or conductor, flanges provided with longitudinal slotted holes and attached by bolts to said standards and adapted to permit a lineal movement, and a conductor or trolley wire attached to said flange. 2nd. In a conduit for electric railways, the combination of a box or pipe constructed with a longitudinal side entrance or slot for the supporting arm, of a contact device to pass through and be operated, said side entrance being formed by the upper part or vertical plate of one side of the box, projecting laterally over the lower part of the same side, a slot extending from the roadway down to or below the bottom of the box or pipe, one side of said box or pipe forming part of one side of said slot, the same being adapted to permit the operation of a supporting arm of a contact device, and also adapted to confine within the slot the passage of water and other substances which may enter it and conduct such passage outside the box directly into the drain, a drain placed below the bottom of said box and directly beneath said slot, communicating with it, adapted to carry off the water, which may pass into it, a trolley wire or conductor supported within said box and adapted to permit the passage of a trolley wheel or contact device, upon or in contact with it. 3rd. In a conduit for electric railways, the combination of a box or pipe provided with a longitudinal slot, with a slot extending from the roadway or track to or below the bottom of the box or pipe, one side of said box or pipe forming part of one side of said slot, the same being adapted to permit the operation of a supporting arm of a contact device, also adapted to confine within the slot the water and other substances which may enter it, and conduct such substances outside the box, and a drain placed beneath said slot communicating with it. 4th. In a conduit for electric railways, a box or pipe constructed in two or more sections secured together, and having a projection of the upper part over the lower part of the box or pipe adapted to form a side slot for the trolley lever to pass through and be operated, substantially as described.

No. 41,882. Milking Machine. (*Appareil pour traire les vaches.*)

James Calvin McCollum and William Warren Murphy, both of Los Angeles, California, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. A milking machine consisting essentially of the combination of series of teat engaging rollers, and suitable mechanism arranged to operate such rollers, to bring pairs of rollers together successively and move them along for a distance in parallel lines, whereby the cow's teat is successively engaged by such pairs of rollers to force the milk down and out at the nipple. 2nd. A milking machine consisting essentially of the combination of a series of endless belts, provided respectively with a series of teat engaging rollers, and arranged oppositely in pairs upon suitable rollers arranged to rotate the driving belt, such rollers and means for rotating the rollers. 3rd. In a milking machine, the combination of two endless belts provided with teat engaging rollers and arranged for rotation, substantially as and for the purpose set forth. 4th. The combination of the series of belt carrying rollers, the train of cogs connecting the driving rollers, the endless belts mounted upon such rollers, and arranged in pairs and provided with the series of teat engaging rollers, and means for rotating the driving rollers. 5th. In a milking machine, provided with teat engaging rollers arranged to operate in pairs, as set forth, the collapsable tubes arranged between such rollers. 6th. The combination of the endless belts arranged in pairs and provided with teat engaging rollers, the belt driving rollers, the adjustable belt carrying rollers, and springs arranged to press the belt carrying rollers to close the space between the belts. 7th. The combination of the endless belts arranged in pairs, and provided with the teat engaging rollers, the belt driving

rollers, the adjustable belt carrying rollers, having their arbors mounted in the movable journal pieces, such journal pieces, and springs arranged to press against the journal pieces to press the belt carrying rollers to close the space between the belts.

No. 41,883. Fastener for Neckties. (*Agrafe de cravate.*)

Walter M. Bragger, assignee of Frederic R. Scofield, both of Penfield, Pennsylvania, U.S.A., 8th February, 1893; 6 years.

Claim.—The controller constructed with an intermediate arch shaped loop, a hook n^1, an upturned hook n, and a downturned hook m at each end, hooks m and n^1, being constructed to form inclosed spaces, and the ends of the hooks n, being laterally deflected from said hooks m, in order to admit entrance into the spaces in rear of said hooks, substantially as described.

No. 41,884. Horse Shoe. (*Fer à cheval.*)

James McHarrie, Stranraer, Wigtown, and Alexander Murdoch, Anchenflower, Ayr, all of Scotland, 8th February, 1893; 6 years.

Claim.—1st. A horse shoe made with nail holes b, which are tapered vertically and are cut away at the outside so as to allow the hoof to expand, and thereby produce a natural and healthy action when running. 2nd. A horse shoe made with nail holes b, which are tapered both vertically and horizontally, and are cut away at the outside so as to allow the hoof to expand, and thereby produce a natural and healthy action when running.

No. 41,885. Fire Escape. (*Sauveteur d'incendie.*)

Deunbord Beaudry and Ernest Mireau, Montreal, Quebec, Canada, 8th February, 1893; 6 years.

Resumé—1°. La poulie A, la bande B, les flasques F, F, et le fil en acier tressé a, en combinaison avec la poignée spéciale H, H^1, 2°. La poignée spéciale H, H^1, avec les rainures t, t, t^1, t^1, et les bourrelets r, r, r, r, le tout tel que spécifié et pour les raisons et dans le but y désignés.

No. 41,886. Furnace Grate. (*Grille de foyer.*)

William H. Heeson, Baltimore, Maryland, U. S. A., 8th February, 1893; 5 years.

Claim.—1st. A grate bar formed with a double central web, composed of two single webs forming the longitudinal vertical air space between them, having the lateral series of wings or ribs on their outsides, as shown and described. 2nd. The herein described grate bar, formed with the double central web forming the longitudinal vertical air space in its centre,, and having the series of alternating ribs on each side, having their outer ends connected by the longitudinal ribs, substantially as set forth and shown. 3rd. The herein described grate bar, formed with the end trunnions and the double central web forming the longitudinal vertical air space in its centre, and having the series of alternating ribs on each side, having their outer ends connected by the longitudinal ribs, substantially as set forth. 4th. The combination, with the furnace formed with the end bearings and having the central partition formed with the semi-circular bearings and the intermediate spaces, of the grate bar formed each with the end trunnion, the double central web forming the longitudinal vertical air space, having the series of alternating ribs on each side, and having the central trunnion formed at the bottom of its central web, substantially as set forth. 5th. The combination, with the furnace formed with end bearings, and having the central partition formed with the semi-circular bearings and the intermediate recesses, of the grate bars formed each with the end trunnions, the double central web forming the longitudinal vertical air space having the series of alternating ribs on each side connected at their ends by the longitudinal ribs, having the central trunnions formed at the bottom of its central web, and formed at each of its ends with the pair of perforated lips, the connecting bar and means for rocking one of the said bars substantially as set forth. 6th. In a grate bar, the combination of a central longitudinal web, a series of laterally extending wings or ribs projecting from each side of the longitudinal web, and a longitudinal bar connecting together the outer ends of the laterally extending ribs, substantially as set forth. 7th. In a grate bar, the combination of a central longitudinal web pivoted at both ends, a series of laterally extending ribs arranged on either side of the central longitudinal web, a bar connecting together the outer ends of the laterally extending ribs at either side of the said longitudinal web, said laterally extending ribs having their upper edges cut off slantingly in combination with means for rocking the said bar. 8th. In a grate bar, the combination of a central longitudinal web, a series of laterally extending ribs arranged on either side of the central longitudinal web, the inner ends of the said ribs being connected to the said web, said ribs forming vertical air spaces between them, a bar connecting together the outer ends of the said ribs, a connecting bar hinged to the lower edges of the grate bars and a lever for rocking said bars, substantially as set forth.

No. 41,887. Gymnastic Apparatus for Schools.
(*Appareil gymnastic pour les écoles.*)

Theodore Bessing and Archibald C. Way, both of Los Angeles, California, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. The combination of a series of school desks, arranged in pairs in parallel rows, a series of combined short band, chest and parallel bars arranged respectively upon the ends of such desks, and means for securing such bars to the desks in such a manner as to adapt them for convenient use as gymnastic apparatus and yet not unfit the desks for their ordinary use as school room furniture. 2nd. The combination of the desk frame, the arm provided with the bar and pivoted at its lower end to the desk frame, and suitable means for holding the arm rigid when in its elevated position. 3rd. The combination of the slotted arm provided with the bar, the bracket, the bolt fixed to such bracket and arranged through the slot in such arm, and suitable means for holding the arm rigid when in its elevated position. 4th. The combination of the slotted arm provided with the bar and with the bracket hook, the bracket, the bolt q, fixed to such bracket, and arranged to pass through the slot in such arm, and the bolt q^1, fixed to such bracket, and adapted to receive and retain the hook of the arm to hold the arm rigid in its elevated position.

No. 41,888. Machine for Printing Oil Cloth.
(*Machine pour imprimer les toiles cirées.*)

George Frederick Eisenhardt and Herman Dienelt, both of Philadelphia, Pennsylvania, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. The combination, in an oil cloth printing press, of a series of troughs, devices for reciprocating the troughs, a fluid governor connected with said devices, and means for relieving the governor of pressure when the troughs reach the limit of their movement in either direction, substantially as set forth. 2nd. The combination, with the reciprocating troughs and operating devices of an oil cloth printing machine, of a fluid governor comprising a cylinder and piston and means for relieving the same of pressure when the troughs reach the limit of their position in either direction, substantially as set forth. 3rd. The combination with the reciprocating troughs and operating devices, of a fluid governor consisting of a cylinder, piston and piston rod connected to a reciprocating part of the machine, inlet openings and valves at the opposite ends of the cylinder, outlet openings and valves at the opposite ends of the cylinder, springs bearing upon said outlet valves, and means for opening the valves as the piston reaches the limit of its movement in either direction, substantially as set forth. 4th. The combination, of reciprocating troughs and operating devices, cylinder provided with a piston connected with part of the operating devices, and having inlet and outlet openings and valves, springs bearing against the outlet valves and means for compressing the springs, and stems projecting from the outlet valves in position to be struck by the piston, substantially as set forth. 5th. The combination, with the reciprocating troughs and operating parts, of an oscillating cylinder having a piston connected with one of the reciprocating parts of the machine, inlet ports and valves, outlet ports and valves, and springs for varying the pressure upon the outlet valve, substantially as set forth. 6th. The combination, of the troughs, the ratchet wheel and pawl, and connections for moving the troughs, shafts 102 and 116, a band pulley on the shaft 102, and gears between the latter shaft and the ratchet wheel, a band adapted to said pulley and carried by a lever, and a cam on the shaft 116 operating upon the free end of the lever to reciprocate the same, substantially as set forth. 7th. The combination, with the devices for reciprocating the trough, of a band wheel, a lever composed of two parallel connected bars, and provided with a band arranged to bear upon said wheel, and a shaft provided with a cam arranged to operate the outer end of said lever, substantially as set forth. 8th. The combination, of the paint trough, roller and its journal, of a sleeve surrounding the journal, and means for moving the sleeve longitudinally to bring its inner end into contact with the end of the roller, substantially as set forth. 9th. The combination, of the trough, roller, journal, packing at the end of the roller, and sleeve surrounding the journal, and means for bringing the sleeve against said packing, substantially as set forth. 10th. The combination, of the trough, roller, journal, sleeve surrounding the journal, packing opposite the end of the sleeve, and a screw nut at the outer end of the sleeve, arranged to bear against a bearing upon the trough, substantially as set forth.

No. 41,889. Cash Carrier. (*Chien de magasin.*)

Smith Tucker, Robert F. Shannon, Clement J. Weber and James D. Robertson, all of Medina, New York, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In a cash or parcel carrier apparatus, the combination, of a carrier provided with a tube, and a propelling spring located therein, a horizontal track wire, plunger rod k, an operating lever provided with a bevelled lug r, said plunger rod passing through a slot in the said lever, a collar for limiting the stroke of the said plunger rod, a spring for returning the plunger rod, a spring retaining latch h, having its rear end bevelled, and provided at its forward end with a hold to engage the car, substantially as set forth. 2nd. In a cash and parcel carrier, the combination, with means for compressing a spring by a plunger rod, and retaining the carriage until the spring is compressed, of the carriage A, containing a tube e, the spiral spring f, the discs D, having concave outer surfaces 6, and raised central portion 7, the ends of the tube having apertures 8, and projections 9, substantially as set forth. 3rd. In a cash and parcel carrier, the combination, of a horizontal track wire, a car adapted to move thereon, a tube with a projecting spring located therein, actuated by the plunger rod K, attached to the lever I in pressing it forward, substantially as set forth. 4th. In a cash and

parcel carrier, the combination, of a car adapted to run on a horizontal track wire, having a propelling spring located in a tube on said car, and a catch located in the end of said car, interlocking into a catch in front of the station mechanism at the end of the track wire for holding the car while the spring is being compressed, substantially as described. 5th. In a cash and parcel carrier, the combination, of a car, with a propelling spring located therein upon a horizontal track wire, provided at each end of track wire with an operating lever I, to which is attached the plunger rod K, and the bevelled lug V, for tripping the latch *h*, in the forward movement of the lever I, to compress the spring *f*, in tube *e*, substantially as set forth. 6th. In a cash and parcel carrier, the combination, of a car with a propelling spring in a tube located in said car upon a horizontal track wire, provided with an operating lever I, to which is attached the plunger rod K, said plunger rod centers the discs D, in the forward movement of the lever I, to compress the spring *f*, in tube *e*, thus sending the car the distance required by the tension that is put upon the plunger rod, substantially as set forth.

No. 41,890. Churn. (*Baratte.*)

Hugh M. Cooper, Osgood, Missouri, U.S.A., 8th February, 1893; 6 years.

Claim.—As an improvement in churns, the combination of the lid resting on the churn body, the frame B, rising from the lid, the hollow shaft journalled in the lid, and extending into the churn body and provided with a pinion on its upper end, the solid shaft passing through the hollow shaft, journalled in the frame B, and having a pinion on its upper end, the spring arranged around said shaft and bearing upon the pinion thereon, the driving shaft mounted on the frame B, and having a driving wheel at its inner end meshing with the pinions on the hollow and solid shafts, and the horizontal frame U, secured to the frame B, and surrounding the driving wheel, as specified.

No. 41,891. Magnetic Separator.

(*Séparateur magnétique.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In a magnetic separator, the combination of a water chamber into which the material to be separated is introduced, and magnets inclosed in a drum moving in and out of said water chamber, whereby the magnetic material is removed therefrom, substantially as set forth. 2nd. In a magnetic separator, the combination of the water chamber into which the material to be separated is introduced, and the revolving wheel comprising a drum, and inclosed magnets partially submerged in said chamber, substantially as set forth. 3rd. In a magnetic separator, the combination, with the water chamber and the revolving magnet wheel, of the commutator for breaking the circuit of the magnets at intervals, substantially as set forth. 4th. In a magnetic separator, the combination, with a water chamber, of a magnetic wheel revolving therein, and a circuit controller for de-energizing the upper magnets, whereby the material may be readily removed, substantially as set forth. 5th. In a magnetic separator, the combination, with the water chamber, of the revolving magnet wheel, a circuit controller for the magnets, and a stationary scraper adjacent to the periphery of the wheel for removing the magnetic material from said wheel, substantially as set forth. 6th. In a magnetic separator, the combination, with the water chamber, of the revolving magnet wheel having a continuous periphery, the scraper for removing the magnetic material from said wheel, and the conveying chute, substantially as set forth. 7th. In a magnetic separator, the combination, with the water tank and the magnets therein, of an elevated hopper and the water pipe for discharging water upon the material falling from said hopper, substantially as set forth. 8th. In a magnetic separator, the combination of the water chamber, the magnets moving in and out of such chamber, and the commutator for breaking circuit of magnets when outside the chamber, substantially as set forth. 9th. In a magnetic separator, the combination of the water chamber, the revolving magnet wheel, a commutator for breaking circuit of magnets outside the chamber, and means for removing the magnetic material from the wheel, substantially as set forth.

No. 41,892. Harrow. (*Herse.*)

Joseph Drader, London, Ontario, Canada, 8th February, 1893; 6 years.

Claim.—1st. In a spade harrow, an outer frame pivoted to the frame fixed to the tongue of the machine, in combination with a rod fixed at one end to a hand lever pivoted on the tongue and extending diagonally to the outer frame to which it is connected, substantially as and for the purpose specified. 2nd. A spade harrow, composed of a series of straight blades held at an angle to and projecting from the periphery of a cylinder journalled in the harrow frame, substantially as and for the purpose specified. 3rd. In a spade harrow, an axle supported in suitable journals in the adjustable outer frame and having connected to it a cylinder composed of a series of sections, means being provided between each section to hold a series of spades, all projecting the same distance from the periphery of the cylinder, substantially as and for the purpose specified. 4th. The combination, with a spade harrow of a series of revolving blades carried on a shaft in proximity to the spades of the harrow, substantially as and for the purpose specified. 5th. In a spade harrow, an axle supported in suitable journals in the adjustable outer frame, and having connected to it a cylinder composed of a series of sections, means being provided between each section to hold a series of spades all projecting the same distance from the periphery of the cylinder, in combination with a series of blades fixed to a spindle suitably journalled in the adjustable frame and caused to revolve by the motion of the spade axle, substantially as and for the purpose specified. 6th. In a spade harrow, a series of sections *d*, fixed to the axle G, and forming a cylinder J, a series of spades K, each fitting into a recess formed in and between the sections *d*, a hub L, being formed between each section against which the spades K butt, substantially as and for the purpose specified. 7th. In a spade harrow, a spade K, curved edgewise, substantially as and for the purpose specified. 8th A cylindrical roller J, journalled in a suitable frame and having a series of spades K, projecting from its periphery, substantially as and for the purpose specified.

No. 41,893. Apparatus for Working Metals by Electricity. (*Appareil pour travailler les métaux par l'électricité.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. In an apparatus for electric welding and metal working, a continuous electric heating conductor adapted to inclose the work to which it is applied, and clasps to hold the work stationary on both sides of the heating conductor. 2nd. In an apparatus for electric welding and metal working, a continuous separable electric heating conductor adapted to inclose the work to which it is applied. 3rd. In an apparatus for electric welding and metal working, a continuous electric heating conductor adapted to inclose the work to which it is applied, and a covering or envelope of a refractory or non-heat conducting material inclosing both the work and the conductor. 4th. In an apparatus for electric welding and metal working, a continuous electric heating conductor arranged to envelope or surround the work to which it is applied, and clamps to hold the work stationary while being heated. 5th. In an apparatus for electric welding and metal working, a continuous electric heating conductor adapted to inclose the work, and provided with a lining of semi-conducting material. 6th. In an apparatus for electric welding and metal working, a continuous electric heating conductor adapted to inclose the work, and provided with a lining of carbon. 7th. In an apparatus for electric welding and metal working, a continuous electric heating conductor arranged to inclose the work, and supported independently of the latter, and connected in circuit with a suitable source of electricity. 8th. In an apparatus for electric welding and metal working, a continuous electric heating conductor arranged to inclose the work, and connected in circuit with a suitable source of electricity, and means to move the work independently of the heating conductor. 9th. In an apparatus for electric welding and metal working, a continuous electric heating conductor to envelope or surround the work to which it is applied, and clamps to hold the work stationary while being heated, and means to move one of said clamps, as described. 10th. In an apparatus for electric welding and metal working, a continuous electric heating conductor arranged to envelope or surround the work to which it is applied, means to hold the work stationary while being heated, and means for exerting a regulable movement of the work. 11th. In an apparatus for electric welding and metal working, a continuous electric heating conductor arranged to inclose the work, and connected in circuit with a suitable source of electricity, and adapted to be moved and applied to different parts of the work, as described. 12th. In an apparatus for electric welding and metal working, a continuous electric heating conductor adapted to inclose the work, and provided with a lining of powdered or granulated semi-conducting material.

No. 41,894. Power Transmitting Device.

(*Appareil de transmission de la force.*)

Edward H. Johnson, New York City, New York, U.S.A., 8th February, 1893; 6 years.

Claim.—1st. The combination of a driving shaft, a driven shaft, a frictional connecting device for transmitting motion between said shafts, and an elastic determining device, determining the frictional engagement, substantially as set forth. 2nd. The combination of a driving shaft, a driven shaft, an intermediate part in connection with one of said shafts and adapted to be brought into frictional connection with the other, and an elastic determining device, determining the frictional engagement, substantially as set forth. 3rd. The combination of a driving shaft, a driven shaft, an intermediate part connected with one of said shafts and movable along the other to a point at which it engages therewith, and an elastic determining device, determining the point of engagement, substantially as set forth. 4th. The combination of a driving shaft, a driven shaft, an intermediate part in frictional connection with each of said shafts, said intermediate parts being in direct engagement with each other and an elastic determining device for each shaft, determining the frictional engagement therewith, substantially as set forth 5th. The combination of a driving shaft, a driven shaft, an intermediate part movable along each shaft to a point

at which it engages therewith, said parts being in direct engagement with each other, and an elastic determining device on each shaft, determining the point of engagement therewith, substantially as set forth. 6th. The combination of a driving shaft, a driven shaft, one of said shafts having a screw thread, a movable body threaded on the threaded shaft and connected with the other shaft, and an elastic cushion opposing the travel of said body on the shaft, substantially as set forth. 7th. The combination of a driving shaft, a driven shaft, one of said shafts having a screw thread, a movable body threaded on the threaded shaft and connected with the other shaft, and an elastic cushion on each side of said body, opposing its movement in either direction, substantially as set forth. 8th. The combination of the armature shaft of an electric motor, a driven shaft, an intermediate part in connection with one of said shafts and adapted to be brought into frictional connection with the other, and an elastic determining device for determining the frictional engagement, substantially as set forth. 9th. The combination of a driving shaft, a driven shaft, both of said shafts being screw threaded, a movable body threaded on each of said shafts, said bodies being in direct engagement with each other, and an elastic cushion on each shaft opposing the movement of the threaded body thereon, substantially as set forth. 10th. The combination of a driving shaft, a driven shaft having a screw thread, a pinion on the driving shaft, a gear wheel on the driven shaft, a hollow hub for said gear wheel, a nut threaded on the shaft within said hub and engaging with said hub, and an elastic cushion opposing the travel of said nut on the shaft, substantially as set forth. 11th. The combination of a driving shaft, a driven shaft having a screw thread, a pinion on the driving shaft, a gear wheel on the driven shaft, a hollow hub for said gear wheel, a nut threaded on the shaft within said hub and engaging with said hub, and an elastic cushion on each side of said nut opposing the travel of said nut on the shaft, substantially as set forth. 12th. The combination of a driving shaft, a driven shaft, an intermediate part normally disconnected from both shafts and adapted to be brought into frictional connection with the driven shaft when moved by the driving shaft, means for placing said intermediate part in connection with the driving shaft, and an elastic determining device determining the frictional engagement with the driven shaft, substantially as set forth. 13th. The combination of a driving shaft, a driven shaft, an intermediate part normally disconnected from both shafts and adapted to be brought into frictional connection with the driven shaft when moved by the driving shaft, electrically operated means for placing said intermediate part in connection with the driving shaft, and an elastic determining device determining the frictional engagement with the driven shaft, substantially as set forth. 14th. The combination of the armature shaft of an electric motor, a driven shaft, an intermediate part normally disconnected from both shafts and adapted to be brought into frictional connection with the driven shaft when moved by the driving shaft, means for placing said intermediate part in connection with the driving shaft, and an elastic determining device determining the frictional engagement with the driven shaft, substantially as set forth. 15th. The combination of a driving shaft, a screw threaded driven shaft, a nut on the screw thread, means for bringing said nut into engagement with the driving shaft, and an elastic cushion opposing the travel of said nut on the screw thread, substantially as set forth. 16th. The combination of a driving shaft, a screw threaded driven shaft, a nut on the screw thread, a loose disc on the driven shaft engaging with the driving shaft, means for moving said nut into engagement with said disc, and an elastic cushion opposing the travel of said nut on the screw thread, substantially as set forth. 17th. The combination of a driving shaft, a screw threaded driven shaft, a nut placed centrally on the screw thread, a loose disc on the shaft on each side of said nut, respectively, means for moving said nut into engagement with either of said discs opposing the travel of said nut on the shaft in either direction, substantially as set forth. 18th. The combination of a driving shaft, a screw threaded driven shaft, a hollow hub for the gear wheel on the driven shaft, a nut threaded on the shaft within said hub, a loose disc on the shaft keyed to said hub, means for moving said nut into engagement with said disc, and an elastic cushion opposing the travel of said nut on the screw thread, substantially as set forth. 19th. The combination of the armature shaft, an electric motor, a driven shaft, an intermediate connecting device normally out of connection with both shafts and adapted to be brought into frictional connection with the driven shaft when moved by the driving shaft, and means operated by the current supplying the motor for moving said device into engagement with the armature shaft, substantially as set forth. 20th. The combination of the armature shaft, an electric motor, a driven shaft, an intermediate connecting device normally out of connection with both shafts and adapted to be brought into frictional connection with the driven shaft when moved by the driving shaft, an electro-magnetic device energized by the motor current for moving said connecting device into engagement with said armature shaft, and a switch controlling the current to said electro-magnetic device simultaneously with the current to the motor, substantially as set forth. 21st. The combination, with an electric railway motor and the axle which it drives, of an intermediate loose connecting device, and an electro-magnetic apparatus controlled by the motor switch for throwing said device into and out of engagement, substantially as set forth. 22nd. The combination of a driving shaft, a screw threaded driven shaft, a nut on the screw thread, a loose disc on the driven shaft engaging with the driving shaft, means for moving said nut into engagement with said disc, an elastic cushion opposing the travel of said nut on the screw thread, and a spring between said nut and said loose disc, substantially as set forth.

No. 41,895. Stone for Grinding Mills.

(*Meule de moulin.*)

Hubert Cloutier, Hull, Quebec, Canada, 8th February, 1893; 6 years.

Claim.—1st. The combination, with a grinding mill stone, of the oval shaped eye C, *c*, and the chamfer D, substantially as set forth. 2nd. The combination, with a grinding mill stone, of the ring E, curved tangential furrows F, *f*, and radial furrows G, *g*, formed on both sides of the stone, substantially as set forth. 3rd. The combination, with a grinding mill stone having an eye C, *c*, of a shaft H, and collar *i*, closing the eye C, *c*, substantially as set forth.

No. 41,896. Fence. (*Clôture.*)

Joseph Spillinger, Philadelphia, Pennsylvania, U. S. A., 8th February, 1893; 6 years.

Claim.—In a wire fence, the combination, with the post A, post B, block C, and the wires, of a series of rods connecting the post B, and block C, springs coiled on the rods and maintaining the block C at a certain distance from the post B, and the series of individual wire tighteners mounted on the block C, and connected with the wires of the fence, substantially as specified.

No. 41,897. Signal. (*Signal*)

James Henry McCartney, Rochester, New York, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. In a signalling apparatus, the combination, with the conductors extending along a way and including an alarm at a station, an electrical generator, and a series of normally open branch circuits, and switches for closing them located at intervals along the way, of a second branch circuit including said switches, and an alarm apparatus carried along the way, whereby upon closing one of said switches both the stationary and travelling alarms will be sounded, as set forth. 2nd. In a signalling apparatus, the combination, with circuit conductors extending along the way and including an alam at a station, an electrical generator, and switches located in branches at intervals along the way, of a second series of branch circuits each including an alarm apparatus carried along the way, and the switches, substantially as described. 3rd. In a signalling apparatus, the combination, with circuit conductors extending along the way, including an alarm and an electrical generator, and a series of switches located in branches at intervals along the way, of a second series of branch circuits including the switches and generator, and a vehicle travelling on the way having an alarm thereon adapted to be included in any of the second series of branch circuits, substantially as described. 4th. The combination, with the way, a circuit conductor extending along the way, including an alarm and generator, switches located in branches at intervals along the way controlling the circuit, and a second series of branch circuits, including said switches, having contact plates arranged at intervals beside the way, of a motor travelling on the way, having an alarm thereon normally connected with one terminal of the branch circuits, and a contact on the motor arranged to co-operate with the stationary contacts, substantially as described. 5th. The combination, with a way, circuit conductors extending along the way, including a generator, switches located in branches at intervals along the way controlling the circuits. and a second series of branch circuits, including said switches, having contact plates arranged at intervals beside the way, of a vehicle travelling on the way having an alarm thereon, normally connected with one terminal of the branch circuits, and a contact on the vehicle arranged to co-operate with the contact plates, substantially as described.

No. 41,898. Candleabrum. (*Chandelier.*)

Albert Gauthier, assignee of Alphonse Charles McKercher, both of Montreal, Quebec, Canada, 11th February, 1893; 6 years.

Claim.—1st. The combination, of the inner and outer stands A, A and B, with the clamp screw C, as applied to candleabrums, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, of the arms of the parallelograms with the shields D, D, J, M, N, the clamp screws O, the grooves F, the semicircular face wheels E, and the racks R, substantially as and for the purpose hereinbefore set forth.

No. 41899. Apparatus for Vaporizing Liquids.

(*Appareil évaporatoire.*)

The National Salt and Chemical Company, New York city, assignee of Mauricio M. Monsanto, Hoboken, New Jersey, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. An apparatus for vaporizing liquids, constructed substantially as herein shown and described, consisting of outer shell A, open at top and bottom, shell B, closed at top and bottom, having openings or perforations in its sides, and centrally fixed within the shell A, so that an annular chamber is formed between them, liquid discharging and distributing chamber or pipe C^1, with

conduit C attached, conduit B^1 connected with shell B, for introducing air or gases therein, and receiver D set beneath shell A and B, the parts being combined, substantially as herein shown and described. 2nd. In an apparatus for concentrating or evaporating liquids, the combination, with an upright outer shell or cylinder, having an opening at the top and expanded at the bottom, and provided with an interior and concentric, annular liquid distributing chamber or pipe, and a central perforated air distributing cylinder, of a liquid receiver, of a greater diameter than the lower end of said cylinder, fixed axially immediately below the same, substantially as herein shown and described. 3rd. In an apparatus for concentrating or evaporating liquids, the combination, of an upright outer shell or cylinder, expanding toward the bottom, provided with openings for the admission of air or gases, and with an annular interior, liquid distributing chamber or pipe, of an annular baffle plate fixed on or about on a level with said pipe, and of a fan for creating an upward current of air or gases within said cylinder, substantially as and for the purpose set forth. 4th. In an apparatus for concentrating or evaporating liquids, the combination, with the outer shell of an interior, annular liquid distributing pipe, annular baffle plates, and means for creating an upward current of air within the said shell, substantially as set forth.

No. 41,900. Apparatus for Delivering Liquids.

(*Appareil de distribution des liquides.*)

Sylvester Jenkins and William E. Doan, both of Lansdale, and Arthur M. Jenkins, Norristown, all in Pennsylvania, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. The combination of a rotatable frame for supporting a series of receptacles, means to raise and lower said frame, and a stop to intermittently arrest the rotation of said frame. 2nd. The combination of a rotatable frame for supporting a series of receptacles, means to raise and lower said frame, an intermittently operating stop to interrupt the rotation of said frame, and an alarm actuated by said stop. 3rd. The combination of a rotatable frame for supporting a series of receptacles, means to raise and lower said frame, a lock to normally lock said frame against rotation, and means to actuate said lock when the frame is lowered to unlock the frame and permit it to rotate. 4th. The combination of a vessel having a delivery opening or spigot, a rotatable frame, a series of supports carried by said frame successively under said delivery opening or spigot, and means to intermittently arrest the rotation of said frame. 5th. The combination, with a vessel having a delivery opening or spigot, of a series of supports for receptacles, means to rotate said supports to move them in succession under said delivery opening or spigot, and an intermittently operating stop arranged in the path of said supports to arrest them successively under the delivery opening or spigot. 6th. The combination, with a vessel having a delivery opening or spigot, of a series of spring supports for receptacles, means to rotate said supports to move the receptacles in succession under said delivery opening or spigot, and a stop arranged in the path of said supports when in their normal positions, but out of the path of said supports when depressed, whereby each of said supports will be arrested by said stop in passing under the spigot, but when depressed by the weight of the liquid received in the receptacle will be released and free to rotate. 7th. The combination, with the rotatable frame D, of the supports E, carried thereby, and supported by springs J, the fingers L, carried by the supports E, and a stop arranged in the normal path of said fingers L, substantially as and for the purpose described. 8th. The combination, with the rotatable frame D, of the supports E, carried thereby, and supported by springs T, the fingers L, carried by the supports E, and a yielding stop arranged in the normal path of said fingers L, substantially as and for the purpose described. 9th. The combination, with the rotatable frame D, of the supports E, carried thereby, and supported by springs J, the fingers L, carried by supports E, the pivoted stop N, arranged in the normal path of the fingers L, the hammer O, carried by the stop N, and the gong O^1. 10th. The combination, with the rotatable frame D, provided with pins Q, of the supports E, carried by the frame and supported by springs J, the fingers L, carried by the supports E, a pivoted stop N, arranged in the normal path of the fingers L, and the stop P, in the path of the pins Q. 11th. The combination, with the rotatable frame D, provided with the pins Q, of the supports E, carried by the frame and supported by springs J, the fingers L, carried by the supports E, a pivoted stop N, arranged in the normal path of the fingers L, and the curved stop P, in the path of the pins Q, carried by the pivoted stop N, and rotated thereby. 12th. The combination, of a rotable frame provided with a series of pins or projections, a series of supports carried by said rotatable frame upon springs and provided each with a projecting finger, a bracket journalled adjacent to said rotatable frame, a stop pivoted in said bracket and arranged in the normal path of the fingers of the supports, a curved projection carried by said pivoted stop, and rotated by it, and arranged in the path of the pins upon the rotatable frame, and a spring for said bracket and pivoted stop. 13th. The combination, of a rotatable frame provided with a series of pins or projections, a series of supports carried by said rotatable frame upon springs and provided each with a projecting finger, a bracket journalled adjacent to said rotatable frame, a stop provided in said bracket and arranged in the normal path of the fingers of the supports, a curved projection carried by said pivoted stop, and rotated by it, and arranged in the path of the pins upon the rotatable frame, a spring for said bracket and pivoted stop, and stops to limit the movement of said bracket. 14th. The combination, with a vertically movable frame, of a rod journalled therein, a rotable supporting frame for a series of receptacles carried by said rod, a rack and pinion for rotating said rod, devices to operate said rack, a locking lever to normally lock said devices against operation, and means to actuate said lever when the vertically movable frame is lowered to unlock said devices. 15th. The combination, with a vertically movable frame, of a rod journalled therein, a rotatable supporting frame for a series of receptacles carried by said rod, a rack and pinion for rotating said rod, a spring to actuate said rack, a locking lever to lock said rack against the action of said spring projecting beyond the frame so as to be moved by contact with an obstruction, and a spring to draw said locking lever in contact with said rack. 16th. The combination, of a vertically movable frame for a receptacle, of a vessel having an outlet for discharging liquor or other material into said receptacle when it has been lowered, an alarm and devices to sound said alarm actuated by the support for the receptacle when the receptacle has been filled. 17th. The combination, of an elevator shaft, a supporting frame vertically movable therein, a lifting rope connected with said frame, a drum about which said lifting rope passes, a smaller drum arranged concentric with the first drum, and a counterbalanced rope adapted to be wound upon the smaller drum and connected to the larger at a distance from the periphery of the smaller drum, whereby the leverage of the counterbalanced rope is greatest when unwound from the smaller drum.

No. 41,901. Gramaphone. (*Gramaphone.*)

Emile Berliner, assignee of Werner Suess, both of Washington, District of Columbia, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. In an apparatus for reproducing sounds from a rotating record tablet, a reproducing stylus mounted on a swinging lever system, and having a rectilinear path over the record tablet, substantially as described. 2nd. In an apparatus for reproducing sounds from a rotating record tablet, having a record in the shape of a spiral groove, a reproducing stylus and diaphragm mounted on a swinging lever system, and having a radial path over the record tablet, substantially as described. 3rd. In an apparatus for reproducing sounds, the combination of a disc having a record of sounds in the shape of an undulatory, spiral groove upon its surface, and rotating about its centre, with a reproducing stylus guided by the record groove and mounted on a swinging lever system, so as to have a radial path over the record tablet, substantially as described. 4th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveyor, and a diaphragm and stylus at one end of said conveyer, of a system of links supporting the stylus end of the reproducer, and proportioned and arranged as described for moving the stylus in a straight path across the record surface, substantially as described. 5th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveying tube, and a diaphragm and stylus mounted at one end of the tube, of a freely swinging supporting frame for the said reproducer mechanism, substantially as described. 6th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveying tube, and a diaphragm and stylus mounted at one end of the tube, of a freely swinging supporting frame for the said reproducer mechanism, and a weight adjustable on the said frame to counterbalance the reproducer mechanism, substantially as described. 7th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveyer, and a diaphragm and stylus mounted at one end thereof, of a supporting frame for the said reproducer, loosely pivoted to swing freely both laterally and vertically, substantially as described. 8th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveyer, and a diaphragm and stylus mounted at one end thereof, of a supporting frame for the said reproducer, loosely pivoted to swing freely both laterally and vertically, and an adjustable counter weight on the said frame, for determining the pressure of the stylus on the record tablet, substantially as described. 9th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveyer, and a diaphragm and stylus at one end of the said conveyer, of a counterweighted pivoted frame for supporting the reproducer mechanism, and provided with a system of laterally movable pivoted links connected at one end to the said reproducer mechanism, and at the other to a portion of the supporting frame fixed against lateral movement, substantially as described. 10th. In an apparatus for reproducing sounds from a record tablet, the combination with a reproducer mechanism, consisting of a sound conveyer, and a diaphragm and stylus at one end of the said conveyer, of a system of links supporting the stylus end of the reproducer, and constructed as described, for moving the stylus in a straight path across the record surface, and a pivoted bracket on which the sound conveyer rests, provided with antifriction rollers on which the said conveyer travels longitudinally to participate in the movement of the stylus end of the reproducer, substantially as described. 11th. In an apparatus for reproducing sounds from a rotating record tablet, a reproducing stylus mounted to have a free movement over the surface of the record tablet, sub-

stantially as described. 12th. In an apparatus for reproducing sounds from a rotating record tablet, a reproducing stylus mounted on a swinging lever system for carrying the stylus freely over the surface of the record tablet, substantially as described. 13th. In an apparatus for reproducing sounds from a rotating record tablet, a reproducing stylus mounted on a lever system, permitting universal movement of the stylus, substantially as described.

No. 41,902. Method of Working Metal by Electricity.

(*Méthode de travailler les métaux par l'électricité.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. The herein described method of electric welding or metal working, consisting in placing the bar or blank in proximity to an electric heat radiating conductor and then passing an electric heating current through said heat radiating conductor, partly or wholly surrounding the conductor by a refractory or non heat conducting material, thereby raising the temperature of the work to the required extent, and then welding, working or treating the work as desired. 2nd. The herein described method of electric welding or metal working, consisting in placing the bar or blank in proximity to an electric heat radiating conductor and then passing an electric heating current through said heat radiating conductor, partly or wholly surrounding the conductor by a refractory or non heat conducting material, conducting the heat from the conductor to the work through a non electric conducting or a high resistance conducting substance, thereby raising the temperature of the work to the required degree, and then welding, working or treating the said work as desired. 3rd. The herein described method of electric welding or metal working, consisting in enveloping the work to be welded or otherwise operated upon or treated in a heat radiating electric conductor, thereby heating said work to the requisite temperature, and then subjecting said work to the desired operation or treatment. 4th. The herein described method of electric welding or metal working, consisting in enveloping the work to be welded or otherwise operated upon or treated in a heat radiating electric conductor, partly or wholly surrounding the conductor by a refractory or non heat conducting material, thereby heating the latter to the requisite temperature, and then performing the desired operation or treatment upon the work. 5th. The herein described method of electric welding or metal working, consisting in enveloping the work to be welded or otherwise operated upon or treated in an electric conductor, passing an electric heating current through the latter, partly or wholly surrounding the conductor by a refractory or non heat conducting material, conducting the heat from the conductor to the work through a non electric conducting or a high resistance conducting substance, thereby raising the temperature of the work to the required degree, and then welding, working, or treating the said work as desired. 6th. The herein described method of electric welding or metal working, which consists in suitably supporting the work upon two supports, locating a heat radiating electric conductor between the supports in proximity to and enveloping said work at the point to be heated, surrounding both the radiating conductor and the work with a non heat conducting envelope, connecting the terminals of a low resistance heating current conductor with the said heat radiating conductor, and thereby heating the work to the requisite welding, working, or treating temperature, and then treating the said work as desired. 7th. The herein described method of electric welding or metal working, consisting in subjecting or exposing the work to the heat of a heat radiating electric conductor, controlling the heating of the work by varying the confinement or retainment of the heat, and thereby raising the temperature of the work to the required extent, as and for the purpose described. 8th. The herein described method of welding or metal working, consisting in enveloping the work to be operated upon or treated in an electric conductor, passing the electric heating current through the latter, thereby raising the temperature of the work to the required extent, then removing said conductor and working or treating the work desired. 9th. The herein described method of electric welding or metal working, consisting in subjecting or exposing the work at a point to be heated to the heat of an incandescent high resistance body raised to incandescence by the heat of a continuous incandescent electric conductor in contact with said body, thereby heating the work to the required temperature, as and for the purpose described.

No. 41,903. Electric Arc Lamp.

(*Lampe électrique à arc.*)

Henry Harper, 3 Cornwall Gardens, Queen's Gate; John Tryon, 1 Stone Buildings, Lincolns Inn; and Thomas George Poole, 58 Bread Street, Cheapside; all in the County of Middlesex, England, 11th February, 1893; 6 years.

Claim.—1st. In an electric arc lamp, being one of a set connected parallel, the combination, with a movable iron core to which the upper carbon is directly attached, of a single wound solenoid coil in the lamp circuit, acting by its attraction in opposition to gravity on the core, so as to regulate the span of the arc, substantially as herein described. 2nd. In an electric arc lamp, being one of a set connected in series, the combination, with a movable iron core to which the upper carbon is directly attached, of a compound solenoid, consisting of a coil in the lamp circuit having an inclosed coil in a shunt thereto, both coils acting on the same part of the core, but being connected so as to act differentially, in conjunction with gravity, for regulating the span of the arc, substantially as herein described. 3rd. In an electric arc lamp, having the upper carbon directly attached to the iron core of a single wound regulating solenoid, making that core tubular with a stationary piston, and a charge of suitable liquid inclosed within it, so as to act as a dash pot to damp oscillations of the carbon, substantially as described. 4th. In an electric arc lamp, having the upper carbon directly attached to the iron core of a differential regulating solenoid, making that core tubular with a stationary piston and a charge of suitable liquid inclosed within it, so as to act as a dash pot to damp oscillations of the carbon, substantially as herein described. 5th. Constructing a differential solenoid by winding the one coil of insulated wire upon an insulated tube, inclosing this tube within a second insulated tube, and winding on this outer tube the other coil of insulated wire, so that each bobbin is independently removable, substantially as herein described. 6th. In an alternating current electric arc lamp, being one of a set connected parallel, effecting the feed of the carbons by gravity acting in conjunction with a solenoid coil on a core, consisting of a number of insulated iron wires inclosed in a non-magnetic tube and connected directly to the upper carbon, substantially as herein described. 7th. In an electric arc lamp, the combination, with the holder Q, and screw q^2, having a ball-shaped head q^3, of the cross piece P, secured to the solenoid core, substantially as and for the purposes set forth. 8th. In an electric arc lamp, the combination, with the holder U, and pin u^2, having a ball-shaped head u^3, of the cross piece T, having a boss t^5, furnished with set screws t^8, and a cap t^6, substantially as and for the purposes set forth. 9th. In an electric arc lamp, for insulating the movable cross piece carrying one of the carbons, guide rollers made of non-conducting material, substantially as herein described.

No. 41,904. Brick. (*Brique.*)

Cyrus Borgner, Philadelphia, Pennsylvania, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. An improved article of manufacture, a brick provided with projections arranged equidistant, and in a plurality of pairs on one side, and corresponding depressions in the opposite side. 2nd. An improved article of manufacture, a brick provided with projections arranged in a plurality of longitudinal and transverse equidistant pairs on one side, and corresponding depressions in the other side, and opposite said depressions. 3rd. A brick provided with a plurality of pairs of projections arranged equidistant longitudinally and transversely of the brick, and on one side thereof, and grooves in the opposite side of the brick.

No. 41,905. Process of Deodorizing.

(*Procédé de désinfection.*)

Edward Dwight Kendall, Brooklyn, New York, U.S.A., 11th February, 1893; 6 years.

Claim.—The process of freeing malodorous hydrocarbons from offensive odour, which consists in subjecting the same to the action of chloride of sulphur, with or without the addition of a metallic oleate, substantially as described.

No. 41,906. Cigar Bunching Maching.

(*Machine à lier les cigares.*)

Alexander Gordon, Detroit, Michigan, U.S.A., 11th February, 1993; 6 years.

Claim.—1st. In a cigar bunching machine, the combination, with a reciprocating table and its bunching cloth, adapted to form a pocket in an opening of said table, of a pocket closing slide, substantially as described. 2nd. In a cigar bunching machine, the combination, with the reciprocating table, and its bunching cloth adapted to form a pocket in an opening of said table, of a pocket closing slide held down upon the table by a spring, substantially as described. 3rd. In a cigar bunching machine, the combination, of the stationary bunching roll, the reciprocating table carrying the bunching cloth, the aperture in said table in which the pocket is formed, and the pocket closing slide carried by said table, and operated by the movement of said table to close the pocket in advance of the bunching roll, substantially as described. 4th. In a cigar bunching machine, the combination, with the reciprocating table, and the bunching cloth carried thereby, and adapted to form a pocket in an opening of said table, of the pocket closing slide loosely carried upon said table, and a spring applied to said slide to hold it down upon the table, substantially as described. 5th. In a cigar bunching machine, the combination, with the bunching roller and the reciprocating table carrying the bunching cloth adapted to form a pocket in an opening of said table, of the pocket closing slide, the sliding bar to which said slide is pivotally secured, the means for operating said slide by the movement of the table, and the spring applied to the pocket closing slide, whereby the tension of said spring presses upon the bunch in the act of rolling, substantially as described. 6th. The combination, in a bunching machine, of the bunching machine c, c^1, the reciprocating table d, the bunching cloth c, forming a pocket in an aperture of said table, the pocket closing slide f, the sliding bars g^1, on the under side of the table, the lug g, on said sliding bar, the spring g^2, the stop h on the frame, the lug f^1, pivotally secured to the lug g, and the spring i, all arranged

too perate, substantially as described. 7th. In a cigar bunching machine, the combination, of the stationary bunching rolls, the reciprocating bunching table, pivotally secured to swing on the arc of a circle, the bunching cloth carried by said table, and the aperture in the table in which the bunching cloth is adapted to form a pocket, substantially as described. 8th. In a cigar bunching machine, the combination, of the stationary bunching rolls, the reciprocating bunching table, pivotally secured to swing on the arc of a circle, and the bunching cloth carried by said table, and having its front and rear edges secured on lines converging towards the pivotal point of the table, substantially as described. 9th. In a cigar bunching machine, the combination, with the work table and its supporting frame, of the bunching rollers supported in standards above said table at the rear thereof, the reciprocating bunching table pivotally secured in rear of said work table and adapted to project between the standards over the rear portion of the work table and swing in the arc of a circle parallel to the work table, substantially as described. 10th. In a cigar bunching machine, the combination, with the work table and its supporting frame, of the bunching rolls supported in standards above said table at the rear thereof, the reciprocating bunching table pivotally secured by an arm formed on the inner end of said bunching table and having its outer end curved and supported on a roller free to swing in the arc of a circle between the standards, substantially as described. 11th. In a cigar bunching machine, the combination, with the supporting frame, and the bunching rollers supported between two standards of said frame, of an oscillating bunching table adapted to swing between said standards in a horizontal plane below the bunching rollers, and having an arm projecting outside of said standards pivotally secured to the frame, and a supporting roller on one of the standards, suubstantially as described. 12th. In a cigar bunching machine, the combination, with the frame and the bunching rollers secured between standards of the frame, of the oscillating bunching table d provided with the arm d^5 pivotally secured to the frame, the aperture d^2 in the bunching table, the bunching cloth e secured to said table and adapted to form the pocket e^3, the roller d^3 supporting the free end of the bunching table, and the supporting rail b^2 for the bunching cloth, substantially as described. 13th. In a cigar bunching machine, the combination, with the reciprocating bunching table, and the bunching cloth secured thereto and adapted to form a pocket in an opening of said table, of a device secured above the bunching table and adapted to automatically operate to form the pocket in the bunching cloth, substantially as described. 14th. In a cigar bunching machine, the combination, with the reciprocating bunching table and the bunching cloth secured thereto, and adapted to form a pocket in an opening of said table, of a folder device consisting of the arm k, the folder bar k^1, and means for operating the same, substantially as described. 15th. In a cigar bunching machine, the combination, with the stationary bunching rolls and the rciprocating bunching table, substantially as described, of the bunch receptacle slidingly secured to the bunching table and adapted to be pushed out by the forward movement of said table against the tension of a closing spring, substantially as described. 16th. In a cigar bunching machine, the combination, with the oscillating bunching table, of the shaft m, the cam p on said shaft, the lever q^1 provided with the roller q adapted to be actuated by said cam, the lever s connected to the lever q^1 by a link r, the roller p on the cam, and the link t connecting the lever q^1 with the oscillating bunching table, substantially as described. 17th. In a cigar bunching machine, the combination, with the reciprocating bunching table, and its actuating connection with the shaft m of the interrupted gear wheel n provided with the roller n^2, the drive pinion l^2, adapted to engage with said gear wheel, the foot lever o and the arm o^1 pivoted to said foot lever and provided with the flange o^2, substantially as described. 18th. In a cigar bunching machine, the combination, with the reciprocating bunching table and its actuating connection, with the shaft m, of the interrupted gear wheel n of said shaft, the drive shaft l having the drive pinion l^2 adapted to engage with the gear wheel, the spring tooth n^3 on the gear wheel n, the foot lever o, the arm o^1 on said leaver provided with the flange o^2, and the roller n^2 on the gear wheel n, substantially as described.

No. 41,907. Confessional. (*Confessionnal.*)

George Aloysius Firnstein, Cincinnati, Ohio, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. A folding confessional, composed of the main partition or screen proper A, having an upright or standard D, attached along its rear edge, and a pair of laterally disposed wing panels E, E^1, the latter being provided at their upper and lower inner corners with vertical pivots or pins d^2, which engage suitable openings in angular or L-shape brackets d and d^1, secured to said standard immediately above and below respectively said partition, whereby said wing panels are adapted to be folded contiguous with said partition, and when open presenting no vertical openings or cracks at the rear of said partition, substantially as and for the purpose herein set forth. 2nd. In a confessional, a vertical partition or screen proper suitably supported and latticed, and provided with a pair of hinged hand rests, one at either side said partition, beneath the lattice therein, a single swinging bracket or button a^3, formed from and operating in a corresponding opening within the frame of said partition, so as to project laterally and independently from both sides said partition beneath said rests, to form a single support for both rests acting on both simultaneously, substantially as herein set forth. 3rd. In a confessional, a vertical partition or screen proper A, suitably supported and latticed, and provided with a folding kneeling stool comprising a board having connecting bars which project inwardly therefrom intermediate its ends, and are adjustably hinged at their inner ends by means of pivots b^2, engaging or travelling in slotted lugs or cheeks b^3, attached to the lower cross bar of said partition, and suitable supporting devices for said stool, substantially as herein set forth. 4th. In a folding confessional, a main upright partition or screen proper A, suitably supported and latticed, and provided with a kneeling stool hinged by means of the intermediate connecting bars b, b^1, and pivots b^2, the latter engaging and travelling in slotted lugs b^3, on the lower cross bar of said partition, and a pair of horizontally swinging arm or leg blocks B^1, the latter being hinged at their inner ends, one at either end the opening at the bottom of said partition, and adapted to support said kneeling stool at both its ends in a horizontal position at either side said partition as occasion may require, substantially as herein set forth. 5th. In a folding confessional, the combination with the main partition or screen proper A, having an upright supporting standard D, attached along its rear edge, and ring panels E, E^1, the latter being hinged to said standard by means of L-shaped brackets d and d^1, at top and bottom respectively of said standard, and vertical pivots or pins d^2, on both wing panels engaging suitable openings in the horizontal portions of both said brackets, and thereby adapted to be folded against said partition, and also arranged at right angles thereto, of a button F, pivotally mounted within the main partition, and when turned outward therefrom engaging both said wing panels to firmly clamp them against the standard, and thereby hold them open or extended at right angles to said partition, and when in its normal position folded flush with the partition, adapting the said wing panels to be folded and to lie in close contact with the main partition, substantially in the manner and for the purpose herein set forth.

No. 41,908. Tower for Windmills.

(*Charpente de moulin à vent.*)

Thomas Snow, Batavia, Illinois, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. In a tower, the combination, with corner posts of angle iron arranged with their corresponding flanges in line, of struts connecting these posts, and arranged in the same horizontal plane, said struts being formed of angle iron having one flange secured to the corner posts, and the other flange having abutted mitered ends to form a rigid frame, substantially as specified. 2nd. In a tower, the combination, with corner posts of angle iron, arranged with their corresponding flanges in line, of rigid frames connecting said posts at intervals and formed of angle iron struts, having their horizontal flanges mitered and abutted at the corners, and the vertical flanges secured to the corresponding flanges of the corner posts, and of corner braces connecting the adjoining struts, substantially as specified. 3rd. A metallic tower, composed of posts A, girts B, and braces C, the braces and girts being unitedly secured to the posts by a single bolt at each joint, substantially as specified. 4th. The combination, with a tower of braces C, deflected and jointed together so as to produce drawing strains by such braces, substantially as specified. 5th. The combination, with a steel tower of an anchoring frame work consisting of posts E, bars F, and anchor blocks G, substantially as specified. 6th. The combination in a steel tower of the girt B, forming a square and corner braces b, rendering the square rigid, substantially as specified. 7th. The combination, in a tower of the girts, mitered and forming a rigid square, and secured by their members respectively to the flanges of the upright posts, as and for the purpose set forth.

No. 41,909. Wind Mill. (*Moulin à vent.*)

Thomas Snow, Batavia, Illinois, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. In a wind mill, the combination of the radial arms, castings G^1 carried thereby and having recesses extending transverse to the casting, and formed between ears g thereon, vane carrying bars D, casting F, supporting the latter and having ears extending transversely to said bars, fitting said recesses and adapted to prevent longitudinal play of the vane bars and loosening of the parts, and pivot bolts G, passing through the ears, substantially as set forth. 2nd. In a wind mill, the combination of the radial arms, castings G^1, carried thereby and having recesses extending transverse to the casting and formed between ears g, vane carrying bars D, castings F, supporting the latter and having ears extending transversely to said bars and fitting said recesses, stops or shoulders m, n, formed on the castings F, and adapted to engage the plate G^1, to limit the movement of the vane bars in each direction, shoulders or stops k, formed on the plate G^1, at the side of the ears g, and pivot bolts G, passing through the ears and having their heads locked by the latter stops, substantially as set forth.

No. 41,910. Burner for Hydrocarbon.

(*Foyer à hydro-carbures.*)

William Francis Otis, Norwalk, Ohio, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. In a hydrocarbon burner, a set of generators provided with filters, located above a set of burners provided with cores, and a supply pipe for each generator, as described. 2nd. In a hydrocarbon burner, a set of generators provided at each end with filters, located above a set of burners, and a supply pipe for each generator provided with an automatic valve, as described. 3rd. In a hydrycarbon burner, a set of generators divided into compartments, a filter at each end of said generators, a superheating chamber between said filters immediately above a set of burners, and a supply pipe for each generator, as described. 4th. In a hydrocarbon burner, a set of genertors divided into compartments, a filter at each end of said generators, an automatic valve for each generator, a superheating chamber in each generator intermediate of its length, located above a set of burners, and means whereby the flickering of the light is overcome, in the manner set forth. 5th. In a hydrocarbon burner, a set of generators divided into compartments by perforated diaphragms, a filter at each end of the generators, an automatic valve within the filters at the feeding end of the generators, the connecting pipes provided with perforated diaphragms, and a set of burners below, and generators, as described. 6th. In a hydrocarbon burner, the combination with the genertors constructed as described, a valve between said generators, a perforated diaphragm in the supply pipes at each side of said valves, of the burners below the generators provided with cores, substantially as described. 7th. In a hydrocarbon burner, the combination with the generators, provided with an automatic valve, and a valve between said generators in the supply pipes, of the burners below the generators, and a pan having a connection with the supply pipes, in the manner described. 8th. In a hydrocarbon burner, the combination with the generators, of an automatic valve, provided with a perforated head located within said generators, for the purpose set forth. 9th. In a hydrocarbon burner, the combination with the generators, of an automatic piston valve provided with two heads connected by a rod, and adapted to be unseated by pressure within the supply pipes, and seated by pressure in the generators, for the purpose set forth. 10th. A set of burners provided with cores, and a transverse connection between said burners provided with a core for equally distributing the gases through the burners and preventing a roaring sound and the flickering of the light, in the manner set forth. 11th. In a hydrocarbon burner, the combination with a generator having located within it, an automatic valve and a supply pipe for said generator, of a burner provided with a core located below the generator, and a pipe connection between the burner and the genertor provided with a perforated diaphragm, substantially as described. 12th. In a hydrocarbon burner, the combination with a generator having located within it an automatic valve and filter for said generator, and a supply pipe, of a burner located below the generator provided with a core, and a connection between the generator and burner, substantially as described.

No. 41,911. Presser Flyer for Machinery for Preparing Fibrous Materials. (*Ailette à pression pour machines à préparer les matières fibreuses.*)

John Newton, Lancaster, England, 11th February, 1893; 6 years.

Claim.—1st. In combination, with a presser flyer, the use of a grooved spring catch, for the purpose specified. 2nd. In combination, with a presser flyer, the use of a grooved spring catch, with a projection fitting into a slot in flyer leg, for the purpose specified.

No. 41,912. Signal for Railways.

(*Signal de chemin de fer.*)

James Henry McCartney, Rochester, New York, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. The combination, with the main pipe or conduit, of a series of branch pipes containing signals, operated by pressure and valves in adjacent branch pipes directly connected for simultaneous operation, one to connect one branch with the main and the other with the open air, substantially as described. 2nd. The combination, with the way or track, of a main pipe extending along the way, a series of branch pipes containing signals operated by pressure, and valves in adjacent branch pipes positively connected for simultaneous operation, one operating to open one branch to the main and the other to the air, substantially as described. 3rd. The combination, with the main pipe, of two branch pipes having signaling devices operated by pressure, valves for connecting the branches with the main pipe and the open air, positively connected for simultaneous operation, and a device for automatically closing said valves after being operated, substantially as described. 4th. The combination, with the way or track, and a main pipe extending beside it, of two branch pipes having signaling devices operated by pressure, valves for connecting one branch pipe with the main pipe, and the other with the open air, said valves being positively connected for simultaneous operation, and a device for automatically closing said valves after being operated, substantially as described. 5th. The combination, with the track or way and a series of pipe sections beside it, each containing signaling devices operated by pressure, of a reservoir for air under pressure and valves for connecting said reservoir with the sections, valves for relieving the pressure in said sections, and direct connections between the supply and relief valves of adjacent sections for causing their positive and simultaneous operation, substantially as described. 6th. The combination, with the track or way, and a series of pipe sections beside it, each containing signals operated by pressure, of a reservoir for air under pressure and valves for connecting said reservoir with the sections, valves for relieving the pressure in the sections, direct connections between the supply and relief valves of adjacent sections for causing their positive and simultaneous operation, and a signal (as a whistle) operated by the air escaping through the relief valve, substantially as described. 7th. The combination, with the track or way, and a series of pipe sections beside it, each containing signals operated by pressure, of a reservoir for air under pressure and valves for connecting said reservoir with the sections, valves for relieving the pressure in the sections, direct connections between the supply and relief valves of adjacent sections for causing their simultaneous and positive operation, and a treadle arranged in proximity to the track and adapted to be moved by passing trains to positively operate both said valves, substantially as described. 8th. The combination, with the track or way, of the main pipe, the section pipes containing signals, the valves at each end, the rock shaft positively connected to valves of adjacent sections, and the treadle connected to said rock shaft arranged in proximity to the track, substantially as described. 9th. The combination, with the track or way, the main pipe, and the section pipes containing signals operated by pressure, of the inlet and outlet valves, those in adjacent sections being positively connected for simultaneous operation, the additional valves between the main and section pipes, and locking devices for securing them closed, substantially as described. 10th. The combination, with the track or way, of the main pipe, the section pipes connecting signals, the valves at each end the rock shaft connected to valves of adjacent sections, the treadle connected to said rock shaft arranged in proximity to the track, and the counter weights for returning the rock shaft to normal position after being actuated, substantially as described. 11th. In a pneumatic railway signal, the combination, with an air pipe, a cylinder connected therewith, and a piston in the cylinder actuated by pressure in the air pipe, of a shoe or arm moved by said piston located in proximity to the track and a signal located on a railway train on the track, adapted to be actuated by said shoe when projected by its piston, substantially as described.

No. 41,913. Safety Valve. (*Soupape de sûreté.*)

Joseph Rivers and William L. Gray, Evanston, Wyoming, U.S.A., 11th February, 1893; 6 years.

Claim.—The vavle body or casing having an inner bevelled and an adjacent horizontal valve seat at one end thereof, an annular groove surrounding the flat valve seat, and having a raised outer wall extending above the plane of the same, and an interiorly threaded portion, a winged valve working over the upper end of the casing, and having a bevelled and unbevelled contact face adapted to register with the valve seats, an annular cushioned groove on its under side directly over the horizontal portion of the valve seat, and a circular series of vertical steam openings leading from the under cushion groove, a circularly adjustable ring slide working on the valve and provided with a series of perforations adapted to cover and uncover the steam openings in the valve, and adjusting slots, adjustment screws passing through said slots into the valve, a bridge or yoke having an interiorly threaded ring engaging the threaded portion of the valve body, and an upper threaded perforation, a spring support having a pointed bearing pin resting on the center of the valve, a spring arranged on said support, a follower block mounted on the upper end of the spring, and an adjusting screw passing through said upper threaded perforation and bearing on said block, substantially as described.

No. 41,914. Hot Water Furnace. (*Calorifère à eau.*)

Abraham Grégoire, Chambly Basin, Quebec, Canada, 11th February, 1893; 6 years.

Résumé.—1°. La disposition des bassins E et F, mis en communication par les tubes G, et la disposition du foyer dans la bassin inferieur E, le tout tel que décrit et pour les fins indiquées. 2°. Cet assemblage des tubes aux bassins au moyen des boulons *b*, sans que les tubes soient vissés, le tout tel que décrit.

No. 41,915. Music Leaf Turner.

(*Tourne feuille de musique.*)

Orin W. Catlin, Fairfield, Iowa, and Nelson B. Rairden, Washington, Iowa, 11th February, 1893; 6 years.

Claim.—1st. In a music leaf turner, the combination, with the blackboard having a holder, and a pin mounted on the blackboard, of a series of graduated L-shaped slotted and perforated leaf turning arms, washers interposed between and above the arms and mounted upon the pin, a spring mounted upon the pin and bearing on the washers, and a lever pivoted upon the blackboard, and terminating at one end in an arm bearing against and adapted to operate the leaf turning arm and at its outer end in a thumb plate depending below the arm, substantially as specified. 2nd. In a music leaf turner, the

combination, with the blackboard having the oblong recess 8 vertically disposed, the horizontally and vertically disposed recesses 11 and 12, the bearing pin 9, mounted in the recess 8, and the plates 10, located at the upper and lower ends of the same, of the series of turning arms pivotally mounted upon the pin, the spring mounted upon the pin and compressing the arms, which latter are L-shaped, graduated in length, slotted, and are seated in the recesses 11 and 12, and the thumb lever pivoted to the bottom of the recess 11, terminating at its inner end in an arm disposed in rear of the leaf turning arms, and at its outer end in a depending thumb plate, substantially as specified.

No. 41,916. Valve. (*Soupape.*)

John Vincent Glover and Wellington Dustan Stevens, both of Springfield, Massachusetts, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. In a slow closing valve, the combination, with the tank section formed to constitute the valve seat, and having an unobstructed opening therethrough, and an outwardly extended member with a vertical tube or cylinder supported on said member, having one or more ports through an upper portion of its wall, of the valve vertically movable to open from and close upon the said tank section, and provided with an upwardly extended portion which has an outwardly extended member, and which supports a pending spindle and piston that plays in said tube, and a passage leading from the chamber of said tube for the relief thereof, substantially as and for the purposes described. 2nd. In a slow closing tank valve, the combination, with the tank section having outwardly projected arms at opposite sides thereof, the one supporting a vertical post and the other a vertical tube with one or more ports through an upper portion of its wall, of the valve having an upwardly extended member, with rigid arms outwardly extended therefrom, and having a guiding engagement with said post, and the other supporting a pending spindle, which has at its lower portion a piston that plays in said tube, and a passage leading from the chamber in said tube for the relief of the chamber, means for regulating the degree of freedom of the water passage from the cushion chamber through said relief passage. 3rd. The combination with the tank section, and a vertical water cushion tube supported thereby, of the valve guided vertically to move from and close upon the tank section, as spindle or plunger, and means for securing same adjustably as to height upon the valve, and having a piston which plays in said tube, and a passage in communication with the chamber in said tube for the relief thereof, substantially as described. 4th. The combination, with the tank section, having an outwardly extended part, and a tube vertically supported thereby, provided at an upper portion thereof with one or more ports, the valve movably guided and having the upwardly extended spindle like part, and an arm outwardly extended therefrom, a vertical spindle supported by said arm and having its lower end portion exteriorily shouldered and internally screw threaded, the plug *t*, having the screw threaded shank and the enlargement at its lower end, a packing applied at the lower end of the spindle, and clamped thereon by the union therewith of said plug, the thimble *w*, applied at the upper end of said tube, and the passage communicating with and leading from the water cushion chamber in the said tube, substantially as and for the purpose set forth. 5th. The combination, with the tank section, having an outwardly extended member *e*, and supporting a vertical tube or cylinder, having one or more ports at an outer portion thereof, of a valve guided vertically to move from and close upon the tank section and having the upwardly extended tube *k*, a spindle or plunger having a piston which plays in said tube, and the collar and set screw for confining the collar on the valve tube, and said collar provided with an outwardly extended part which supports the piston spindle and a passage in communication with the chamber within said tube which leads outwardly therefrom for the relief thereof, substantially as described. 6th. In a slow closing valve, the combination with a tank section and a vertical water cushion tube supported thereby, of the valve guided to move from and close upon the tank section, a spindle or plunger and means for securing the same adjustably as to height upon the valve, and having a piston which plays in said tube, a stop or abutment for limiting the upward movement of the valve and its piston spindle, and a passage in communication with the cushion chamber for the relief thereof, and means for regulating the degree of freedom of the water passage from said chamber, all whereby the play of the valve be adjusted as to its extent of movement, and its rate of movement may be regulated, substantially as described. 7th. The combination, with the tank section, having the horizontal arms *e*, *e*, each with an upwardly extended boss, the one supporting the vertical post *d*, and the other the vertical tube *b*, with one or more ports *x*, the valve *m*, with the tube *k*, the collar *g*, having the arms *h*, *h*, one being vertically apertured to have a sliding engagment with the post *d*, and the other having rigidly connected thereto the vertical spindle provided at its lower end with the piston which plays in the tube, the passage leading upwardly through the piston, and said spindle and a regulating device for said passage, substantially as and for the purposes described. 8th. In a slow closing valve, the combination, with the tank section having outwardly projected arms at opposite sides thereof, the one supporting a vertical post and the other a vertical tube with one or more ports through an upper portion of its wall, of the valve having the upwardly extended tube with a rigid arm outwardly extended therefrom, and being vertically apertured to fit and be guided by said post, and another outwardly extended arm also vertically apertured, a spindle having at its lower portion a piston which plays in the said tube, and which has its upper portion externally screw threaded with the shoulder *i*, and which threaded portion is upwardly passed through said second named arm, and the confining nut *j*, and a relief passage leading from the chamber on said tube, substantially as and for the purposes set forth. 9th. In a slow closing valve, the combination, with the tank section having an outwardly extended member and a vertical tube supported thereon, which is provided with one or more ports through an upper portion of its wall, of the valve having the upwardly extended spindle like part provided with a rigid outwardly extended arm, a tubular spindle vertically supported by said arm and having at its lower portion a piston, which fits in said tube, a passage leading through the said piston, and in communication with the passage through the spindle and the tapered plug *y*, applied at the upper end of said spindle, substantially as and for the purposes described.

No. 41,917. Bob Sleigh. (*Traîneau-jumeau.*)

James Henry Jackson, Keady, Ontario, Canada, 11th February, 1893; 6 years.

Claim.—1st. A runner A, having a block B, secured to it, the said block having cheek pieces F, rounded tops, as described, in combination, with a plate H, fixed to the bench T, and shaped to receive the rounded tops of the cheeks F, a projection C, extending from the plate H, and fitting between the cheeks F, so as to rest against the rounded recess in the block B, substantially as and for the purpose specified. 2nd. A runner A, having a block B, with lips C, formed on its bottom to fit between the sides of the runner A, and secured to the said runner by means of the bolts D, and ferrule B, cheeks F, extending from the block B, and having rounded ends as described, in combination with a plate H, having a projection G, formed on it to fit between the cheeks F, and rest upon the bottom of the rounded recess, a pin or bolt J, fitting a hole made through the cheeks F, and projection G, substantially as and for the purpose specified. 3rd. A runner A, having two brackets P, bolted to it, and a rave M, hinged to each bracket, in combination, with a link N, movably fitted into the guide O, fixed to the bench L, substantially as and for the purpose specified. 4th. A pair of bobs A, connected together by a rod Q, flexibly connected to the said bobs, substantially as and for the purpose specified. 5th. A bolster end cap made of metal on which the stake is pivoted, the lower side being shaped to engage with the said bolster stake so as to hold it in position for use, and the end shaped to form a catch to grip a chain, substantially as and for the purpose specified. 6th. A bolster stake pivoted on the bolster, and adapted to engage with the said bolster, so as to be held in position for use, substantially as and for the purpose specified.

No. 41,918 Revolving Tower Fortification.

(*Fortification tournante.*)

Theodore Ruggles Timby, Washington, District of Columbia, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. A revolving tower fortification constructed with a bell or funnel shaped tower, the surface of which extends upward on nearly straight converging lines at an angle of about 45 degrees to the horizon, as shown and described. 2nd. A revolving tower for fortifications having an outer surface formed on substantially straight converging lines, and with a dome shaped apex and a nearly perpendicular skirt around its lower margin, as shown and described. 3rd. A revolving tower or turret constructed as herein described, with walls inclined on substantially straight converging lines, and formed of an inner and outer shell with an interposed body or packing of yielding material to deaden or break the shock or concussion from the impact of shots, as explained. 4th. A revolving tower or turret constructed with inclined walls, in combination with an annular fixed cover of metal masking, the outer margin of the revolving tower, and presenting an inclined surface for the deflection of shots, and a glacis or embankment in which the outer margin of the fixed metal cover is embeded, as herein shown. 5th. A revolving fortification constructed with a central hollow column supporting a sighting platform communicating with a passage way in the foundation of the structure, giving access to the sighting platform and affording ingress of air for ventilation, a conduit for electrical and other conductors for power and other purposes, said column being capable of rotary movement independently of the tower, as explained. 6th. The combination of the revolving tower or turret, a central hollow column 20, supporting a sighting platform 23, and giving access thereto, and a packing 22, bracing the hollow column concentrically in the foundation of the tower, and preventing the communication of the shock from the impact of projectiles. 7th. A revolving tower fortification constructed with a turret having a well 14, in combination with a central hollow column 20, sighting platform 23 carried thereby, electrical conductors and connections 27, 28, 31, external to the well, and guns 13 to be fired automatically by said conductors, as explained. 8th. The combination of the revolving tower or turret with a central well 14, the central hollow column 20 moving independently therein, sighting platform 23, carried by said column, external electrical conductors and connections 27, 28,

31, guns 13, and switches 29, 30, and flexible conductors 31, 32, permitting the automatic discharge of the guns, either simultaneously or independently, as explained. 9th. In combination with a revolving tower or turret, the foundation constructed as herein described with concentric walls 4, 5, 6, having chambers between, tunnel 23, giving approach to the interior and hollow column 20, having an opening 20^a, communicating with the tunnel, said column being capable of oscillating movement, independently of the tower, as explained. 10th. The combination of the independent annular foundation walls 4, 5, 6, base plate 2, upper foundation floor 7, tie rods 7^d, connecting the plate 2, and floor 7, and the revolving tower or turret supported on the floor 7, as explained. 11th. In a revolving tower fortification, the combination of a sighting platform, capable of rotary or oscillating movement independently of the tower, and one or more sighting telescopes mounted on said platform in cushioned bearings to take up shocks or vibrations, substantially as described. 12th. In a revolving tower fortification, the combination of a sighting platform capable of independent rotary or oscillating movement, and three or more sighting telescopes for independent use mounted on said sighting platform in cushioned bearings, substantially as and for the purpose set forth.

No. 41,919. Apparatus for Evaporating Brine.

(*Appareil d'évaporation de saumure.*)

Theodore Ruggles Timby, Washington, District of Columbia, U.S.A., 11th February, 1893 ; 6 years.

Claim.—1st. The herein described apparatus for producing salt, comprising an open frame or support and two or more superposed vats spaced apart for the passage of air between them, gradually increasing in size upwards and arranged so that the sides of each vat above the first project beyond the sides of the vat immediately below it. 2nd. The apparatus for evaporating brine by atmospheric action, which consists in a suitable frame, a series of superposed vats mounted in said frame, and a cover for the upper vat, said frame being open and said vats being arranged in vertical series with spaces between them, communicating with the outer atmosphere, and the sides of each vat above the first being made to project beyond those of the one below it for excluding rain and deflecting air, as explained. 3rd. In an apparatus for evaporating brine by atmospheric action, the combination of the frame or support, the vertical series of vats arranged in said frame or support and gradually increasing in size upwards, and a cover for the top vat, said vats being arranged with unobstructed air spaces between them, and said frame being open on its sides, having tracks upon which the vats are mounted, and having an open space into which the vats may be slid individually, substantially in the manner and for the purpose explained. 4th. In an apparatus for evaporating brine by atmospheric action, the combination of an open frame, having tracks or ways, and a series of superposed vats mounted upon the tracks or ways, in said frame, exposed at the sides to the outer atmosphere, each having overhanging sides and forming a cover for the one below it with spaces for horizontal circulation, of air between them, said tracks or ways being in the horizontal planes of the sides of the vats, whereby they do not obstruct the passage of air between the vats, as explained. 5th. An apparatus for evaporating salt by natural atmospheric action, consisting of an exposed vat having a suitable cover, with overhanging sides supported above it, and having air deflectors at the sides for guiding the air between the vat and cover, said vat and cover being spaced apart and open at the sides, substantially as and for the purpose set forth. 6th. In an apparatus for producing salt by natural atmospheric action, the combination of an exposed evaporating vat provided on its sides with air deflecting boards, and having wheels or rollers in the horizontal plane of the sides of the vats and beneath the deflecting boards, and a cover for said vat spaced above and overhanging said vat, whereby the air is received from the deflector, and guided down into the vat, substantially as and for the purpose set forth. 7th. In an apparatus for evaporating brine by natural atmospheric action, the combination of an open frame or support and a vertical series of vats, for containing brine having vertical spaces between them open to the outer atmosphere, and in which the bottom of one overhangs and forms a cover for the one below it, and is movable for the purpose of uncovering the one beneath it, substantially as and for the purpose set forth. 8th. A brine evaporating plant consisting of a number of ranges of superposed vats sliding in supporting frames, disposed in pairs with interposed driveways and sideways, alternately arranged, the driveways between the pairs of frames, or ranges, and the slideways between the members of each pair, all as herein described, permitting the sliding of the vats successively from opposite sides into the open space between the members of each pair of frames, and giving access of teams to the sides of the vats opposite that, toward which they slide for the purpose of unloading each vat, as it is uncovered by the successive sliding off of the superposed vats, as explained.

No. 41,920. Furnace for Annealing Glass.

(*Fourneau pour recuire le verre.*)

James William Bonta, Wayne, Pennsylvania, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. The combination in a leer or furnace for annealing sheet or plate glass, of the flat bed or table on which the sheet or plate of glass is laid, and a supporting structure for said table having air spaces open only at the bottom, whereby the supporting structure is ventilated without unduly cooling the table, substantially as specified. 2nd. The combination in a leer or furnace for annealing sheet or plate glass, of the flat bed or table on which the sheet or plate of glass is laid, a supporting structure for said table having air spaces open only at the bottom, and a foundation having air circulating passages, communicating with said air spaces, substantially as specified. 3rd. The combination in a leer or furnace for annealing sheet or plate glass, of the flat bed or table on which the sheet or plate of glass is laid, and a supporting structure for said table having air spaces open only at the bottom, and a foundation having air passages communicating with said air spaces, and air jet pipes and outlets, whereby a circulation of air through said passages is ejected, substantially as specified. 4th. The combination in a leer or furnance for annealing sheet or plate glass, of the flat bed or table on which the sheet or plate of glass is laid, and a supporting structure for said table composed of bricks having ribs at the ends, whereby, when said bricks are assembled, air spaces are formed in the supporting structure, substantially as specified.

No. 41,921. Conductor for Water.

(*Conducteur pour l'eau.*)

Samuel Silberstein, Pittsburg, Pennsylvania, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. A water conductor or spout having a dovetailed rib formed thereon, said rib having a broad face, and having a space nearly as broad as the face between its inwardly extending edges and a fastener engaging with said dovetailed rib, substantially as and for the purposes set forth. 2nd. A corrugated conductor or spout having a dovetailed rib formed thereon, and a fastner having an inwardly extending lip thereon engaging one side of said dovetailed rib and a straight lip engaging the opposite side of said dovetaid rib, and a set screw passing through said lip to bind said fastner to the dovetailed rib, substantially as and for the purposes set forth.

No. 41,922. Rack for Hay and Stock.

(*Râtelier à foin et bestiaux.*)

Philander Hewitt, Hillsdale, Michigan, U. S. A., 11th February, 1893; 6 years.

Claim.—1st. In a combined hay and stock rack, the combination, of the box and the brace bar extending from said brace brackets to the outer ends of the racks, substantially as described. 2nd. In a combined hay and stock rack, the combination, of the racks hinged to the sides of the box, of the brace bracket comprising the brace P, the vertical portion O, and the inclined guide bar N, having means for detachably engaging the brace bar J, the brace bar J, the guide bar K^1 on the racks, and a head on the brace bar engaging said guide bar, substantially as described. 3rd. In a combined hay and stock rack, the combination, of the wagon box, the racks hinged thereto, the brace bar, the foot boards D, of the brace brackets, comprising the base P, P^1, formed as described, the vertical portion O, the inclined connecting bar M, slotted to receive the head L, the brace bar carrying said head, and slidingly engaging with the guide bar on the under side of the rack, substantially as described. 4th. In a combined hay and stock rack, the combination, with the hinged racks, of the end racks having hooks in their lower ends, eyes in the wagon box with which said hooks engage, and the links S engaging over the cross bars of the racks and the posts of the end racks, substantially as described, 5th. In a combined hay and stock rack, the combination, with the side racks hinged to the body of the rack, the hinged member secured to the under side of the rack, and having guide bar K^1 formed therewith, of the brace rod J, having an eye at its upper end slidingly engaging on said brace rods, and a heel L at its lower end, detachably engaging with the bracket on the box.

No. 41,923. Land Roller. (*Rouleau d'agriculture.*)

Jay S. Corbin, Prescott, Ontario, Canada, 11th February, 1893; 6 years.

Claim.—1st. In a land roller, composed of drums suspended upon the axle, and having free rotary motion thereon, in combination, with draft bars journalled on such axle within the inner ends of the two outer drums, substantially as described. 2nd. In a land roller, the combination, of three drums suspended upon an axle, and having free rotary motion thereon, in combination with draft bars journalled upon such axle, such journalled ends being placed within the inner ends of the two outer drums and the ends of the middle drum, substantially as described. 3rd. In a land roller, composed of drums suspended upon an axle so as to have free rotary motion thereon, each of which contains within each end a hub connected to the outer periphery of the drum, by means of bolts passing radially from holes in the hub to holes in the periphery of the drum, in combination with the bolts connecting the two hubs together, so that when all such bolts are tightened up by nuts a tensile strain will be brought to bear on all the radial bolts thereby forcing the drum into an exact cylinder, with the hubs accurately centered for the passage through them of an axle, substantially as described. 4th. In a land roller, having its suspended drums constructed, substantially as in the last claim set

forth, in combination with ball journal boxes placed upon the axle between the inner end of the two outer drums, and the ends of the middle drum, such journal boxes being connected to the draft bars, substantially as described. 5th. In a land roller, having its drums constructed, substantially as in the third claim set forth, in combination, with draft bars running from the tongue back between the inner ends of the outer drums and the ends of the middle drum to bearings on an axle upon which all of the drum are suspended and revolve, substantially as described. 6th. In a land roller, having its drums constructed, substantially as in the third claim set forth, in combination, with draft bars running from the tongue back between the inner ends of the outer drums and the ends of the middle drum to the axle, and with ball journal boxes placed upon the inner ends of the draft bars, and forming bearings for the axle upon which all of the drums are suspended and revolve, substantially as described. 7th. In a land roller, a sheet metal drum, hubs suspended therefrom by radial spokes, and means for putting said spokes under tensile strains by adjustable connections between the hubs, the heads of the spokes being connected at the hub and their outer threaded ends being secured by nuts on the periphery of the cylinder and with bands on said cylinder so as to prevent buckling of the cylinder, substantially as described. 8th. In a land roller, a sheet metal drum, reinforced by tires or bands placed upon its ends, substantially as described. 9th. In a land roller, a sheet metal drum, hubs suspended therefrom by radial spokes, and tires or bands placed upon the ends of the drum to prevent buckling outward, substantially as described. 10th. In a land roller, a sheet metal drum, hubs suspended therefrom by radial spokes, which hubs and spokes are so placed as to support the drum at or near its ends, and are protected from external violence by being placed entirely within the drum, substantially as described. 11th. In a land roller, a sheet metal drum, hubs suspended by radial bolts or spokes therefrom, and a tire or bend placed externally upon the ends of the drum, and in contact with nuts upon said radial spokes in order to lock such nuts in place, substantially as described.

No. 41,924. Weighing Truck. (*Chariot à bascule.*)

Elmer E. Chandler, Pike, New York, U.S.A., 11th February, 1893; 6 years.

Claim.—1st. In a weighing truck, the combination, with a frame and a weighing mechanism and platform therein, of movable bars which are supported over the platform, substantially as shown and described. 2nd. In a weighing truck, the combination, with the frame and a weighing mechanism and platform therein, of brackets pivoted at their inner ends to the frame and upon opposite sides thereof and bars which connect the free ends of the said brackets, substantially as shown and described. 3rd. In a weighing truck, the combination, with a frame and a weighing platform therein, of brackets pivoted upon opposite sides of the frame near the ends of the platform, outwardly projecting lips on the free ends of the brackets, and bars which connect the free ends of the said oppositely arranged brackets, substantially as shown and described.

No. 41,925. Ball Cock. (*Robinet modérateur.*)

Henry Coleman Folger, West Somerville, Massachusetts, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. A ball cock comprising in its construction an inflow and outflow port, a valve to control the latter, a chamber above the said valve, a seat or stop above the valve upon which the latter may come to bear or rest when raised, an outflow port communicating with the said chamber, a valve controlling the said port, and the float or ball connected with the said valve, as set forth. 2nd. A ball cock comprising in its construction an inflow and an outflow port, a valve to control the latter, an air and water tight chamber above the said valve, a seat or stop above the said valve,and at the bottom of said chamber upon which the valve may come to bear or rest when raised, an outflow port communicating with the said chamber at or near the bottom thereof, a valve controlling the said port, and the float or ball connected with the said valve, as set forth.

No. 41,926. Cigar Box. (*Boîte à cigares.*)

Oskar Künzell, Dusseldorf, Prussia, 13th February, 1893; 6 years.

Claim.—1st. A case for containing cigars or other articles, composed of walls, forming a frame, inside which are arranged separate compartments corresponding with the number of articles to be packed, and having two easily breakable membranes closing the compartments on both sides after filling, which membranes, upon the withdrawal of the contained article must be broken through in combinaton with readily removable protecting strips or pieces of wood or paper such as that marked *s*, *s*, for protecting the easily breakable membrane from injury; substantially as set forth. 2nd. A case for containing cigars or other articles composed of walls forming a frame, inside which are arranged separate compartments corresponding with the number of articles to be packed, and having two easily breakable membranes closing the compartments on both sides after filling, which membranes, upon the withdrawal of the contained article, must be broken through in combination with means described for extracting samples of the article contained, consisting of a separate compartment or compartments, and convenient and ready means of access thereto; all substantially as hereinbefore described. 3rd. Boxes or cases for containing cigars or other articles, composed of walls forming a frame, inside which are arranged separate compartments corresponding with the number of the articles to be packed, and having two easily breakable membrance closing the compartments on both sides after filling, which membranes, upon the withdrawal of the contained articles, must be broken through and figures printed upon the said membranes for the purpose of checking the contents of the compartments are also torn through, all constructed substantially as and for the purposes herein set forth.

No. 41,927. Manufacture of Casks.

(*Fabrication de futailles.*)

James Shenton, of West Bromwick, County of Stafford, England, 13th February, 1893; 6 years.

Claim.—The improvements in casks and in the manufacture of the same, consisting of a cask of sheet metal, formed in two or more sections A, with bulge a^4, and ends B, substantially such as and for the purpose herein set forth and illustrated.

No. 41,928. Machine for Exhibiting Advertisements, etc. (*Porte-annonces, etc.*)

Herbert Leslie Manton, Melbourne, Victoria, Australia, 13th February, 1893; 6 years.

Claim.—1st. A machine provided with a number of press button plugs, which latter, upon being pressed, arrest a revolving plate or dial, thus exhibiting a card containing public information or advertisements, at a window placed in the face of the said machine, said dial being rotated either by turning a handle on the exterior or by an electric motor, whose circuit is completed by the said button plugs, substantially as and for the purposes hereinbefore described. 2nd. In a machine for exhibiting tabulated public information and advertisements, a dial in which holes are formed for receiving press button plugs for arresting its progress at any predetermined point, centred on a small shaft and provided with spaces on its face, containing information, and rotated to conveniently exhibit the said information at a window in its casing, substantially as explained and illustrated. 3rd. In a machine for exhibiting tabulated public information and advertisements. The peculiar shape of the press button plugs as D, with rounded ends and provided with a return pressure spring, substantially as explained and illustrated in the accompanying drawings. 4th. In a machine for exhibiting tabulated public information and advertisements, a hand wheel as B, centred on a shaft as A^1, suitably supported in bearings as A^2, a dial as A, mounted on said shaft, substantially as explained and illustrated in the accompanying drawings. 5th. In a machine for exhibiting tabulated public information and advertisements, the combination of electric motor, press button plugs and battery or other source of electricity, with a dial as A, substantially as and for the purposes herein described and illustrated.

No. 41,929. Type Distributing Machine.

(*Machine à distribuer les cāractères.*)

John L. McMillan and Charles H. Joslyn, both of Ilion, New York, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In combination with a main frame A, spindle B, mounted therein, and wheel or disc C, carried by said spindle, spider G, mounted upon frame A, and having a band or hoop H, extending beneath the wheel or disc near its outer edge, and serving to sustain the same. 2nd. In combination with a channelled wheel or disc, an encircling hoop or band made in sections, said sections being independently movable toward and from the wheel. 3rd. In a type distributing machine, the combination of a channelled rotary disc or wheel, an encircling channelled hoop or band composed of independent sections, and levers or their described equivalents, connected with the respective sections and serving to move them from and toward the disc or wheel. 4th. In combination with wheel or disc C, hoop or band L, composed of independent sections having studs *k*, bars P, bridge pieces Q connecting said bars and provided with tubular guides *i*, rods O, connected with the sections of hoops L, and levers S, pivoted to the bridge pieces Q, and having eccentric slots *m*, to receive the studs *k*, all substantially as described and shown. 5th. In combination with a distributing wheel or disc, and with a sectional receiving hoop or band encircling said wheel, guides for the several sections, adapted to sustain them during their movements toward and from the disc, and to ensure their return to the precise position required. 6th. In combination with a distributing wheel and a sectional receiving hoop or band, guides adapted to support and direct the sections while being moved, and levers, one for each section, serving to receive and advance the sections independently. 7th. In combination with a distributing wheel and with a segmental receiving section having a stud or roller, a lever provided with an eccentric slot to receive said stud or roller and effect the recession and advance of the section. 8th. In combination with a distributing wheel and with a segmental receiving section having a stud or roller, a lever provided with a slot eccentric to the pivot of the lever through most of its length, but concentric therewith at its outer end, whereby it is adapted to move the segment back and forth, and lock it in place. 9th. In combination with a distributing wheel and an encircling receiving hoop, composed of segmental sections, rods connected with said sections, rests or supports carried by said rods, and receiving type cases extending from said rests or supports to the segmental sections, substantially as described and shown. 10th. In combination with frame A, spindle B, and wheel

or disc C, spider G, provided with ring or hoop H, bars P, secured at their inner ends to said ring or hoop, bridge pieces or plates Q, connecting said bars and provided with guides *i*, hoop or ring L, composed of independent sections, each having a stud or roller, rods O extending from the hoop sections through the guides *i*, case supports N, carried by said rods, cases M, extending from supports N, to ring sections L, and levers S, pivoted to bridge pieces Q, and connected with the hoop sections, all substantially as described and shown. 11th. In a type distributing machine, a wheel provided with a series of blocks or bars, arranged at short distances apart, and with their proximate faces parallel, each block having one of its upper edges bevelled, substantially as shown. 12th. In a type distributing machine, a type containing wheel, consisting of a disc and a series of sector blocks secured upon said disc with their proximate faces parallel, and at proper distances apart to admit a line of type between them, said blocks having their opposing faces grooved, substantially as and for the purpose set forth. 13th. In combination, with wheel or disc C, having a central hub or boss, and channels *h*, springs T, seated in said channels, and filling blocks or slugs V, extended from the hub or boss of the wheel into said channels. 14th. The wheel or disc C, provided with a central hub or boss, and a channelled body, the channelled portion and the hub being separated by an open space, through which the followers and springs may be introduced or withdrawn. 15th. In combination, with wheel C, having channels *h*, provided with longitudinal grooves in their side wall, and with a stop shoulder near the forward end of the channel, a follower seated in said channel, and provided with a stop shoulder to engage with that of the groove. 16th. In combination, with wheel or body C, having channels *h*, provided with longitudinal grooves *o*, in their side walls, followers U, provided with ribs or projections *p*, the groove of one wall being terminated a short distance from the outer end of the channel, and the rib *p*, which works in said groove being cut away at the forward end of the follower, substantially as shown and described. 17th. In combination, with a containing body and a receiving body, both provided with type channels, and adapted to be moved one past the other, inclined blocks or cams projecting outward between the ends of the containing channels, and adapted to bear against the type expelled therefrom, both above and below the midlength of said type. 18th. In combination, with wheel or disc C, having channels *h*, and with encircling hoop L, having passages *g*, inclined blocks or cams W, having a broad bearing face to prevent the tipping of a type while pressed by said block. 19th. In combination, with wheel or disc C having channels *h*, and with hoops or ring L, having passages *g*, detachable cam or block W, located between the channels, substantially as shown. 20th. The combination, of a containing body and a receiving body, both provided with type channels or passages, each receiving passage having the corner of its mouth cut away on the side from which the type approach it, and fixed guards at said mouth also rounded or cut away, substantially as described and shown. 21st. In a type distributing maching, a receiving body having channels or passages to receive the type, said channels or passages being provided with fixed guards, rounded or bevelled at their outer corners. 22nd. In a type distributing machine, the combination of a main frame A, provided with a channeled loop L, a spindle B, mounted within said frame, and provided with a channelled disc C, a cup O, having a threaded stem *a*, screwed into the main frame, and a jamb nut *b*, encircling the threaded stem *a*, substantially as described and shown. 23rd. In a type distributing machine, the combination of a type containing and a type receiving body, one removable relatively to the other, said bodies being each provided with channels of proper width to contain the type, and said channels being oblique to the line separating the two bodies. 24th. The combination of a disc or wheel and an encircling hoop or band, each provided with channels to contain type, said channel being tangential to a circle concentric with but of less diameter than the disc or wheel. 25th. In combination, with a movable type containing body as C, having channels *h*, and with a fixed type receiving body as L, having channels *g*, rotary guards or wards, located at the mouths of the channels *g*. 26th. In combination, with wheel or disc C, having channels *h*, and with hoop or ring L, having channels *g*, circular guards or wards o^1, projecting into the channels *g*, and from the inner circumference of the hoop or ring L. 27th. In a type distributing machine, a type containing disc or wheel having its face provided with blocks C^1, of tapering or wedge form, the side faces of the successive blocks being arranged parallel to each other to produce intervening channels tangential to a circle concentric with, but smaller than the disc or wheel. 28th. In combination, with a type containing disc or wheel, an encircling hoop or ring composed of blocks I^1, separated a distance sufficient to produce type chambers, substantially as described and shown. 29th. In combination, with type wheel or disc C, a bed or table extending outward beyond the circumference thereof, segmental plates J^1, secured upon said bed or table, and blocks I^1, secured to the plates J^1, substantially as and for the purpose set forth. 30th, In combination, with type wheel C, encircling hoop or ring L, consisting of a series of bars I^1, having lateral ribs k^1, said bars being placed with the rib k^1, of each in contact with the side wall of the next, substantially as and for the purpose set forth. 31st. The combination of a rotary wheel or disc, bars C^1, secured thereto and provided with cam lips i^1, i^1, at their oufer ends, bars I^1, arranged side by side in a circular series about the wheel and cut away to permit the passage of the lips i^1, i^1, channels *h* and *g*, between the blocks C^1, and between the blocks I^1, and guards or wards at the mouths of the channels *g*. 32nd. In combination, with frame A, spindle B, worm wheel E, held against vertical movement, worm F, and type wheel or disc C, vertically adjustable top D, carrying the lower end of the spindle. 33rd. In combination, with the frame consisting of base A^1, and upper section A^2, with intermediate chamber c^1, type wheel C, spindle B, passsing upward through the frame, and worm wheel E, mounted in chamber c^1, and encircling the spindle, substantially as described and shown. 34th. In a type distributing machine, the combination, with the frame section A^2, having annular groove b^1, of type wheel C, having annular rib a^1, to enter said groove.

No. 41,930. Apparatus for Preparing Surgical Bandages. (*Appareil pour préparer les bandages chirurgicals.*)

John Manning Van Heusen, Albany, New York, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. A sterilizer for surgical bandages and the like, consisting of a chamber adapted to be closed at the sides and provided with a perforated or reticulated drawer, having a closed end adapted to close the opening through which the same is inserted, said chamber having a thin metallic top capable of acting as a condenser, said sterilizer being adapted to be heated by a lamp or other heating device, substantially as described. 2nd. A sterilizer for surgical bandages and the like, consisting of a chamber adapted to be closed at the sides and provided with a perforated or reticulated drawer, having a closed end adapted to close the opening through which the same is inserted, said chamber having a thin inclined metallic top capable of acting as a condenser, said sterilizer being adapted to be heated by a lamp or other heating device, substantially as described. 3rd. A portable, knock down sterilizer for surgical bandages and the like, consisting of a chamber adapted to be closed at the sides and provided with a perforated or reticulated drawer having a closed end adapted to close the opening through which the same is inserted, said chamber having a thin top capable of acting as a condenser, and suspended or held above a lamp or heating device by the folding loops or supports *a*, *a*, substantially as described.

No. 41,931. Wire Strand, Rope or Cable.

(*Brin de fil de fer, de corde ou câble.*)

Telford Clarence Batchelor, of 8 Barons Court Road, West Kensington, London, and Arthur Latch, of Hay Mills, near Birmingham, Warwick, both in England, 13th February, 1893; 6 years.

Claim.—1st. Combining metal strips or sections of shapes which, when placed together, constitute a wire, as hereinbefore described, and the employment of a number of such wires to form a strand, rope or cable. 2nd. The manufacture of wire strands, wire ropes or cables from wires built up and forming among themselves a circular or equivalent shaped body capable of being used like single wires in the lay or twist thereof, as described, and substantially as shown in the annexed drawings. 3rd. The manufacture of wires for use in a laid or twisted wire strand or wire rope, the strips constituting such wires having one or more flat or irregular surfaces which, when placed together, cause them to assume a round or an equivalent shape.

No. 41,932. Electric Magnet. (*Aimant électrique.*)

Richard Varley, Englewood, New Jersey, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The combination in an electro-magnet of the helix, composed of two parallel wound wires, one being covered and the other uncoverd, and one layer of wire insulated from the next layer of wire, substantially as set forth. 2nd. An electro-magnet having a helix of two parallel wires, one with a fibrous covering and the other without a fibrous covering, and wound in layers insulated one from the other, substantially as set forth. 3rd. An electro-magnet having a helix of two similarly sized parallel wires, one with a fibrous covering and the other without a fibrous covering, and wound in layers insulated one from the other, substantially as set forth. 4th. An electro-magnet having a helix of two parallel wires, one with a fibrous covering and the other without a fibrous covering, and wound in layers insulated one from the other, and the ends of the respective helices connected directly together, substantially as set forth.

No. 41,933. Steam Actuated Air Pump.

(*Pompe pneumatique actionnée par la vapeur.*)

Edwin Smedley, Dubuque, Iowa, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The piston air valve B, having cavities *h*, *h*, therein serving to open and close the ports *a*, a^1, and *b*, b^1, and having an oil hole through it to allow the free movement of the valve, and to permit the air and oil to flow from one end of the valve to the other as the valve moves from end to end. 2nd. In combination with the valve cage W, the piston air valve provided with the exterior oil room or recess V for caging the oil, and with the interior passage *i*, as and for the purposes set forth. 3rd. In combination with the air cylinder and piston, and the described piston air valve B, a main steam valve directly connected to said air valve, and an auxiliary

steam valve and actuating devices intermediate the air piston and the auxiliary steam valve, whereby the air valve is adapted to be thrown by the main steam valve prior to the movement of the air piston. 4th. In combination with the air piston P, and with the piston air valve B, constructed and operated as described, and having the passage *i* through it, the rocker arm or rod *l*, its adjusting screws *m*, m^1, the lever *n*, having tappets *x*, *x*, cross head T, through which said lever slides, and air piston rod T^2, carrying said cross head, and connections intermediate the said rocker *l*, and the piston air valve B. 5th. In combination with the air piston P, and with the piston air valve B, constructed and operated as described, and having the passage *i* through it, the rocker arm or rod *l*, its adjusting screws *m*, m^1, the lever *n*, having tappets *x*, *x*, cross head T, through which said lever slides, air piston T^2, carrying said cross head, arm l^4, connecting rod *k*, auxiliary steam valve S, main steam valve A, and connecting rod C.

No. 41,934. Back Band Buckle. (*Boucle de dossière.*)

Seth Ward, Princeton, Indiana, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In a back band buckle and trace carrier, the combination of a rectangular frame A, composed of the side bars a^2, and end bars a a^1, the upper ends of its side bars being curved outwardly to bring the upper bar a forward of the frame, intermediate transverse bars a^3 a^4, connecting the side bars a^2, a depending trace carrier connected to the lower bar a^1, and a protecting pad covering the back of the buckle and being riveted to the frame thereof below its uppermost bar, whereby when the back band webbing is interlaced in the buckle, its free end shall be confined between the pad and the main part of the band, substantially as described. 2nd. The combination of a rectangular buckle frame consistng of the side bars a^2 a^2, and the transverse bars a a^1 a^3 a^4, the two latter being intermediate the others, and one or both provided with spurs a^5, a depending trace carrier formed integral therewith and consisting of an open elliptical frame B, and a vertical arch *b*, extending from the upper to the lower bar of said elliptical frame, said arch being provided with an inwardly turned pin b^1, projecting into and terminating near the center of the ellipse, and a pad riveted to the back of the buckle frame, substantially as described.

No. 41,935. Car Coupler. (*Attelage de chars.*)

Charles W. Diedrich, Concord, New Hampshire, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The coupling link having a rounded part *h*, an oblong slot *w*, and a pointed end *q*, substantially as set forth. 2nd. The coupling link having a rounded part *h*, an oblong slot *w*, and a pointed end *q*, in combination with drawheads, one of which has an oblong mouth with its longest dimension in the vertical plane, substantially as set forth. 3rd. The coupling link having a rounded part *h*, an oblong slot *w*, and a pointed end *q*, in combination with drawheads, which have each an oblong mouth with its longest dimension in the vertical plane, substantially as set forth. 4th. A drawhead having an enlargement on its side, provided with a receptacle for a pin stopping plate and having openings for a leg or pin extending through the face of the drawhead, in combination with a stop plate having an operating pin and with a coupling pin, substantially as set forth. 5th. A drawhead having an enlargement on its side, provided with a receptacle for a pin stopping plate and having openings for a leg or pin extending through the face of the drawhead, in combination with a stop plate having an operating pin with a coupling pin, said drawhead having a boss or extension about its pin operating to receive and support the pin, substantially as set forth. 6th. A drawhead having downwardly inclined lateral openings for a coupling pin, substantially as set forth. 7th. A drawhead having downwardly inclined lateral openings for a coupling pin, in combination with a spring normally tending to force the pin into said openings, substantially as set forth.

No. 41,936. Method of Making Wheels and Tyres for Road Vehicles (*Méthode de fabriquer des roues et bandages de voitures.*)

Walter Swain and William Philipson, both of Hillford Mill, Astley Bridge, near Bolton, Lancaster, England, 13th February, 1893; 6 years.

Claim.—1st. The combination, with a pneumatic tyre consisting of an india-rubber or other elastic pressure tube, and a canvas or other covering of the india-rubber or other elastic sole of the form or section shown in the drawings with a flat rolling surface of unequal thickness, and secured to the rim of the wheel, as and for the purposes herein set forth. 2nd. The combination, with a pneumatic tyre consisting of an india-rubber or other elastic pressure tube, and a canvas or other covering of the metallic concaved rim secured to the outer periphery of the wheel rim, an india-rubber or other elastic sole with a flat rolling surface of unequal thickness mounted on canvas, and secured to the rim of the wheel, as and for the purpose herein set forth. 3rd. The combination, with a pneumatic tyre composed of an india-rubber or other elastic pressure tube, a canvas or other covering, and an india-rubber or other elastic sole with a flat rolling surface of unequal thickness, of the outer rim or ring of india-rubber or other elastic material of unequal thickness secured thereon by india-rubber or other solution or cement, as and for the purpose herein set forth.

No. 41,937. Potato Cutter. (*Coupe-patates.*)

Lewis Augustus Aspinwall, Jackson, Michigan, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The combination in a potato cutter, of a longitudinal knife having its cutting edge upwardly, with a series of transverse knives crossing below the same and having their upward cutting edges at the same level and at increasing inclinations from the centre, so that the opening through which the potato sections pass will be as wide near the backs of the knives as at their edges, a hopper for guiding the potatoes to the knives, and a vertical plunger passing between the knives, substantially as set forth. 2nd. The combination in a potato cutter, of a table, transverse knives received at their ends into recesses in the table, a longitudinal cutter, hopper jaws pivoted near their upper edges and having interlocking gear segments, a spring to press the lower edges of the jaws towards each other, a plunger and handle for moving the same, and vertical slide ways for supporting the plunger, substantially as set forth. 3rd. The combination with the handle and plunger having a slotted lower end forming fingers, of vertical slide ways for the plunger, a table and frame for supporting the same, stationary hopper ends, hopper jaws pivoted between the stationary ends, a spring to press the lower edges of the jaws towards each other, a longitudinal knife and transverse knives, and a screen below the table for receiving the cut potato sections, substantially as set forth. 4th. The combination in a potato cutter with the stationary knives, of a movable plunger, slotted at its lower end to form fingers, hopper jaws having rounded ends and interlocking gear segment, a spring to press the lower edges of the jaw towards each other, the upper edge of the front jaw being removed to facilitate the insertion of the potato, substantially as set forth. 5th. The combination in a potato cutter with the stationary knives and movable plunger, of a yielding hopper into which the potato is passed, and a stop for the end of the potato to determine the position of the same in relation to the stationary knives, substantially as set forth. 6th. The combination in a potato cutter, of a hopper, longitudinal and transverse knives, a plunger slotted at its lower end to form fingers for pressing the potato against and between the cutting knives, an inclined screen upon which the potato sections fall, and an agitating device receiving its motion from the plunger for shaking the screen, substantially as set forth.

No. 41,938. Washstand. (*Lavabo.*)

Nathan Oscar Bond, Fairfax Court House, Virginia, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. A washstand, provided with a cover composed of a rigid portion and a flexible portion, substantially as shown and described. 2nd. A washstand, provided with side pieces extending upwardly from its top, and having a cover consisting of a rigid portion and a flexible portion, adapted to engage said side pieces, substantially as shown and described. 3rd. A washstand, provided with side pieces and forwardly extending pivoted arms, and the cover consisting of a rigid portion secured to the said arms, and a flexible portion secured to the rigid portion and engaging said side pieces, substantially as described. 4th. In a washstand, having the side pieces provided with rounded top portions, the combination, with the pivoted forwardly extending arms, of the cover consisting of the board secured to said arms, and the flexible portion secured to said board, and engaging the rounded portions of the side pieces, and the weight secured to said flexible portion, substantially as shown and described. 5th. In a washstand, having the side pieces provided with rounded top portions, the combination, with the cover consisting of the rigid portion and the flexible portion for engaging said side pieces, of a mirror secured to the underside of said rigid position, and a weight secured to said flexible portion, substantially as shown and described. 7th. The combination, in a washstand, with supports for a rolling pitcher having elongated bearings, of a rolling pitcher provided with trunnions for engaging said elongated bearings, substantially as shown and described. 8th. The combination, in a washstand, with supports for a rolling pitcher having elongated bearings, of a rolling pitcher provided with trunnions for engaging said bearings, one of said parts having a friction surface to engage the other, substantially as described. 9th. The combination, with the supports for a rolling pitcher provided with elongated bearings, of a rolling pitcher provided with trunnions covered with rubber or other like material for engaging said elongated bearings, substantially as shown and described.

No. 41,939. Coin Case. (*Caisse à monnaie.*)

Reuben Dillon Culver, Logan, Ohio, U. S. A., 13th February, 1893; 6 years.

Claim.—In a coin case, the combination of a casing and a lid, the casing having a series of compartments which have their bottoms arranged on graduated planes, the compartments for the smaller coins having less depth in succession than the compartments for the next larger coins, whereby the upper edges of all the coins will be upon a common plane, and the casing having ways a^1, at the top, in which the lid is adapted to be secured above the coins and in proximity thereto, and the ways a^2, at the bottom, also designed for the reception of the lid, substantially as and for the purpose set forth.

No. 41,940. Front Gear for Vehicles.

(*Avant train de voiture.*)

William North Morrell and Charles Aldrich Eddy, both of Waterloo, New York, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The combination, in the fore carriage or front gear of wheeled vehicles, of the axle, the springs B, B, the bed or bar C, the irons D, D, each made in one continuous piece of iron or metal bent, substantially as described, the head irons or stays E, E, the side blocks F, F, and the clips G, G, all arranged together, substantially as specified, and for the purposes set forth. 2nd. The combination, with the bed or cross bar of the fore carriage or front gear for wheeled vehicles, of a fifth wheel having a raised open centre and clamped or clipped to the said bar between the said centre and the outer circle or rim of the said wheel, substantially as and for the purposes specified. 3rd. The combination, with the bed or cross bar of a fore carriage or front gear on wheeled vehicles, of a fifth wheel having a raised open centre connected to an outer circle or rim in the same plane by means consisting in part of the bars or bed irons *f, f*, clipped or clamped to the said bed or bar, substantially as and for the purposes specified. 4th. The combination, in the fore carriage or front gear for wheeled vehicles, of the bed or cross bar, the irons D, D, and a fifth wheel, all clamped together by means of the same clips or clamps, substantially as and for the purposes specified. 5th. The combination, in a fore carriage or front gear for wheeled vehicles, of the bed or cross bar, the irons D, D, and a fiifth wheel having a raised open centre, all clamped together by means of the same clips or clamps, substantially as and for the purposes specified.

No. 41,941. Vise. (*Etau.*)

Clare Ernest, Bay City, Michigan, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In a vice, the combination of the base plate 2, provided with a central opening 3, and the notches 55, the jaw 4, having opening 5, and lower cylindrical portions 7, passed through said opening 3, and having a shoulder 6, upon the base plate with the dog 57, pivoted to the jaw above the shoulder, and adapted for engaging with said notches 55, a threaded nut within the opening 5, a hollow arm passed into said opening 5, over the nut, a screw extending through the arm and through the nut and the jaw 38, on the outer end of the arm, substantially as set forth. 2nd. In a vice, the combination of the jaw 4, having a lower portion 7, provided with a vertical opening 10, and with a transverse opening 5, with a nut section 12, within said opening 5, and having a portion 14, extending into said opening 10, and provided on its lower portion with opening 15, and with a shoulder 23, the upper nut section 16, in the opening 5, and having a portion 18, extending into the opening 15, and provided with an opening 19, on its lower portion with the lever 24, pivoted to the inner side of the portion 18, and having an arm 26, extending upward to contact with said shoulder 23, and with a weighted opposite arm, and means for oscillating the lever to free the arm from said shoulder, and for moving the nut sections in opposite directions, the screw between the nut sections and the transverse arm for carrying the screw, and passed into said opening 5, and provided on its outer end with a jaw 38, substantially as set forth. 3rd. The combination in a vice, of the stationary jaw provided with a transverse opening 5, and with a vertical opening 10, in its lower portion a hollow arm 37, passed into the opening 5, and carrying a jaw 38, on its outer end, and a screw 40, extending through the arm, a sectional nut 11, for engaging the screw within the opening, and composed of the lower section 12, having a portion 14, extending into said opening 10, and provided with a shoulder 23, and with an opening 15, the upper section 16, provided with downwardly extending portion 18, having an opening 19, the lever 24, between said portions 14 and 18, and pivoted to the portion 18, and having an upwardly extending arm 26, in contact with shoulder 23, and with an oppositely extending weighted arm 27, and with a forwardly extending lug 28, with the transverse lever 29, having its inner end passed through the openings 15 and 19, and pivoted at 36 to the wall of the opening 10, and a rod 33, pivotally secured by its one end to the outwardly extending arm of lever 29, and a foot lever pivoted to the opposite end of the rod, substantially as set forth. 4th. The combination in a vise, of the stationary jaw, a hollow arm passed through the stationary jaw, and carrying on its outer end a lower jaw section 43, provided with a vertical opening 44, having vertical grooves 48, in its lateral sides, and with a curved groove 45, in its upper surface, with the upper jaw section 49, provided with a downwardly extending journal 50, within said opening 44, and having lugs 51, on the front and rear sides of its lower end, extending over the lower edges of said opening, and with a bead 52, resting into said groove 45, and means for retaining the said journal against turning in the opening, substantially as set forth.

No. 41,942. Fire Escape. (*Sauveteur d'incendie.*)

John Francis Shaw, Auburn, New York, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In a fire escape a casing consisting of a substantially horse shoe-shaped wall having one side plate permanently secured thereto, the said side plate being provided with an inwardly turned flanged, also a separate side plate having an inwardly turned flange around its end and adapted to fit loosely over and close the open side of the wall, together with a rope guide and friction brake having outwardly projecting flanges or hangers for engaging with the flanges on the side plates to connect the rope guide with the casing, substantially as and for the purpose described. 2nd. In a fire escape a casing adapted to contain the working parts, the said casing being composed of a wall and two side plates, together with a pin or bolt passed centrally through the side plates and holding the parts together, the said pin also acting as a shaft upon which is mounted the drum and rocking arm, substantially as and for the purpose described. 3rd. In a fire escape a rope guide and friction brake provided with passages for the rope of substantially S-shaped in central longitudinal section, the inlets and outlets of the said passages being opposite to each other, substantially as and for the purposes described 4th. In a fire escape the combination with the casing containing the working parts, of a supporting bail formed in two parts, one part of said bail being attached to each of the separate parts of the casing, the said parts of bail being each halved at their ends, and adapted to fit one upon the other when the casing is adjusted, together with a pin or bolt passed centrally through the casing and secured by a nut, locking the parts of the casing together, substantially as and for the purposes described.

No. 41,943. Hammer. (*Marteau.*)

Julius Caesar Richardson, Smethport, Pennsylvania, U.S.A., 13th February, 1893; 6 years.

Claim.—1st A tool having a metal body portion and a tack or nail drawing claw consisting of a projection integral with the body of the tool and a piece of metal harder than the tool body brazed to the projection and extending beyond the same, substantially as set forth. 2nd. A tack or nail drawing tool having a claw supporting stem or shank inclined backward,—that is, toward the handle,—and having a claw carried by such stem or shank projecting forward,—that is, away from the handle,—substantially as set forth. 3rd. A hammer having the head shank inclined backward, the claw stem also inclined backward, and the forward projecting claw carried by the claw stem, substantially as set forth. 4th. A hammer or similar tool provided with a nail holding groove 9, and with one or more transverse grooves 10, substantially as set forth.

No. 41,944. Machine for Shaping Irregular Forms.

(*Machine à dresser les formes irrégulières.*)

William Reid, West Hebron, New York, U. S. A., 13th February, 1893; 6 years.

Claim.—1st. In a machine for dressing irregular forms or articles, the combination of the main frame, the endless conveying bed arranged therein, the automatically operating clamps carried by said bed, the horizontal guide bar upon the top of the frame having its edge formed with alternate elevations and depressions, the vertically adjustable slides carrying the cutters, the cam shaft whose cams adjust the vertical position of the said slides, and an obstacle in the path of the clamps by encountering which each is reversed, substantially as set forth. 2nd. In a machine for dressing irregular forms or articles, the combination of the endless conveying bed carrying the automatically operating clamps, the main frame having on its upper side a horizontal bar formed with alternate elevations and depressions, a pair of oppositely rotating cutters, and vertically moving slides carrying said cutters, together with the cam shaft for adjusting said slides, and an object in the path of the clamps by encountering which they are reversed, as set forth. 3rd. In a machine for dressing irregular forms or articles, the combination of the endless conveying bed, the automatically operating clamps carried thereby, consisting essentially of a rigid jaw and a movable arm provided with a jaw, to vertically adjust them, the horizontal bar on the top of the main frame formed with the alternate depressions and elevations, and the obstacle arranged in the path of the clamps to be encountered thereby, as set forth. 4th. In a machine for dressing irregular forms or articles, the combination, with the main frame having a horizontal bar upon the same, the edge of which is formed with alternate elevations and depressions, and the endless conveying bed, of a reversible clamp for holding the articles to be dressed, consisting of a plate secured to the bed, a rigid jaw on said plate and a movable jaw having a shaft provided with a curved arm adapted during the progressive motion of the clamp to encounter an obstacle and thereby reverse the clamp, substantially as described. 5th. In a machine for dressing irregular forms or articles, the combination, with the dressing mechanism and the endless conveying bed, of a clamp for the article to be dressed, consisting of a flat plate secured to the bed, a rigid jaw on said plate, a movable jaw having a shaft provided with a rack and a horizontally curved arm, a pivoted segment lever engaging said rack, a bar or surface on the main machine frame having alternate elevated and depressed sections, whereon the end of the segment lever rides, and the post arranged in the path of the curved arms to be encountered thereby, substantially as set forth. 6th. In a machine for dressing irregular forms or articles, the combination, with the conveying bed and the cutters, of an automatically operating reversible clamp carried by said conveying bed and consisting essentially, of the flat plate secured to the bed, a rigid jaw on said plate, a movable jaw having a shaft suitably journalled in standards on the plate, said jaw being provided with retaining spurs which embed themselves in the article, and said shaft having a rack and also a horizontally curved arm, the pivoted segment lever engaging said rack, a bar or surface

on the main frame having alternate elevations and depressions whereon the segment lever rides, and the obstacle in the path of the curved arm, substantially as set forth. 7th. In a machine for dressing irregular forms or articles, the combination, with the vertically adjustable slides, the cutting devices carried thereby, the conveying bed consisting of parallel chains having interpivoted links, and the duplicate sprocket wheels arranged in each end of the frame, of a series of clamps carried by said chain, each consisting of a plate secured to opposite links of the said parallel chains, a rigid jaw on said plate, and a movable jaw having a suitably journalled rack shaft provided with a horizontally curved arm, the pivoted segment lever engaging said rack shaft, the bar on the upper side of the frame formed with alternate elevated and depressed sections, and the device in the path for shifting the curved arm, substantially as described. 8th. In a machine for dressing irregular forms or articles, the combination, of cutting devices, an endless conveying bed and a clamp thereon, consisting essentially of the plate secured to the bed, a rigid jaw on the plate, and a movable jaw having a shaft suitably journalled in standards on the plate, and provided with a rack, the pivoted segment lever engaging said rack, and the bar or surface on the upper portion of the machine frame, having alternate raised and depressed sections whereon the segment bar is adapted to move, substantially as described. 9th. In a machine for dressing irregular forms or articles, the combination, of the main frame of the machine, the vertical frames arranged thereupon, the vertically adjustable slides moving in said frames, the cutting devices carried by said slides, the cam shaft for adjusting the slides the endless conveying bed, and the self operating clamps carried by said bed together with the horizontal guide bar on the top of the main frame, formed with alternate depressions and elevations, and the obstacle in the path of the clamps which are encountered thereby so as to reverse them, substantially as set forth. 10th. The combination, of the main frame, the vertical frame secured thereupon having ways, the vertically adjustable slides moving in said ways, the cutting devices carried by said slides, the shaft provided with clamps which operate upon the lower ends of said slides, for the purpose of adjusting the same, the mechanism for imparting to said cutting devices a reverse rotation, the endless bed consisting of the parallel chains passing over sprocket wheels, and the automatically operating reversible clamps, constructed substantially as described, whereby the opposite sides of the blank are presented to turn to the action of the cutting devices, substantially as described. 11th. In a machine for dressing irregular forms or articles, the combination, of the main frame, the vertical frame thereupon, the vertically adjustable slides in said vertical frame, the reversely rotating cutters carried by said slides, as specified, the cam shaft whose cams adjust the vertical position of the slides and thus regulate the cutters, the main driving shaft having pulleys belted to the pulleys on the cutter shafts, and the endless bed with its clamps, substantially as described. 12th. The combination of the main frame, the conveying bed, consisting of parallel chains passing over sprocket wheels located at either end of the machine, the vertical frames mounted on the main frame, and having gibbed guideways, the vertically adjustable slides moving in said guideways, the cutter shafts journalled on said slides, and each carrying a cutter head and a pulley, the cam shafts operating upon the lower ends of the slides for adjusting the same vertically, the driving devices for actuating the cutters, and the adjustable clamp, consisting of a rigid and a movable jaw, substantially as described. 13th. The combination of the main frame A, the cutting devices, the conveying bed, and the automatically reversible clamp, consisting of a plate H, secured to said conveying bed and slotted at j, a fixed jaw I, mounted on said plate, a movable jaw J, having shaft L, journalled in standards K, K^1, mounted on said plate H, said shaft L, having rack L^1, together with the pivoted segment lever k, having roller l, adapted to ride on the straight edges m and n, on the upper side of the machine frame, substantially as and for the purpose described. 14th. The combination of the main frame A, the vertical frames F, F^1, F^2, F^3, mounted on the main frame, the vertical slides G, G^1, G^2, G^3, moving in the vertical frames, the cam shaft E, having cams e, e^1, e^2, e^3, bearing respectively upon rollers g, g^1, g^2, g^3, carried respectively by the frames G, G^1, G^2, G^3, and the endless conveying bed and cutting devices, substantially as described.

No. 41,945. Hot Air Furnace. (*Calorifère à air.*)

Henry Newton Hemingway, Auburn, New York, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In a hot air furnace, a base having a central opening and an annular flange extending around the opening, a fire pot having its lower end close the said central opening, a set of flues above and supported by the upper end of the fire pot, an inclosing case having its lower end supported upon the outer edge of the annular flange, and an air inlet opening opposite the fire pot, substantially as shown. 2nd. In a hot air furnace, a base, a fire pot supported thereon, a series of flues above the fire pot, an inclosing case separated from the flues to form an air space at each end and extending above the flues so as to form a dome, the said dome cut away at one end for the purpose described, the plate L, an air opening below the plate and the division plates N, whereby the air circulates around the fire pot back and forth through the flues and to the dome, combined substantially as shown. 3rd. In a hot air furnace, a base having an upwardly and outwardly curved upper portion, a fire pot of smaller diameter, supported by the base within the curved portion, a set of flues above the fire pot and supported thereby, heads at each end of the flues for closing the spaces between them, the inclosing case having its lower edge secured to the curved portion, the division plates L, N, and an air inlet opening between the plate L, combined substantially as shown. 4th. In a hot air furnace, a base, a fire pot, an angular fire box above the fire pot, consisting of flues, and an outer casing which engages only the corners of the fire box, whereby the space between the casing and the fire box is divided into separate chambers, combined substantially as specified. 5th. In a hot air furnace, a base, a fire pot, an angular fire box above the fire pot, consisting of flues having spaces between them, heads therefor which closes the spaces, and the division plates L, N, combined substantially as shown. 6th. The combination, with a hot air furnace having an outer casing and a fire pot therein, of a coal magazine secured to the outer side thereof, having a door in its lower end, and a transverse slide which extends across the magazine above the door, and a chute which connects with the magazine at one end below the said slide and at the opposite end with the fire pot, substantially as described. 7th. The combination, with a hot air furnace having an outer casing and a fire pot therein, of a coal magazine secured to the outer side thereof having a door in its lower end, a transverse slide which extends across the magazine above the door, a chute which connects at one end with the fire pot and at its opposite end with the magazine below the said slide, and a second vertical slide which extends across the outer end of the chute, substantially as specified.

No. 41,946. Fly Paper.

(*Papier pour la destruction des mouches.*)

Otto Thum and William Thum, Grand Rapids, Michigan, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. A pack of sticky fly paper composed of interior sheets coated on both sides, and having uncoated margins, and having the outside sheets or covers uncoated, substantially as described. 2nd. A pack of sticky fly paper formed of a web having coated interior surfaces, and wound or folded upon itself with uncoated exterior surfaces, substantially as described. 3rd. A pack of sticky fly paper formed of a web having coated interior surfaces, wound or folded upon itself, combined with a supporting plate, substantially as described. 4th. A pack of sticky fly paper formed of a web having coated interior surfaces, wound or folded upon itself, a supporting plate and a box or frame having folding standards adapted to receive the supporting plate, substantially as described.

No. 41,947. Signal for Railways.

(*Signal de chemin de fer.*)

Richard Stepen Wiles, Reading, England, 13th February, 1893; 6 years.

Claim.—1st. In a signalling device of the kind described, a striking arm G on the engine or guard's van, moved in a horizontal manner by a rail at the side of the line, and furnished with a spring g^1, which brings it back to central position whenever released, connected to a rod operating signals, and brake by suitable levers and links, a slot being provided in the link H, which allows the arm to be moved in one direction without operating the signals, substantially as described, and for the purposes specified. 2nd. In a signalling device of the kind described, the combination with horizontal striking lever, connections and rod, operating signals and brake on the train, of a rail A at the side of the line, mounted on arms B and furnished with weight a, withdrawn when desired from operative position by a wire or chain proceeding from the signal box, substantially as described and shown. 3rd. The combination, with a horizontal striking lever, connecting links and levers and rods operating signals and brake on the train of two rails A at the side of the line, mounted on arms B and furnished with weights a, withdrawn when desired from operative position by connections c proceeding from the signal box, one rail being placed at the distance signal, and one at the home signal, substantially as described and shown, and for the purposes specified.

No. 41,948. Manufacture of Matches.

(*Fabrication des allumettes.*)

Charles M. Bowman, Lebanon, Pennsylvania, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. An improved article of manufacture, a match having a portion of the splint removed from the centre of one end forming a normally open slot, and the fulminate keyed into and surrounding the splint. 2nd. An improved article of manufacture, a match having a slot in one end formed by removing a portion of the splint, and bounded on two sides by longitudinal projections, in combination with fulminate keyed into said slot, surrounding the projections and completely encasing the end of the match. 3rd. A match splint having uniform parallel sides throughout its length, a portion of one end removed forming a slot and provided with two parallel walls constituting a fulminate receptacle, in combination with fulminate keyed into the fulminate receptacle and encasing the end of the match. 4th. The method of making matches, which consists in forming cards of match splints, cutting slots in the outer ends of the splints, and applying paraffine and fulminate to entirely envelop the

tips of the splints. 5th. The method of making matches, which consists in forming match cards with an uncut portion or body and match splints on both sides of said body integral therewith, cutting slots in the outer ends of the splints, assembling the cards in a suitable tray, separating the cards and securing them in a separated position in a holder at the uncut portion of the card, and treating the tips with paraffine and fulminate. 6th. A match card holder consisting of parallel rods, bars engaging one of said rods at one end to swing thereon, and provided with a slot on the underside of the opposite end to engage the opposite bar of the holder, a clamping plate and means for applying tension thereto.

No. 41,949. Churn. (*Baratte.*)

Alpheus Hamlin, Almonte, Ontario, Canada, 13th February, 1893; 6 years.

Claim.—1st. A tilting churn body or box A, having inlet and outlet air tubes D, D^1, at the top, for aerating the cream while churning, as set forth. 2nd. The combination, with a tilting churn body A, or box, supported on a frame B, by trunnion plates C, of the tilting lever E, pivoted to said frame, a wheel F, mounted on one of the trunnions of said plates C, and a cord G, wound around the periphery of said wheel, the ends of said cord secured to said lever divergently for tilting the churn body A, by the tilting motion of the lever, as set forth. 3rd. The combination, with the supporting frame B, and tilting churn body or box A, carried by trunnions, of the tilting lever E, fulcrumed to said frame, a wheel F, keyed on one of the trunnions, a cord G, wound around said wheel, the ends of said cord secured to the lever, and a spring H, intervening said wheel and lever, whereby the ends of said spring will be alternately depressed by the lever to cause reaction, as set forth.

No. 41,950. Cleaner for Oats.

(*Machine pour nettoyer l'avoine.*)

George H. Rich, Chicago, Illinois, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. In a separating machine, and in combination with suitable supporting, driving and feeding devices, a separating apron comprising two link belts upon opposite sides, and a series of pocketed metal plates filling the space between the two belts, the meeting edges of the upper surface of these plates being substantially in line with the pivotal axis of the links and the lower portions of the adjacent edges of the plates being bevelled to prevent cramping as the apron bends downward, substantially as described. 2nd. A travelling apron carried by link belts at its opposite edges, and comprising a series of plates extending between the belts, the adjacent upper edges of these plates being substantially in line with the pivotal axis of the links, and the lower edges of the plates being bevelled away to avoid cramping in bending the apron, substantially as described. 3rd. In a separating machine, and in combination with suitable supporting, driving and feeding devices, an inclined vibrating apron comprising two link belts upon opposite sides, and between them a series of metal plates having depressions in their surfaces, substantially as described.

No. 41,951. Stopper for Bottles.

(*Bouchon de bouteille.*)

William John Ferris, Louisville, Kentucky, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. A stopper for bottles, flasks and like receptacles, consisting of a valve seated upon a discharge opening of the receptacle, and a retaining disc locked in place beyond said valve and within the neck of the receptacle, passageways for the exit of the liquid contents being provided between the outer periphery of the retaining disc, and the inner wall of the bottle neck, substantially as described. 2nd. A stopper for bottles, flasks and like receptacles, consisting of a valve seated upon a discharge opening of the receptacle, and a retaining disc locked in place beyond said valve and within the neck of the receptacle, said disc being provided with peripheral channels or recesses for the exit of the liquid contents, substantially as described. 3rd. A stopper for bottles, flasks and other receptacles, consisting of a valve seated upon a discharge opening of the receptacle, and a retaining disc locked in place beyond said valve and within the neck of the receptacle, said disc being provided with zig-zag peripheral channels or recesses for the exit of the liquid contents, substantially as described. 4th. A retaining disc for bottle stopper valves provided on its periphery with an angular recess, in combination with the bottle neck having a co-operating recess, and a resilient spring or catch, substantially as described. 5th. A retaining disc for bottle stoppers, valves provided on its periphery with an angular recess, in combination with a bent spring adapted to engage within said recess and with a corresponding recess of the bottle neck, substantially as described. 6th. In a bottle stopper, the combination, with the closing valve seated upon the discharge opening, of a stem projecting within the bottle and tending to maintain the valve upon its seat when the bottle is tilted side wise, substantially as described. 7th. In a bottle stopper, the combination, with the closing valve seated upon the discharge opening, of a hollow stem projecting within the bottle, and tending to maintain the valve upon its seat when the bottle is tilted side wise, and admitting air into the interior of the bottle when the bottle is inverted, substantially as described. 8th. In a bottle stopper, the combination of a valve seated upon the discharge opening, and a retaining disc adjacent thereto, the valve being provided with an aperture for the admission of air into the bottle when the bottle is inverted, substantially as described. 9th. In a bottle stopper, the combination of a valve seated upon the discharge opening, and a retaining disc adjacent thereto, the valve being provided with a valved aperture for the admission of air into the bottle when the bottle is inverted, substantially as described. 10th. In a bottle stopper, the combination of a valve seated upon the discharge opening, and a retaining disc adjacent thereto, the valve being provided with projections to prevent it adhering to the under side of the retaining disc, substantially as described. 11th. In a bottle stopper, the combination of a valve seated upon the discharge opening, and provided with an aperture for the admission of air into the bottle when the bottle is inverted, and with projections to prevent it from adhering to the underside of the retaining disc, and to permit the free passage of air through the valve, substantially as described. 12th. In a bottle stopper, the combination of a valve seated upon the discharge opening, with a tube passing through said valve to the lower part of the bottle, a bulb surrounding the lower end of said tube, and a valve governing an opening in said bulb, substantially as described.

No. 41,952. Breast Collar. (*Harnais à poitrail.*)

Cornelius Theodore Cain, Owensborough, Kentucky, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. As a new and improved article of manufacture, the breast collar herein described, consisting of the leather sheathing or collar proper formed at the juncture of its front and sides, with bends extending upward from the front to the side portions of the collar, the neck strap connected at its ends with the sides of the collar at points in advance of the rear ends of said sides, and two spring metal shoulder plates incased in said sheathing, said plates being arranged with their forward ends terminating on opposite sides of the middle portion of the front of the collar, whereby said middle portion is left flexible and free of metal bracing, and extending thence back up the bent portion of the collar, and rearwardly along the sides, and terminating at a point in rear of the connection of the neck strap, whereby to prevent the connection with the shoulder strap from drawing the sides of the collar out of line, said plates being cut to form the downward bend, and bent permanently to conform to the turn of the shoulder at the juncture of the sides and front of the collar, all substantially as and for the purposes set forth. 2nd. As a new manufacture, the permanently shaped spring metal shoulder plate D, bent vertically edgewise between its ends, as shown at D^2, the rear end D^1, being inclined rearward and downward on a straight line, and the forward end D^3, being inclined or curved downward from the bend D^2, and inward to conform to the shape of the shoulder, substantially as and for the purpose set forth.

No. 41,953. Trunks. (*Coffre.*)

Finlay Dow Barrington, Montreal, Quebec, Canada, 13th February, 1893; 6 years.

Claim.—1st. The combination, with a trunk, its hinged lid or cover, and supports for the tray, of a tray resting on said supports and connections between it and said cover, whereby upon raising this latter such tray will be slid automatically into same for a part of its length, as set forth. 2nd. The combination, with a trunk, its hinged lid or cover, and supports for the tray, of a tray in one or more parts resting on said supports, and slotted connections between such tray and said cover, whereby upon raising this latter such tray or one of the parts thereof will be slid automatically into same for a portion of its length, and be capable of rotation into a position so as to be wholly contained within said cover, as set forth. 3rd. The combination, with a trunk, its hinged lid or cover, and supports for the tray flush with the upper edges of said body, of a tray in one or more parts such as D, D^1, resting on said supports and link connections E, E, between the rear portion D, of such tray and said cover, as and for the purposes set forth.

No 41,954. Hanger for Grindstones.

(*Ferrure de meules.*)

Ole H. Peterson, Grove City, Minnesota, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The combination with the shaft, of the bearings therefor and means for attaching the power device to said shaft, said shaft having several integral arms containing adjustable set screws adapted to engage one side of the grindstone to prevent the same from turning and by which the stone is trued, and a collar provided on the shaft to engage the other side of the stone, substantially as described. 2nd. The combination with the shaft, having the integral arms 11, and lugs 20, of the bearings for the shaft, said arms provided with small holes 13, set screws arranged therein, locking nuts 16 on said screws, whereby the same are forced into engagement with one side of the grindstone, and a collar provided with the annular opening and slots 27, whereby the same may be passed over the lugs 20, to engage with the other side of the stone, substantially as described. 3rd. The combination with the shaft, having the enlarged portion 7, and the integral arms 11 projecting therefrom, with lugs 20 provided on said shaft, a concave collar having the opening 25, and slots 27 to avoid said lugs, the washer 22, said arms provided with small openings 13, set screws arranged therein, and

locking nuts 16, whereby said set screws are forced into engagement with the grindstone to prevent its turning, substantially as described.

No. 41,955. Gate. (*Barrière.*)

Reuben Elias Harbaugh, Saint Joseph, Missouri, U.S.A., 13th February, 1893; 6 years.

Claim.—1st. The combination with a vertically swinging gate, of compound lever devices for operating said gate, a chain or cable connected to one of said levers, and with the gate, and a strip or cleat secured to the gate, said cleat being in such a position as to engage said chain or cable when the gate is partially opened, substantially as and for the purpose specified. 2nd. The combination with a vertically swinging gate, of the mechanism for operating said gate, said mechanism comprising the levers E and G, connected by a link, the operating lever, the roller carried thereby and engaging the inclined surface of a bearing block on the lever G, the chain or cable connecting the shorter arm of the lever E and the gate, and the strip or cleat carried by the gate, and arranged to engage said chain or cable when the gate is partially opened, substantially as and for the purpose specified.

No. 41,956. Sifter for Cinders and Gravel. (*Crible.*)

Maurice Major Vardon, Toronto, Ontario, Canada, 13th February, 1893; 6 years.

Claim.—1st. In a cinder or gravel sifter, the combination with the rectangular casing, of the centrally supported wire dividing sieve D, the inclined wire sieve E, having secured beneath and parallel to it the inclined board G, and the inclined wire sieve F, having secured beneath it and at an angle to it the board H, and the wire sieve I, leading from beneath the bottom of the sieve F, to the opening *j*, leading to the receptacle J, as and for the purpose specified. 2nd. In a cinder or gravel sifter, the combination with the rectangular casing, of the centrally supported wire dividing sieve D, the inclined wire sieve E, pivoted at e^1, and supported at the bottom by the springs *g*, upon the inclined board G, the wire sieve F, pivoted at f^1, and supported at the bottom on the board H, by the springs *h*, and the wire sieve I, pivoted at the bottom at i^1, and supported at the top on the springs *k*, extending outwardly from the board H, as and for the purpose specified. 3rd. The combination, with the wire dividing sieve D, wire sieve E, slanting board G, wire sieve F, and slanting board H, and wire sieve I, all arranged and supported as specified, of the cinder receptacle J, situated at the bottom of the sieve I, and provided with an opening *j*, and the drawer K, situated beneath the sieve I, and board H, and extending outwardly, as specified.

No. 41,957. Window Sash. (*Croisée de fenêtre.*)

Joseph Bernard Cohen, New York, State of New York, U.S.A., 14th February, 1893; 18 years.

Claim.—1st. The combination in a window, of a sash permanently pivoted at its lower end to strips which slide in the rebates of the casing, catches which hold the upper end of the sash to the strips and window cords attached to the strips, substantially as set forth. 2nd. The combination in a window, of a plurality of sashes, each permanently pivoted at its lower end to strips which slide in the rebates of the casing, the strips for the upper casing being thicker than those of the lower casing, catches which hold the sashes at their upper ends to their respective strips and window cords attached to the strips, substantially as set forth. 3rd. The combination in a window, of a sash permanently pivoted at its lower end to strips which slide in the rebates of the casing, catches which hold the upper ends of the sash to the strips, and window cords attached to the strips at or near their upper ends, substantially as set forth. 4th. The combination in a window, of a plurality of sashes, each pivoted to sliding strips which slide in the sash rebates of the casing, the pivots of the upper sash being somewhat above the bottom of its sliding strips, window cords attached to the strips, and a recessed sill, into which recess the upper sash may descend lower than the lower sash, substantially as set forth.

No. 41,958. Device for Operating Valves.
(*Appareil pour actionner les soupapes.*)

Henry Bolthoff, Denver, Colorado, U.S.A., 14th February, 1893; 18 years.

Claim.—1st. A multiple slide valve for steam engines, the several valve parts whereof operate independently side by side upon the same valve seat, and each controlling its own receiving and exhaust ports, for the purpose stated. 2nd. A multiple slide valve for steam engines, the several parts whereof operate as a unit, yet independently of each other, side by side upon the same valve seat, and each controlling its own receiving and exhaust ports, for the purpose stated. 3rd. In a steam engine, a slide valve composed of three co-acting parts arranged to operate as a unit, yet independently of each other, side by side upon the same valve seat, each controlling its own receiving and exhaust ports, for the purpose stated. 4th. In a steam engine, a slide valve composed of three co-acting parts arranged to operate as a unit, yet independently of each other, side by side upon the same valve seat, each controlling its own receiving and exhaust ports, the centre valve part having a length greater than that of the side valve parts, for the purpose stated. 5th. In a steam engine, a slide valve composed of three independently operating co-acting parts arranged to operate side by side upon the same valve seat, each controlling its own receiving and exhaust ports, and operated as a unit by separate valve rods, for the purpose stated. 6th. In a steam engine, the combination, with a multiple slide valve, the several parts whereof are arranged to operate side by side upon the same valve seat, and each controlling its own receiving and exhausting ports, of a motor having a steam actuated piston, and suitable connections for said piston rod and valves, for operating the same in the way and for the purpose stated. 7th. In a steam engine, the combination, with a slide valve composed of three independently co-acting parts arranged to operate side by side upon the same valve seat, each controlling its own receiving and exhausting ports, and having a separate valve rod, of a motor having a steam actuated piston, a rod pivotally connected with said piston rod, a rocking lever cross head jointed to said rod and to the side valve parts and pivoted upon the guide bar of the eccentric connected valve part, and a governor controlled valve for operating said motor piston in the way and for the purpose described. 8th. In a steam engine, the combination, with a slide valve composed of three independently co-acting parts, arranged to operate side by side, upon the same valve seat, each controlling its own receiving and exhausting ports, and having separate valve rods, of a mortor having a steam actuated piston, suitable connections for said piston rod and valves, a force supplementing said piston, and acting with a downward pressure, and a governor controlled valve for operating said piston motor, in the way and for the purpose stated. 9th. In a steam engine, the combination, with a multiple slide valve, the several parts whereof are arranged to operate side by side, upon the same valve seat, each controlling its own receiving and exhausting ports, and means for operating them as a unit and independently of each other, consisting of the eccentric, a motor having a steam operated piston, suitable connections for said piston rod and valves, and a governor valve for operating said motor piston, substantially as described. 10th. In a steam engine a multiple slide valve the several parts whereof are arranged to operate side by side, upon the same valve seat, each controlling its own receiving and exhaust ports, and an eccentric operating the several valve parts as a unit, in combination with a suitable motor for independently controlling parts of said multiple valve during their movements as a unit, substantially as described, and for the purpose specified. 11th. In a steam engine, the combination with the eccentric, a multiple slide valve continuously operated as a unit by said eccentric, substantially as described. 12th. A slide valve steam engine constructed to operate automatically to regulate the speed according to the power required, consisting essentially of the following elements, viz.: a multiple slide valve, the several parts whereof are arranged to operate side by side, upon the same valve seat and each controlling its own receiving and exhausting ports, an eccentric for operating said valves as a unit, a steam actuated piston connected to operate two of said valve parts independent of said eccentric, a force supplementing said piston, acting with a downward pressure, and a governor controlled valve, for operating said piston, substantially as described. 13th. In a steam engine, a slide valve composed of three co-acting parts arranged to operate side by side upon the same valve seat, and having an equal stroke from their connected eccentric, the side valve parts having a relative lenghtening and shortening stroke independent of the central valve parts, in combination with an independent steam actuated piston device, connected to said side valve parts, for operating them in the way, and for the purpose stated. 14th. The steam actuated piston motor device herein described, the same consisting of a steam cylinder, a piston operating therein by steam admitted to one and ends of said cylinder, a governor controlled valve for operating said piston, a force supplementing said piston rod acting thereon with a downward pressure, and eccentric operated rod, and suitable connections with said piston rod and said eccentric rod, for transmitting the movements of said piston to the device operated thereby, substantially as described. 15th. The combination, with the steam cylinder having an inlet and exhaust port at one end only, a piston operating therein, a governor controlled valve for operating said piston, and a force supplementing said piston, and acting with a downward pressure thereon, of a rod pivotally connected to the piston rod, an eccentric operated rod, and a suitable lever device pivotally connecting the said piston operated rod, the eccentric operated rod, and the device operated by said piston connections, substantially as described.

No. 41,959. Conductor for Electric Railways.
(*Conducteur pour chemins de fer électriques.*)

Edmond Augustus Warren, New York, State of New York, assignee of Edward William Mitchell, Covington, Kentucky, U. S. A., 14th February, 1893; 6 years.

Claim.—1st. An electric cable, comprising a conductor, extending within an insulating tube or covering, which latter is provided with contact pieces at suitable distances apart throughout its length normally out of contact with said conductor, the latter being adapted to engage said contact pieces when the cable is compressed or thrown out of its normal position, substantially as described. 2nd. An electric cable, comprising a conductor, extending within an insulating tube or covering, which latter is provided with contact pieces at suitable distances apart throughout its length normally out of con-

tact with said conductor, the latter having contact points adapted to engage said contact pieces when the cable is compressed or thrown out of its normal position, substantially as described. 3rd. An electric conductor, composed of sections hinged together and inclosed within an insulating tube or covering, substantially as described. 4th. An electric conductor, comprising a sectional metallic rod arranged within a suitable insulating tube or covering, which latter has contact pieces arranged at suitable distances apart throughout its length, said conductor being adapted to lie normally within the covering out of engagement with said contact pieces, substantially as described. 5th. In combination, with the sectional conductor, the insulating tube or covering, having contact pieces thereon adapted to make contact with the conductor sections when the conductor is thrown out of its normal position, substantially as described. 6th. In combination, with the car, the trolley, and the electric cable comprising a sectional conductor arranged within an insulating tube or covering, having spaced contact pieces, said conductor being adapted to make contact with said contact pieces by the action of the trolley, substantially as described.

No. 41,960. Shifting Seat for Vehicles.

(*Siège mobile pour voitures.*)

The Star Slide Seat Company, assignee of Charles C. Adelsperger, all of Springfield, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. In a vehicle, the combination, with a removable front seat, and extended side supports for the same, of a supporting box or chamber under said seat and within said side supports, with pockets or recesses between the ends of said supporting box and said side supports, and supporting ways extending into said pockets or recesses, and a shifting seat on said ways adapted to be moved into said pockets or recesses, and take the place of the front seat, substantially as specified. 2nd. The combination in a vehicle, having stationary front seat supports, and inwardly extending side panels at the side of said seat supports, supporting ways on said side panels, and a shifting seat on said supporting ways adapted to slide between the panels and the front seat supports and displace said front seat, substantially as specified. 3rd. The combination, with the stationary front seat supports and a removable seat thereon, of a sliding seat supported on suitable ways, and adapted to be moved into the position occupied by said removable seat, and a yielding clamp on said sliding seat to engage said ways, and a hinged lazy back adapted to be turned to the front or rear of said shifting seat, and operate said clamp in either position, substantially as specified. 4th, The combination, with a shifting seat and the supporting guides or ways, of a centrally hinged lazy back on said seat, and a clamping bar pivoted to said lazy back at a point removed from the pivoted centre thereof, said clamping bar being adapted to engage the supporting ways on which said seat is supported, and provided with a yielding offset or bend substantially as and for the purpose specified. 5th. The combination, in a vehicle body having side panels extended in front to form seat supports, as specified, of a supporting box for said front seat, the top of which stands flush with the top of said side panels, the ends of said box being arranged within said supporting panels, a suitable distance to form a pocket or recess between the same, a removable front seat adapted to rest on said box and extend over said pockets or recesses, and a rear shifting seat adapted to be moved into position in said pockets or recesses and take the place of said front seats, substantially as specified. 6th. In a shifting seated vehicle, a removable front seat and a rear shifting seat, said shifting seat being slightly shorter than the front seat, and a swelled body, the panels of which are contracted in the rear to conform to the length of the shifting seat when moved to its backward position, substantially as specified. 7th. The combination, in a vehicle, of a removable front seat and stationary supports therefor, open pockets or recesses arranged in said seat supports, and an extended body having a sill or rail adapted to form ways or supports for a shifting seat, said ways being extended into said recesses or pockets, substantially as specified. 8th. The combination, in a vehicle body having extended side panels, and a stationary curtain box, the top of which is substantially flush with the top of said panels, recessed openings between the curtain box and said panels, a removable front seat formed in sections, one or more of which sections may be reversed so as to face in opposite direction from the other section or sections, and a rear shifting seat adapted to be moved over said curtain box, and displace the front seat when the said sections are removed, substantially as specified. 9th. In a vehicle body having extended side panels, a stationary curtain box inside of and removed from said panels, a sectional seat adapted to rest on said curtain box and panels, projecting lugs on said seat sections adapted to engage in recesses in said curtain box to retain said seat sections in position, one or more of said sections being adapted to be reversed, as described, and a shifting seat supported on suitable ways, extending longitudinally between the side panels and curtain box, whereby said shifting seat may be moved over said curtain box and take the place of said sectional seat, substantially as specified.

No. 41,961. Method of Electric Riveting.

(*Méthode de rivetage électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. The herein described method or process of electric riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, and then passing a heating electric current through the rivet and plate to unite the sides of the rivet to the metal body through which it passes. 2nd. The herein described method or process of electric riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, then passing a heating electric current into one of the plates in the vicinity of the rivet from the said plate to and through the rivet to the other plate, and then from the latter plate in the vicinity of said rivet to unite the sides of the same to the metal body through which it passes. 3rd. The herein described method of electric riveting, consisting in interposing insulating material between the plates, pressing the same together, and heating the rivet inserted through the plate by a heavy electric current flowing through the rivet and plates to unite the sides of the rivet to the metal body through which it passes. 4th. The herein described method of electric riveting, consisting in interposing insulating material between the plates, pressing the same together, and heating the rivet inserted through the plates by a heavy electric current flowing through the rivet, and plates to unite the sides of the rivet to the metal body through which it passes, and then applying pressure to perfect the union, as desired. 5th. The herein described method of electric riveting, consisting in interposing insulating material between the plates, pressing the same together, heating the rivet inserted through the plates by a heavy electric current flowing through the rivet, and plates to unite the sides of the rivet to the metal body through which it passes, and then applying said pressure to the rivet to perfect the union of said parts. 6th. The herein described method or process of riveting, consisting in interposing insulating material between the plates, and heating the rivet and plates electrically while in position to weld or unite the sides of the rivet to the metal body through which it passes. 7th. The herein described method or process of riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, insulating the ends of the rivet, then passing a heated electric current into one of the plates in the vicinity of the rivet from the said plate to and through the rivet to the other plate, and then from the latter plate in the vicinity of said rivet, to unite the sides of the same to the metal body through which it passes. 8th. The herein described method or process of riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, holding the plates together by applying metal blocks on each side, insulating the ends of the rivet from the blocks, then passing a heating electric current into one of the plates in the vicinity of the rivet, from the side plate to and through the rivet to the other plate, and then from the latter plate in the vicinity of said rivet, to unite the sides of the same to the metal body through which it passes. 9th. The herein described method or process of riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, holding the plates together by applying metal blocks on each side, insulating the ends of the rivet from the blocks, then passing a heating electric current into one of the plates in the vicinity of the rivet, from the said plate to and through the rivet to the other plate, and then from the latter plate in the vicinity of said rivet, to unite the sides of the same to the metal body through which it passes, and then applying pressure to perfect the union as desired. 10th. The herein described method or process of riveting, consisting in interposing insulating material between the pieces or plates to be riveted together, then inserting the rivet into the rivet hole or holes, and then passing a heating electric current through and between the plates and rivets, to unite the side of the same to the metal body through which it passes.

No. 41,962. Heater. (*Calorifère.*)

James S. Harkins, Minneapolis, Minnesota, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. In a heater, the combination, with a suitable fire pot having a series of openings in its wall, of a grate, an ash box below said grate, provided with a draft opening, and an annular wall forming a diving flue surrounding said fire pot, with which the openings in the wall of the fire pot communicate, said annular wall extending inwardly at its upper end and abutting against the wall of the fire pot above said openings, substantially as described. 2nd. The combination, in a furnace or heater, with a fire pot having a suitable grate, and having a series of openings in its wall, and with a draft opening above said fire pot and another one below said grate, of an annular wall forming a diving flue surrounding said fire pot, with which the openings in the wall communicate, said annular wall abutting against the wall of the fire pot above said openings, and a smoke flue with which said diving flue communicates, substantially as described. 3rd. In a heater, the combination, with the fire pot 3, provided at its lower portion with the inclined wall 7, and at its upper portion with the vertical wall 21, having the series of openings 23, and with suitable draft openings above said fire pot and below said grate, of the annular wall 25, arranged outside of said fire pot and forming a diving flue, having its upper end abutting against the wall of the fire pot above said openings, the chamber 29, with which said diving flue communicates, and the smoke flue connected with

said chamber. 4th. The combination, with the fire pot having openings in its wall, of an annular wall having its upper end abutting against the wall of the fire pot above the openings therein with which said openings communicate, communicating with a suitable smoke flue, a direct flue above said fire pot, also communicating with said smoke flue, and provided with a suitable damper, and suitable draft openings arranged above and below said fire pot, substantially as described. 5th. The combination, in a heater, with the fire pot having openings in its walls, of a diving flue surrounding said fire pot with which said openings communicate, the chamber 29, with which said diving flue communicates, provided with the vertical wall 35, having openings 37, and with the door 43, the smoke flue 41, and the pipe 39, connecting said chamber with said smoke flue, substantially as described. 6th. The combination, with the fire pot and the diving flue surrounding said fire pot, of the casing 2, forming an air space 49, outside of said diving flue, and the chamber 14, arranged above said fire pot and connected with said air space, and having the spiral division plate 18 therein, substantially as described. 7th. The combination, in a heater, having a suitable fire pot and an annular diving flue surrounding said fire pot, of the casing arranged outside of said diving flue, and chambers 14 and 51, arranged, respectively, above and below said fire pot, and the hot air dome 22, the said chamber 14, communicating with the space 49, and with said drum, and chamber 51, communicating with the drum through the pipe 59, and also with the space 49, substantially as described. 8th. The combination, with the fire pot 3, and the chamber 4, arranged above said fire pot, of the casing 2, surrounding said fire pot and inclosing a suitable air space, the chamber 14, arranged above said chamber 4, and provided with the spiral division plate, and having an opening 20, in its centre, and a chamber 22, arranged above said chamber 14, and provided with the annular water pan 24, surrounding said opening 20.

No. 41,963. Cooking Stove. (*Poêle de cuisine.*)

James S. Harkins, Minneapolis, Minnesota, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. The combination in a cooking stove, of a fire pot comprising the fuel reservoir 4, with the flange 21, and the combustion chamber 5, with its walls 23 and 27, forming a hollow chamber 28, around it, the pipe 29, leading into said chamber 28, the series of openings 31 and 32, in the walls 23 and 27, the draft openings 22, the flue 25, oven 2, and smoke flue 15, substantially as described. 2nd. The combination in a cooking stove, of the fuel reservoir 4, flange 21, combustion chamber 5, so arranged that the bottom of its walls 23 and 27, will be above the flange 21, leaving a space between, walls 23 and 27, with chamber 28, between pipe 29, leading from near the top of the stone into said chamber 28, openings 31 and 32, in the walls 27 and 32, respectively, fuel chute 35, draft openings 22, 38, 18, oven 2, flues 25 and 15, substantially as described and for the purpose specified. 3rd. The combination, in a cooking stove, of the fuel reservoir having walls 23 and 27 forming the chamber 28, the series of openings 31 and 32, in the walls 23 and 27, the enclosing wall 50, division plates 41 and 47, draft openings 22, flues 25 and 15 and oven 2, substantially as described.

No. 41,964. Method and Apparatus for Treating Dust Refuse. (*Méthode et appareil de traitement des déchets de poussière.*)

John C. W. Stanley and Joseph Russell, both of London, England, 14th February, 1893; 6 years.

Claim.—The combination of the screen A, whose siftings are discharged by the elevator B, onto the screen G, the conveyor H, discharging the siftings of the screen C, onto the screen J, whose siftings are discharged where wanted, the devil R, receiving the paper and rags from the screen A, and discharging them after treatment in the oven M, the duct K, receiving the lighter discharge of the screen G, after it is subjected to an air blast, and conveying it to the oven M, the elevator N, taking the heavier discharge of the screen G, to the separating screen O, discharging by divided shoots P, P^1, onto the revolving table Q, shoot J^1, taking the discharge from the screen J, to the washing elevator T, which discharges onto the divided shoot U^1, the material separated at the different points of the process, being afterwards utilized as desired, either on or off the premises, and suitable mechanism being provided to operate the different parts, substantially as and for the purpose specified. 2nd. In the treatment of dust bin and similar refuse, the reception drum, substantially as and for the purpose herein described. 3rd. In the treatment of dust bin and similar refuse, the combination with the outlet of a pit such as a^2, of one or more reciprocating rods such as a^{12}, for preventing congestion in the outgoing matter operated upon by such screen, substantially as herein described. 4th. In the treatment of dust bin and similar refuse, the combination with a perforated, reticulated or like revolving drum or screen for separating the larger from the smaller particles, of an air or equivalent blast for separating the lighter from the heavier particles, substantially as herein described. 5th. In the treatment of dust bin and similar refuse, the combination with a "devil" or carding machine, of an oven or drying chamber into which the material torn by the said devil is conducted by means of air or equivalent blast, substantially as and for the purpose herein described. 6th. In the treatment of dust bin and similar refuse, the combination with a perforated, reticulated or like revolving drum or screen, of an oven or drying chamber into which the lighter particles of the material in leaving the said screen are conducted by an air or equivalent blast, substantially as herein described. 7th. In the treatment of dust bin and similar refuse, the employment of the ring like table Q, substantially as herein described. 8th. In the treatment of dust bin or similar refuse, the combination with a revolving table such as Q, of a perforated, reticulated or like revolving drum or screen such as O, and shoots such as P, P^1, P^3, P^5, provided with gaps such as P^4, constructed and operating, substantially as and for the purpose herein described. 9th. In the treatment of dust bin and similar refuse, a shoot provided with one or more gaps or openings through which of the material passing down such shoot, the more or less adhesive particles will fall, while those of a free nature will leap across the said gap or gaps, substantially as herein described. 10th. In the treatment of dust and similar refuse, a washing elevator such as T, substantially as herein described. 11th. The general arrangement, and combination, of apparatus for dividing and subdividing dust bin and similar refuse into its constituent species or parts, substantially as and for the purpose herein described. 12th. Mechanically dividing and subdividing dust bin and similar refuse into its constituent species or parts, to enable each to be separately dealt with, substantially as herein described.

No. 41,965. Hoisting and Conveying Mechanism.
(*Machine à monter et transporter.*)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—In a hoisting and conveying machine of that type in which the hoist rope is looped round about the hoist block, and raises and lowers the load by a shortening up and lengthening of the loop in the rope, the combination, with the trolley formed or provided with a supplemental set of rope wheels, as specified, of a hoist block having a series of sheaves, one of which co-acts with the usual rope wheels of the trolley when the hoist rope is looped singly, and the others of which co-act with the said supplemental rope wheels of the trolley when the loops of the hoist rope have been multiplied, all substantially as and for the purposes hereinbefore set forth.

No. 41,966. Hoisting and Conveying Mechanism.
(*Machine à monter et transporter.*)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—The hereinbefore described method or system of varying the purchase or lifting capacity of the hoist rope of that type of machine referred to, which method consists in changing the number of loops of the hoist rope at the vicinity of the hoist block by doubling on itself the loops from which the load is suspended and multiplying the strands thereof to work on supplemental devices with which the machine is supplied without unreeving the hoist rope, substantially as hereinbefore set forth.

No. 41,967. Device for Supporting and Controlling Flexible Pipes. (*Appareil pour supporter et contrôler les tuyaux flexibles.*)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—The combination, with a movable machine, a flexible tube for supplying compressed air or other motive medium thereto, and having one of its ends immovable and the other attached to said movable machine, and a cable connected with said tube, of a carrier adapted to engage the tube and the cable, and operating to form and hold the said supply tube in a horizontal loop overhead, and to distend said horizontal loop, thus permitting the requisite horizontal movement of the movable machine, all substantially in the manner and for the purposes hereinbefore set forth.

No. 41,968. Hoisting and Conveying Machine.
(*Machine à monter et transporter.*)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—In a hoisting and conveying machine provided with a hoist block supended in a loop of the hoist rope, and adapted to be engaged with the trolley for the purpose of conveying the elevated load, the combination with the said hoist block, and the said hoist rope, of a supplemental sheave block having a series of rope wheels adapted to be swung in the doubled loop of the said hoist rope when the latter shall have been doubled up and the single sheave hoist block shall have been engaged with the trolley, all substantially as and for the purpose set forth.

No. 41,969. Hoisting and Conveying Machine.
(*Machine à monter et transporter.*)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. In a cantilever derrick or hoisting and conveying machine, the combination, with the trolley, of a counterbalancing weight which travels back and forth on the boom or centrally supported tramway to about the same extent as, but in opposite directions to, the movements of the trolley, as specified, and suitable

means operating to produce the said relative movements of the trolley and counterbalancing weight, all substantially as and for the purposes hereinbefore set forth. 2nd. In a hoisting and conveying machine of the type shown and described, the combination, with a travelling counterbalancing weight, of an auxiliary weight and means by which said auxiliary weight can be either held in a state of disuse, or can be placed upon the travelling weight, so as to move therewith, all substantially in the manner and for the purposes hereinbefore set forth. 3rd. In combination with the double tracked boom or tramway of a hoisting and conveying machine, the trolley, the travelling counterbalance, and means for moving the trolley and counterbalance corresponding distances, as specified, means for varying the path of travel of the counterbalance, so as to multiply its leverage over the opposing weight at the trolley, all substantially as set forth.

No. 41,970. Printing Telegraph.

(*Télégraphe imprimant.*)

Edward Jennings Silkman, George D. Penniman and Thomas K. Worthington, all of Baltimore, Maryland, U. S. A., 14th February, 1893; 6 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of a motor, its governor, gearing connecting them, a brake wheel, a friction brake rocking on a central pivot, its actuating magnets on opposite sides of the pivot, and a circuit controlling switch actuated by the governor to regulate the speed of the motor. 2nd. The combination, substantially as hereinbefore set forth, of a motor, its governor, its friction brake, its actuating magnets and generator in an independent circuit, a circuit controlling switch actuated by the governor to regulate the speed of the motor, and a second or separate circuit controlling device automatically controlled from the main line, and in a local shunt circuit with the governor circuit shifter, but directly and independently controlling the brake. 3rd. The combination, substantially as hereinbefore set forth, of a motor, a countershaft driven by gearing therefrom, a governor driven from this shaft, a brake wheel thereon, a brake lever rocking on a central pivot, and acting on a brake wheel, a local circuit, magnets controlling the brake lever therein on opposite sides of the pivot, and a circuit controlling switch actuated by the governor to regulate the speed of the motor. 4th. The combination, substantially as hereinbefore set forth, of a motor, its governor, its brake mechanism, a local circuit, a generator of electricity, brake controlling magnets, and a circuit controlling switch actuated by the governor, all in a shunt circuit, and automatic synchronizing mechanism in a branch of this circuit, which intermittently and independently actuates the brake mechanism. 5th. The combination, substantially as hereinbefore set forth, of a motor, its governor, its brake mechanism, a local circuit, brake controlling magnets, and a circuit controlling switch actuated by the governor, a main line, mechanism automatically controlling this circuit actuated by the motor, synchronizing mechanism also actuated by this motor, and automatic switch mechanism in the main line controlling this synchronizing mechanism. 6th. The combination, substantially as hereinbefore set forth, of two motors, their governors, an electrically actuated brake for each motor in a separate local circuit, circuit controlling mechanism actuated by each governor, synchronizing mechanism actuated by the motors intermittently to open and close their circuits, a main line circuit, its automatic circuit controlling mechanism operated by the motors, and electrically actuated circuit controlling mechanism which simultaneously opens both the main and local circuits to aid the synchronizing. 7th. The combination, substantially as hereinbefore set forth, of a traversing type wheel carriage, a stop intersecting its path, mechanism for actuating the stop, and an intermittently interposed device which connects the actuating mechanism and stop. 8th. The combination, substantially as hereinbefore set forth, of a traversing type carriage, finger keys or key levers, stops carried thereby, electrically controlled mechanism for actuating these stops and the type wheel carriage, and devices intermittently interposed between the actuating mechanism and stops to operate the latter. 9th. The combination, substantially as hereinbefore set forth, of finger keys or key levers, stops carried thereby, mechanism for actuating these stops, a motor, devices actuated thereby, intermittently interposed between the motor and stops, and circuit controlling mechanism actuated by these devices to energize the stop actuating mechanism. 10th. The combination, substantially as hereinbefore set forth, of a finger key or key lever, electrically controlled mechanism for operating it, a motor, mechanism actuated thereby for energizing the lever actuating mechanism, and for interposing a device between this mechanism and lever to render them operative, the organization being such that the action is prevented until the key lever is moved out of the path traversed by the interposing device. 11th. The combination, substantially as hereinbefore set forth, of a series of key levers, electrically operated mechanism for operating them, a motor, a series of devices automatically interposed by the motor between the key levers and actuating mechanism, when operating as a receiver, and a device causing them to intersect the path of the key levers, when acting as a transmitter, the removal of the key from such path throwing the mechanism into operation. 12th. The combination, substantially as hereinbefore set forth, of a series of key levers, an electrically operated lifter bar, a motor, a series of automatically actuated slide bars adapted to be interposed between the key lever and lifter bar, and a cam roller which changes the path traversed by the bars so as to cause them to abut against the key lever, thus rendering the mechanism inoperative until the key lever is removed. 13th. The combination, substantially as hereinbefore set forth, of a finger key or key lever, a lifter bar, its actuating magnet, a rotating cylinder, a slide bar actuated thereby, and adapted to be interposed between the key lever and lifter bar, and a circuit controlling switch also actuated by this slide bar to control the circuit of the lifter bar magnet. 14th. The combination, substantially as hereinbefore set forth, of a series of key levers, a lifter bar, its actuating magnet, a rotating cylinder, a series of notches therein, a series of spring actuated radius bars, lugs thereon adapted to be thrown into and out of their respective notches, slide bars carried by these radius bars, one for each key lever, and circuit controlling devices actuated thereby, so that the forward movement of any slide bar to interpose between the key lever and lifter bar energizes the magnet of the latter to operate the key lever. 15th. The combination, substantially as hereinbefore set forth, in each of two or more similar type writing machines, of a series of key levers, their electric actuating mechanism, a motor for each machine, devices actuated thereby intermittently interposed between the key levers and their actuating mechanism, a main line circuit passing through all of the key lever actuating mechanisms, and circuit controlling mechanism actuated by the interposition of these devices to energize the lever actuating mechanism of each machine. 16th. The combination, substantially as hereinbefore set forth in each of two or more similar type writing machines, of a series of key levers, their lifter bars, their actuating magnets, rotating cylinders, slide bars actuated thereby and adapted to be intermittently interposed between the key levers and lifter bars, a main line circuit, including the actuating magnets, and circuit controlling switches actuated by the slide bars, so that the interposition of any one bar closes the circuit through all the magnets. 17th. The combination, substantially as hereinbefore set forth in each of two or more similar type writing machines, of series of key levers, electrically controlled mechanism for operating them, motors, devices actuated thereby adapted to be interposed between the key levers and their actuating mechanism, synchronizing mechanism for each motor, a main circuit in shunts or branches, of which the magnets of all the lever actuating and synchronizing mechanisms are included, and circuit controlling devices actuated by the interposition of any one of these devices between the key levers and their actuating mechanism, so as to simultaneously energize these magnets. 18th. The combination, substantially as hereinbefore set forth, of a traversing type wheel carriage, a stop intersecting its path, a key lever actuating the stop, an electrically operated traversing lifter bar, and a slide bar intermittently interposed between the lifter bar and finger key to actuate the stop. 19th. The combination, substantially as hereinbefore set forth, of a traversing type wheel carriage, its actuating frame, a stop plate carried thereby, a key lever, a stop carried thereby to intersect the stop plate, a lifter bar, its actuating magnet, and a slide bar intermittently interposed between the lifter bar and key lever to energize the magnet and actuate the lifter bar. 20th. The combination, substantially as hereinbefore set forth, of a type wheel, its carriage, its actuating frame, electro magnetic apparatus for actuating it, a stop plate on this frame, a key lever, a stop actuated thereby to engage the top plate, a lifter bar, electro magnetic apparatus actuating it, and an automatically actuated slide bar adapted to be interposed between the lifter bar and key lever to enable the lifter bar to actuate the stop. 21st. The combination, substantially as hereinbefore set forth, of a type wheel, its carriage, its actuating frame, a stop plate thereon, type wheel locking mechanism, means for actuating the locking mechanism, a key lever, a stop actuated thereby to engage the stop plate, electro magnetic apparatus actuating it, and an automatically actuated slide bar adapted to be interposed between the lifter bar and key lever to actuate the stop. 22nd. The combination, substantially as hereinbefore set forth, of a type wheel, a feed screw shaft, mechanism connecting the two to feed the type wheel laterally, a key lever, an electrically actuated lifter bar, an automatically actuated slide bar adapted to be thrust over the lifter bar to be lifted by it, and automatic mechanism actuated by this slide bar to open and close the circuit of the type wheel releasing mechanism, to permit its retraction to begin a new line. 23rd. The combination, substantially as hereinbefore set forth of laterally movable type wheel feeding mechanism, an endwise moving shaft, a circuit making contact thereon, a key lever, an electrically actuated lifter bar, an elbow lever actuating the contact shaft to close it, and a slide bar automatically interposed between the lifter bar and elbow lever, to enable the former to actuate the latter. 24th. The combination, substantially as hereinbefore set forth, of latterally movable, type wheel feeding mechanism, an endwise moving contact making shaft, a key lever, an electrically actuated lifter bar, mechanism for moving the shaft in one direction to close its contacts, a slide bar automatically interposed between the lifter bar and contact making mechanism, and a stop on the contact shaft against which the tpye wheel feeding mechanism abuts as it begins a new line, so as to separate the contacts. 25th. The combination, substantially as hereinbefore set forth of a main frame, solenoids thereon, a type wheel carriage actuated thereby, a key lever, an electrically actuated lifter bar, circuit controlling devices for the solenoid circuits, and a slide bar automatically interposed between the lifter bar and circuit controlling devices to actuate them. 26th. The combination, substantially as hereinbefore set forth, with each of two

or more similar type writing machines, of continuously rotating actuating cylinders, notches arranged spirally around a portion of their perimeters, spring actuated radius bars carrying lugs or tappets corresponding with these notches, circuit closing devices actuated by the radius bars, synchronizing devices connected with each machine in a local circuit, a main line connecting them, and circuit controlling contacts or switches therein actuated by the circuit closing devices, so as to actuate the synchronizing mechanism while the tappets are traversing the solid face of the cylinders. 27th. The combination, substantially as hereinbefore set forth with several similar type writing machines, of continuously rotating cylinders, notches arranged on a portion of their perimeters, spring actuated radius bars, carrying lugs or tappets corresponding with these notches, slide bars carried by the radius bars, key levers, stops thereon, lifter bars, their actuating magnets, synchronizing mechanism, branch circuits of the main line including these actuating magnets and synchronizing devices, and circuit controlling switches actuated by the radius bars, the organization being such that the slide bars are interposed between the lifter bars and key levers simultaneously with the energizing of the magnets which actuate the lifter bar and break the synchronizing circuit. 28th. The hereinbefore described printing telegraph consisting of the combination, with similar type writing machines, of motors, governors, synchronizing mechanism, continuously rotating cylinders provided with series of spiral notches on their perimeters, spring actuated radius bars carrying tappets corresponding with the notches, slide bars connected with the radius bars, circuit closing bars actuated thereby controlling contacts in the connecting main line, lifter bars acting on the slide bars, magnets in the main line actuating the lifter bars, and magnets in shunts of the main line controlling the synchronizing mechanism, the organization being such that the actuation of a key lever causes the successive automatic operation of the other mechanisms.

No. 41,971. Window Blind. (*Persiennes.*)

John W. T. Gilliam, William H. Gahan, Pilander V. Benson, Robert B. Walling and Abraham Sharp, all of Baltimore, Maryland, U.S.A., 14th February, 1893; 6 years.

Claim.—The combination, of a window frame or casing having horizontal slideways, one side of one of which constitutes a rack, a spring roller mounted vertically in bearings at one side of the said window frame, a flexible blind secured to and winding on said roller, and fitting said horizontal slideways of the window frame, and a pawl carried by the flexible blind, and adapted to automatically engage the said rack, and thereby hold the blind at various positions to which it may be drawn out against the action of the spring roller.

No. 41,972. Atomizer. (*Pulvérisateur d'eau.*)

The Firm of McKesson and Robbins, New York City, assignee of Charles Lewis, Morehouse, Brooklyn, New York, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. In a vaporizer, the combination, with an air forcing tube having a side aperture, of an ejector tube connected with said air forcing tube, and a vessel into which said ejector tube projects, which vessel has a pin aperture in its top end adjacent to the side aperture of the air forcing tube, substantially as described. 2nd. In a vaporizer, the combination, with a tube, of means connected with the same for compressing air, two independent outlet openings for the compressed air in said tube, a vessel connected with the tube, and having a top aperture adjacent to one of the outlet apertures of the compressed air tube, and a pipe for conducting compressed air from the other outlet of the compressed air tube into the vessel, substantially as described.

No. 41,973. Matrix Making Machine.

(*Machine à faire les matrices.*)

Albert John Kletzker, St. Louis, Missouri, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. A type wheel, having independently movable type, and normally held at the blank space, key levers for moving said type wheel to any desired character, a punch for actuating separately each independently movable type when positioned, and a toggle joint controlled by the key levers for operating said punch. 2nd. A type wheel, with independently movable type, key levers for moving said type wheel to any desired character by means of slotted plates and pins, a toggle joint controlled by said key levers, and a punch operated thereby to actuate separately each independently movable type when positioned beneath the same. 3rd. The combination, in a type printing machine, of a number of key levers, a number of slotted plates arranged adjacent to the ends of said key levers, pins carried by said key levers for operating upon said slotted plates, a type wheel, and connections intermediate the type wheel and said slotted plates and pins controlled by the key levers for positioning said type wheel. 4th. In a type printing machine, a number of key levers, a type wheel, an oscillating gear for positioning said type wheel, a saddle having a heart shaped slot, saddle guide, and plates, and arms operated upon by the key levers controlling said saddle and oscillating gear. 5th. The combination, in a matrix making machine, of a number of key levers, a number of slotted plates arranged adjacent to the inner ends of said key levers, pins carried by said key levers for operating upon said slotted plates, arms and plates controlled by said slotted plates, a saddle governed by said arms, an oscillating segmental gear actuated by said plates and saddle, a spur wheel controlled by said segmental gear, and a type wheel rotated thereby. 6th. In a matrix making machine, the combination of a number of pivoted key levers, two sets of slotted plates controlled by said key levers, an arm governed by each set of slotted plates, plates 30, carried by said arms, a saddle controlled by said arms, a segmental gear oscillated by said plates 30, and governed by said saddle, a spur wheel meshing with said segmental gear, a type wheel rotated by said spur wheel, and springs for returning the said segmental gear to its normal position. 7th. The combination of a number of pivoted finger keys 22, pins 23, carried by said finger keys, two sets of slotted plates 24, controlled by said pins, an arm 29, actuated by each set of slotted plates, plates 30, of the form described, carried thereby, a saddle 31, having a heart shaped slot therein, a guide 31¹ therefor, a pin 32, carrying said saddle, a segmental gear 33, carrying said pin, and controlled by said plates 30, and saddle, a spur wheel 38, rotated thereby, and a type wheel coupled thereto. 8th. The combination, in a printing machine, of a number of key levers, a type wheel with independently movable type positioned thereby, connections controlled by the said key levers, a punch operated by said connections to actuate any one of said movable type, a single adjusting pawl operated by the connections controlled by the key levers for holding said type wheel in whatever position it is placed by the aforesaid connections, and liberating said type wheel as soon as the key levers are struck, and a printing surface arranged in the path of said type. 9th. The combination, in a printing machine, of a number of key levers 22, a type wheel with independently movable type positioned thereby, arms 46 and 48, controlled by said key levers, a connecting rod 49, governed by the arm 48, a bell crank lever 51, actuated by said connecting rod, a reciprocating bar 52, a rack 54 upon said bar, a spur wheel 55, controlled thereby, a cam 59, of the shape set forth, carrying said spur wheel 55, a punch 75, controlled by said cam through the instrumentality of a toggle joint, to force any one of said type into a printing surface arranged adjacent to said type wheel, an adjusting pawl 64, for holding said type wheel in whatever position it is placed, and an arm 61, controlling said adjusting pawl through the instrumentality of said cam, substantially as set forth. 10th. The combination, in a printing machine, of a type wheel having a serrated periphery, a single pawl which tends to seek engagement with the serrations for holding and adjusting said type wheel in whatever position it is placed, a lifting lever for raising said pawl from said type wheel, and a cam, as described, controlling said lifting lever to raise said pawl from the serrations, and to permit the same to seek engagement therewith. 11th. A finger key mechanism for shifting a type wheel in the direction of its axis, consisting of one or more connections intermediate of the type wheel, and a bar 83, arms 84, carrying said bar, a shaft 85, by which said arms are hinged, pins projecting from said arms at varying distances from said shaft, and finger keys arranged to operate upon said pins, substantially as set forth. 12th. The combination, of a type wheel having a plurality of circumferential rows of characters, a sleeve 39, upon which said type wheel is mounted, a shaft carrying said sleeve, gearing for rotating said type wheel to any desired position, links 80, for shifting said sleeve, a bell crank lever 81, pivoted to said links, a rod 82, encircled by a spring 86, and pivoted to said bell crank lever, and to a bar 83, arms 84, connected to said bar 83, pins projecting from said arms 84, at variable distances from a shaft 85, upon which said arms are hung, and finger keys for acting upon said pins. 13th. The combination, in a printing machine, of a number of keys, a bar resting across said keys, arms for pivoting said bar, plates 104 and 105, carried by one of said arms, arranged a slight distance apart and above each other, a disk 106, arranged between said plates and carrying pins, upon which said plates operate, a link 109, pivoted to said disk, transmitting bar 110, pivoted thereto, a pivoted lever 111, movable along said bar, a spring actuated lever pivoted so as to move at right angles to the aforesaid lever, a shaft controlled by the movement of said pawls through the instrumentality of an escapement wheel, and a carriage 129, controlled by means of gearing through the instrumentality of said shaft. 14th. The combination, in a type printing machine, of a bar 100, controlled by the key levers to operate the spacing mechanism, a strap 129, cut away as shown, for the purpose described, and arranged above certain of said key levers, and a regulator under the control of said straps and keys governing the aforesaid spacing mechanism, whereby when the keys beneath such straps are operated the regulator will be moved to control the spacing apparatus in accordance with the movement of said strap and the carriage will be moved through a corresponding distance. 15th. The combination, in a type printing machine, of a bar 100, controlled by the key levers to operate the spacing mechanism, a strap 129, cut away as shown, for the purpose described, and arranged above certain of said key levers, a regulator governing the aforesaid spacing mechanism under the control of said strap, and connections between said capitalizing key and said strap, whereby when the capitalizing key is depressed the strap 129 will be raised, so that when the key levers are depressed the carriage will be spaced for capitals, but when the keys beneath said straps are depressed the regulator will be moved to give greater or less spacing than that required by the ordinary capitals, substantially as set forth. 16th. The combination, with a type printing apparatus, of a spacing mechanism, a regulator governing said spacing

mechanism, and a mechanism controlling said regulator governed by the operation of certain keys, consisting of a strap 129, cut away as set forth, a lever 132, pivoted to said strap by a screw 131, a cam 134, controlling said lever through the instrumentality of a disc 135, a bar 136, connected with the capitalizing key, also controlling said disc, a second lever 137, swung about the pivot of said strap, a screw 138, connecting the first mentioned lever with the second mentioned lever through a slot in said strap 129, a projection 140, carried by said second lever, and connections intermediate of said projection and regulator, substantially as specified. 17th. The combination, in a type printing machine, of an ordinary spacing apparatus, a blank or spacing key, a regulator controlling said spacing apparatus, independent connections governing said regulator, a strap 129, for actuating said independent connections, an extensible blade 149, mounted upon the blank spacing key and adapted, when extended, to control said strap, and a key or bar 152, for projecting said blade forward to control said strap. 18th. The combination, in a type printing machine, of an ordinary spacing mechanism governed by the key levers, one member of which slides upon another, and a regulating mechanism controlling said spacing mechanism and also governed by said key levers, one member of which regulating mechanism also slides upon another, whereby the carriage may be fed for space between the lines without interfering with the operation of said spacing mechanisms. 19th. The combination, in a type printing machine, of a sliding carriage constructed to be fed as the letter keys are operated, an intermediate carriage in which said sliding carriage is mounted movable at right angles to the motion of said carriage, a pawl secured to said intermediate carriage, and a ratchet bar controlling said pawl and operated by a reciprocating finger key bar for spacing the lines of printing. 20th. The combination, in a type printing machine, of a sliding carriage constructed to be fed as the letter keys are operated, an intermediate carriage in which said sliding carriage is mounted movable at right angles to the motion of said sliding carriage, a pawl secured to said intermediate carriage, a ratchet bar controlling said pawl and operated by a key bar for spacing the lines of printing, and a finger button for disengaging the pawl from the ratchet bar, whereby said intermediate carriage can be moved independently of said ratchet bar. 21st. The combination, in a type printing machine, of a sliding carriage constructed to be fed as the letter keys are operated, an intermediate reciprocating carriage in which said sliding carriage is mounted movable at right angles to the motion of said sliding carriage, a reciprocating key bar for sliding said intermediate carriage to space the lines, and a plurality of pivoted stops for limiting the movement of said reciprocating key bar when moved in the path of the same.

No. 41,974. Machine for Making Fence Posts.

(*Machine à faire les pieux de clôture.*)

Frederick P. Rosback and Henry F. Band, both of Chicago, Illinois, U.S.A., 14th February, 1893; 6 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of a rotary mandrel, a set of rotary feed and pressure rolls arranged about the rotary mandrel, and a toothed roll D^1, adapted to engage the forward edge of the blank, and bend the same down upon the mandrel, for the purpose set forth. 2nd. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel C, a set of rotary feed and pressure rolls arranged about the mandrel, a set of adjustable bearings for said rolls connected to have a synchronous adjustment, and means for simultaneously adjusting said bearings. 3rd. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel, a set of rotary feed and pressure rolls arranged about the mandrel, adjustable bearings E for said rolls, and a set of gear connected rock shafts from which said bearings are adjusted. 4th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel, a set of feed and pressure rolls arranged about the mandrel, adjustable baarings for said rolls, and a set of gear connected rock shafts provided with cams or eccentrics engaging said bearings, for the purpose described. 5th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel, pressure rolls D, and a toothed pressure and bending roll D^1, arranged about the mandrel, and adjustable bearings for said rolls, and means for adjusting said bearings. 6th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of a mandrel C, journalled at one end and having its opposite end free to permit the removal of a completed tube, a toothed roll D^1, for engaging and bending the forward edge of a blank down upon the mandrel, and a set of rolls for pressing and shaping the blank upon the mandrel, said rolls being all adjustably held so that they can be moved away from the mandrel in order to allow the complete tube to be removed therefrom. 7th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the rotary mandrel, a set of rotary feed and pressure rolls arranged about the rotary mandrel and mounted in adjustable bearings, and a set of bearing rolls supported by adjustable bearings and arranged to back said feed and pressure rolls, for the purpose described. 8th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel, rotary feed and pressure rolls arranged about the mandrel, bearing rolls arranged to back the feed and pressure rolls, adjustable bearings for all of said rolls, and means for adjusting said bearings. 9th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of a rotary mandrel from which the tube after completion thereon can be removed, and a stripper roll for removing the completed tube from the mandrel. 10th. The combination, substantially as hereinbefore set forth, in a machine for making tubular sheet metal posts and the like, of the mandrel D, and a stripper roll carried by an adjustable support and operated from a suitable source of power, for the purpose specified.

No. 41,975. Catcher and Deliverer for Mail Pouches.

(*Appareil à prendre et à délivrer les sacs à lettres.*)

Abraham Kimber, Indianapolis, Indiana, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. A mail pouch catching and delivering apparatus, consisting of a pivoted receptacle attached to the postal car provided with an upright, a transverse arm to said upright extending out through the side of the car, a cam arranged alongside the track on a suitable support in position to strike said projecting arm as it passes and operate it, substantially as set forth. 2nd. In a mail pouch catching and delivering apparatus, the combination with the postal car, of a receptacle hinged thereto and provided with an upright at its front, a spring for holding said receptacle in an upright position, an outwardly projecting arm on the top of said upright, a post arranged alongside the track in position to strike the arm as it passes, the top of said post being formed with a cam surface, and suitable receptacles alongside said post for receiving the pouches from the car, substantially as set forth. 3rd. In a mail pouch catcher and deliverer, the combination of a receptacle supported by an upright at one of its front corners, which upright is pivoted or hinged to the car, the top of said upright being provided with a horizontal arm connected thereto by a hinge, means substantially as described, for holding said hinged part rigidly therewith, when desired, and a post supporting a cam arranged alongside said track in a position to strike and operate said arm, substantially as set forth. 4th. In a mail pouch catching and delivering apparatus, the combination of the car, the receptacle A^1, mounted beneath its floor, a door or opening thereto through said floor, a hinged receptacle A^2, mounted as described and provided with an outwardly projecting arm, a cam mounted alongside the track for operating said arm, receptacles also arranged alongside said track for receiving pouches from said hinged receptacle A^2, a pivoted arm having a receptacle mounted upon one end and a cam formed upon the other also, arranged alongside said track, and a cam on the side of said car in position to strike the cam on the end of said pivoted arm, operate it substantially as set forth. 5th. In a mail pouch catching and delivering apparatus, the combination of a postal car, formed with an opening to receive the pouch, a post arranged alongside the track on which the car is mounted, a pivoted arm supported by said post, one end of which carries a receptacle and the other end of which is formed with a cam face, and a cam secured to the side of said car in a position to strike said cam face of the end of said pivoted arm and operate it, substantially as set forth. 6th. In a mail pouch catcher and deliverer, the combination, with a postal car provided with a receptacle beneath its floor to receive the pouch, an entrance to said receptacle, a post arranged alongside the car, a horizontal arm mounted on a vertical pivot in said post, one end of said arm being provided with a receptacle or pocket, and the other end being formed with a cam face, a spring arranged to hold said cam faced end forward, and a cam mounted on the side of the car in position to strike the cam faced end of said pivoted arm and operate it, substantially as set forth. 7th. A mail pouch catcher and deliverer, consisting of the postal car having the hinged receptacle A^2, with a projecting arm, a post arranged alongside the track formed with cam shaped top in position to strike said arm, receptacles arranged on each side of said post to receive pouches from the car, a horizontal arm provided with a receptacle on one end and a cam face on its other, pivoted in said post with its cam faced ends normally held forward, and a cam on the car for operating said arm, substantially as set forth. 8th. A mail pouch catcher and deliverer, consisting of the postal car provided with the hinged receptacle, substantially as described, and the post alongside the track carrying a portion of the mechanism for throwing the pouch to the car, the top of said post being hinged, whereby it may be turned back out of the way when not in use, substantially as set forth. 9th. a mail pouch catcher and deliverer, consisting of the postal car provided with a receptacle A^1, for receiving pouches, a pivoted receptacle A^2, for discharging pouches formed with the outwardly projecting arm a^4, and the cam A^3, secured on the side of the car for operating the mechanism for throwing pouches to the car, and a post arranged alongside the track carrying the pivoted arm B^4, provided with a receptacle upon one of its ends and a cam face upon its other, a spring for holding the said cam faced end forward, and the receptacles B^2 and B^3, arranged alongside said post to receive said pouches from the car, all substantially as set forth.

No. 41,976. Grate. (*Grille.*)

Henry Newton Hemingway, Auburn, New York, U. S. A., 16th February, 1893; 6 years.

Claim.—1st. The base, the bridge extending across the base, and provided with a pivot, the grate placed upon the pivot, and the stirrer provided with teeth upon its hub, and projections upon its arms, and a means for raising the stirrer, combined with the worm, which engages with the hub, and an endwise moving revolving operating rod, substantially as described. 2nd. The base, the bridge extending across inside of the base, and provided with a pivot, a lever pivoted upon the bridge, the revolving stirrer supported by the inner end of the lever, and provided with teeth upon its hub, and projections upon its arms and the grate, combined with the worm for revolving the stirrer, the endwise moving revolving rod which passes the worm, and the cone for engaging with the outer end of the lever for raising the stirrer, substantially as set forth. 3rd. The revolving endwise moving operating rod, provided with ratchet at its outer end, the cone secured to the rod, the bridge pivoted inside of the base and extended across it, the grates, the stirrer, and the lever for raising the stirrer, the handle provided with a sleeve journalled in the outer tubular portion or end of the bridge, the lever for revolving the rod, and a spring actuated catch for engaging with the ratchet upon the rod, all combined and arranged to operate, substantially as specified. 4th. The base, the bridge pivoted in the base, and provided with the pivot, the projections S, and a guide, the lever pivoted upon the bridge, and having its outer end to catch inside of the guide, the stirrer placed upon the outer end of the lever, the grate placed upon the pivot, the worm for revolving the stirrer and the grate, the endwise moving rod which extends through the worm, the cone which engages with the outer end of the lever, and a handle for revolving the rod, all combined and arranged to operate, substantially as shown. 5th. The grate having teeth or projections upon its outer edge, combined with the partially revolving locking rod which extends through the top of the base, and which is provided with a projection to engage with the curved surface upon the base, substantially as described. 6th. In a rotary grate, the combination, with the base of a bridge extending across it, having a pivot at its centre and bearings, of a shaft journalled in the bearings, a worm and a stirrer journalled upon the said central pivot, and provided with teeth which engage the said worm, substantially as set forth. 7th. In a revolving grate, the combination, with the base of a bridge which extends across the base, a grate upon the bridge, a stirrer having a cog wheel, a lever for raising the stirrer, and an endwise moving shaft having a cone for engaging the said lever, and a worm for engaging the cog wheel upon the stirrer, substantially as described.

No. 41,977. Sweating Bath. (*Suerie.*)

Ferdinand Riemer, Berlin, German Empire, 16th February, 1893; 6 years.

Claim.—1st. The method of bringing various parts of the body into perspiration by bringing the affected part only into direct contact with dry heat, generated in a box from a source of heat outside the said box, substantially as described. 2nd. A sweating bath for bringing various parts of the body to a perspiration by means of dry heat, consisting of the box A, having heat distributing plate *a*, perforated as described, said box having suitable apertures for the reception of the various members or parts of the body, in combination with a source of heat arranged underneath and outside the box, substantially as described.

No. 41,978. Toy Gun. (*Fusil-jouet.*)

Harvey F. Hubbard, Manitowoc, Wisconsin, U. S. A., 16th February, 1893; 6 years.

Claim.—1st. In a mechanically discharging gun, in combination, with the barrel, the magazine adjacent thereto, said barrel and magazine, having each a lateral aperture of size to admit one charge, a charge conveyor and means for moving it longitudinally with respect to the barrel, the cavity in said conveyor when at one position registering at one end with the magazine aperture and covering the barrel aperture, and when at another position registering at the opposite end with the barrel aperture and covering the magazine aperture, whereby at each reciprocation it is adapted to convey a charge from the magazine to the barrel, substantially as set forth. 2nd. In a mechanically discharging gun, in combination, with the barrel, a magazine parallel thereto, a charge conveyor extending transversely between the magazine and barrel, and provided with guides on the barrel and magazine, whereby it is retained between them and adapted to reciprocate longitudinally with respect to them, the magazine and barrel having each an aperture in their opposite sides, which register with the opposite ends of the charge conveyor at different longitudinal positions of the latter, and means for moving the charge conveyor longitudinally with respect to the barrel and magazine, substantially as set forth. 3rd. In a mechanical discharging gun, in combination, with the barrel, the magazine adjacent thereto, the barrel and magazine having apertures in their proximate sides, a charge conveyor extending between them and registering at one position with the magazine aperture, and at another position with the barrel aperture, a charge ejecting plunger and the connections by which it is operated, and a rod operated by the same connections and engaging the charge conveyor to reciprocate it from the position at which it registers with the barrel opening, to that at which it registers with the magazine opening, substantially as set forth. 4th. In a mechanically discharged gun, in combination, with the discharge plunger, the charge receiving barrel and a magazine adjacent thereto, said barrel and magazine having corresponding apertures for the passage of a charge from the magazine to the barrel, and registering at one position with the magazine aperture, and at another position with the barrel aperture, the link D^2, which operates the discharge plungers, the rod K connected thereto, the charge conveyor having rigid with it the stops H^2 and H^4, and said rod having the downwardly projecting end which engages said stops, whereby the operation of said link in retracting the plunger, and returning to normal position reciprocates the charge conveyor, substantially as set forth. 5th. In combination, substantially as set forth, the barrel C, the magazine E, parallel therewith, the charge conveyor comprising the sleeves H, H^1, adapted to slide on said barrel and magazine, and the tube F, connecting them, the barrel and magazines having at different longitudinal positions the apertures for the passage of a charge, and means, substantially as described, for reciprocating the charge conveyor to cause it to register alternately with the barrel aperture and with the magazine aperture. 6th. In a mechanically discharging gun, in combination, with the discharge barrel having a lateral aperture through which it may receive a charge, and means for closing the said aperture after the charge is received, a spring located between said charge receiving aperture and the discharge end and normally obstructing the bore to resist the passage of the charge, substantially as and for the purpose set forth.

No. 41,979. Locomotive. (*Locomotive.*)

Henry Ashton Ramsay, Baltimore, Maryland, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. The combination, in a dummy locomotive, of an atmospheric, horizontal tubular exhaust steam surface condenser, constructed as shown, in conjunction with a rotary blower E, placed in the rear of the ash pan of the boiler, connected with funnel ended suction pipes, substantially as described. 2nd. In dummy steam locomotives, the combination of exhaust steam pipes T, entering a tubular air surface condenser D, containing horizontal shelf plates or partial diaphragms, for detaining and directing the course of the steam, said condenser having open communication with the water tanks A, and provided with a discharge vapor pipe M, preventing an accumulation of pressure in the condenser, also open ended horizontal inlet tubes for circulating cold air, the passage of the same being promoted by the movement of the locomotive, and the suction effect of the blower E., all substantially as described.

No. 41,980. Car Mover.
(*Appareil pour mouvoir les chars.*)

Charles W. Pierce, Union City, Indiana, U.S.A., 16th February, 1893; 6 years.

Claim.—A car starter and mover, comprising the two side pieces, having the connecting web, and adapted to straddle the head of the rail, one of the lower ends of the side pieces being in rear of the other, lugs on the lower ends of the side pieces at their inner faces adapted to engage the head of the rail, one of said lugs being in advance of the other, and a lever fulcrumed between the upper ends of the side pieces, and having the lower end reduced for engaging the rim of the car wheel, for the purpose described.

No. 41,981. Support for Curtain Poles.
(*Porte rideau.*)

Emma Martel, San Francisco, California, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. In combination with the brackets B, hinged at their lower ends to frame or casing A, the pole C, securely clamped to the outer ends of the brackets. 2nd. In combination with the hinged brackets B, and the rigid pole C, the hook or catch D, carried by the pole, and the notch *e*. 3rd. The brackets B, hinged to the casing A, and provided with a rearward extension *d*, in combination with the pole C, and means for holding the bracket with its extension over the casing. 4th. The brackets B, hinged at their lower ends to the casing A, and provided at their upper ends at a considerable distance from the casing, with means for securely clamping in position a curtain pole in combination with a curtain pole.

No. 41,982. Ticket Machine. (*Machine à billets.*)

James D. Gibbs, Jeffersonville, Indiana, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. In a machine of the character described, the combination of a type wheel, the removable type resting on the exterior periphery of the wheel, and a clamp or case which receives the type within itself and engages the type wheel by frictional contact to hold the type on the periphery of said wheel, for the purpose described, substantially as set forth. 2nd. In a machine of the character described, the combination, with a type carrying wheel, of type located upon the periphery thereof, and a type clamp or case which receives the type within itself, and is provided with spring arms, which straddle the type wheel and operate to hold the said type case, and the type in a fixed position thereon, substantially as described. 3rd. In a machine of the character described,

the combination, with a type carrying wheel provided with recesses in the lateral faces thereof, of a type located upon the periphery of said type wheel, and a type clamp or case which engages the type firmly, and is provided with spring arms adapted to enter the recesses of the wheel, as and for the purpose specified. 4th. In a machine of the character described, the combination, with a type carrying wheel, and type of less width at the face than at the bottom, of a type clamp or case consisting of a skeleton frame, which receives the type and permits the same to project through and beyond the face of said clamp, and provided with spring arms attached to the frame, which clamp the case and the type upon the periphery of the type wheel, as and for the purpose specified. 5th. In a ticket printing machine, the combination of a type wheel, two or more series of type seated on the periphery of said wheel, and the individual type having the faces thereof of less cross sectional area than the bases, and two or more slotted clamps or cases resting on the shoulders of the type, and having the faces of the type extending through the slot therein, substantially as shown and described. 6th. In a machine of the character described, the combination of a type wheel, two or more series of type resting on the periphery of the type wheel, the individual type being of less cross sectional area at the face than at the bottom, whereby side shoulders are formed, two or more type clamps or cases, each consisting of a plate adapted to rest upon the shoulders of the type, and provided with a slot to receive said type, and means for holding each type case in fixed engagement with the type wheel, as and for the purpose specified. 7th. In a machine of the character described, the combination of a type wheel, the type mounted on the periphery thereof, and the exterior case or clamp constructed to engage and hold said type, and having means to hold itself rigidly on the type wheel by frictional contact therewith, substantially as described. 8th. In a machine of the character described, the combination, with a type wheel, of two or more removable casses or clamps held in a fixed position on said wheel, and the series of shouldered type resting on the exterior periphery of the wheel, and arranged with slots in the type cases or clamps, and removable from the same, substantially as described. 9th. In a machine of the character described, the combination, with a type wheel, of removable type mounted on the periphery of said wheel, and a case which is clamped to the face and periphery of said wheel, and engages the type to hold the same in a fixed position thereon, substantially as described. 10th. In a machine of the character described, the combination, with a destination wheel having suitable inscriptions on its periphery, of a limit wheel adjacent to the destination wheel, for inscribing on the ticket a time limit within which the ticket is valid, an inking device, and a movable impression table carrying a dating mechanism for inscribing on the ticket the date of sale thereof, substantially as and for the purpose specified. 11th. In a machine of the character described, the combination, of a shaft protruding at one end beyond, the machine, a destination wheel mounted thereon within the casing of the machine, having names of stations upon its periphery, and an index plate attached to the extended end of said shaft, having produced thereon the names of stations corresponding in designation, and sequence with the stations upon the destination wheel, substantially as and for the purpose specified. 12th. In a machine of the character described, the combination, with a shaft, separate destination wheels mounted thereon at a suitable distance from each other, having the same names and stations upon their peripheries, and an exterior index plate secured to the extended end of said shaft, bearing designations corresponding in character and sequence with the designations of the destination wheel, of an inking device, and an impression table located above said wheels and carrying the dating mechanism, substantially as and for the purpose set forth. 13th. In a machine of the character described, the combination, with a shaft, destination wheels mounted thereon, having the same names of stations upon their peripheries, and an index plate secured to said shaft bearing designations corresponding in character and sequence with the designations of the destination wheel, of an inking device, a cutting mechanism located between the wheels, and an impression table, substantially as specified. 14th. In a machine of the character described, the combination, with destination wheels, and an index plate adapted for simultaneous revolution with the destination wheels, and bearings designations corresponding in character and sequence with the designations on the destination wheels, of an inking device, a cutting mechanism, a removable impression table mounted over the destination wheels, and means whereby the impression table may be operated independently of the cutting mechanism or jointly therewith, substantially as described. 15th. In a ticket printing machine, the combination, with destination wheels arranged for simultaneous rotation, and operating devices therefor, of an impression table and cutting mechanism situated between said destination wheels, and constructed for operation jointly with the impression table, for the purpose described, substantially as set forth. 16th. In a ticket printing machine, the combination, of a destination wheel having the names or name of stations upon its periphery, a drum carrying special characters or words independent of the destination wheel, and at one side of the same, an inking device, and an impression table or bed, substantially as described, for the purpose set forth. 17th. In a ticket printing machine, the combination of a destination wheel having the names of stations on its periphery, a special drum situated at one side of the destination wheel, with its axis parallel or substantially so, with the axis of said destination wheel, said special drum being wholly independent of the destination wheel, and adapted to be rotated on its axis separately from the adjustments of the destination wheel, an inking device, and an impression table or bed, substantially as described. 18th. In a machine of the character described, the combination, with destination wheels having the names of the same stations upon their peripheries, and an index plate connected with said wheels bearing designations corresponding in character and sequence with those upon the destination wheels, of drums carrying special characters or words, and means, substantially as shown and described, for operating said drums independently of said destination wheels, as and for the purpose specified. 19th. In a machine of the character described, the combination, with destination wheels having the names of the same stations upon their peripheries, and an index plate connected with said wheels bearing designations corresponding in character and sequence with those upon the destination wheels, of drums carrying special characters or words, located between the destination wheels, and a cutting mechanism, the knife of which is located over and between the drums, substantially as specified. 20th. In a machine of the character described, the combination, with destination wheels having the names of the same stations upon their peripheries, and an index plate connected with said wheels bearing designations corresponding in character and sequence with those upon the destination wheels, of drums having special characters or words produced upon various of their faces and located between the destination wheels, the said drums being provided with type receiving recesses on one or more of their faces, substantially as and for the purpose set forth. 21st. In a machine of the character described, the combination, with destination wheels having the names of the same stations upon their peripheries, and an index plate connected with said wheels bearing designations corresponding in character and sequence with those upon the destination wheels, of drums polygonal in cross section carrying special characters or words upon various of their faces, and having a type receiving recess in one or more of their faces, and a type clamp or case connected to one of the recessed faces, substantially as shown and described. 22nd. In a machine of the character described, the combination, with destination wheels having the names of the same stations upon their peripheries, and an index plate connected with said wheels bearing designations corresponding in character and sequence with those upon the destination wheels, of drums having special words or characters produced thereon, and means for operating said drums independently of the destination wheels, a cutting mechanism located above the wheels and drums provided with a pendent bar extending downward between the drums, and a knife above the bar essentially vertical alignment therewith, an inking ribbon extending over the wheels, and drums, and under the bar of the cutting mechanism and an impression table located above the ribbon, substantially as shown and described. 23rd. In a machine of the character described, a drum polygonal in cross section, having words or characters produced upon several of its faces, and provided with a recess in one or more of its faces adapted to receive type, and the slotted clamp or case attached to the drum for holding the type thereon, and arranged relatively to the drum, and type to permit said type to project through the slot therein, substantially as and for the purpose specified. 24th. In a ticket printing machine, a polygonal drum having words or characters upon several of its faces, and a blank space or spaces on other faces thereof, type applied to said blank face or faces of the drum, and a slotted case for holding said type on the face or faces of said drum, as and for the purpose described. 25th. In a ticket printing machine, a polygonal drum having words or characters upon several of its faces and having a blank space or spaces, type applied to said blank, space to provide special matter to be printed on a ticket, and the slotted clamp connected to the drum and engaging the type to hold the latter in a fixed position on said drum, for the purpose described, substantially as set forth. 26th. In a machine of the character described, the combination of a slotted flat face plate on which a ticket is placed to be printed, a destination wheel having inscriptions on its periphery, and projected through the slot in said face plate, and a special drum journalled in said face plate and situated at one side of the destination wheel, substantially as described. 27th. In a machine of the character described, the combination, with two spaced destination wheels and an index plate connected therewith, of a slotted face plate extending over the periphery of the wheels, and special drums journalled in said face plate between said wheels, substantially as and for the purpose specified. 28th. In a machine of the character described, the combination, with the spaced destination wheels, and an index plate connected therewith, of a slotted face plate extending over the periphery of the whtels, special drums arranged in the slot of said face plate between said wheels, a cutting device attached to the face plate, an impression table and means, substantially as described, for operating the cutting device and impression table, substantially as described. 29th. In a machine of the character described, the combination, with two spaced destination wheels and an index plate connected therewith, of a slotted and hooded face plate extending over the periphery of the wheels, special drums journalled in said plate between the said wheels, a cutting device attached to the face plate, a dating mechanism, an impression table, and a spring controlled arm connected with the impression table by devices which permit the arm to be operated simultaneously with the cutting mechanism or independently of the same, substantially as described. 30th. In a machine of the character described, the combination, with

the spaced destination wheel, and an index plate connected therewith of a slotted and hooded face plate extending over the periphery of the wheels, special drums journalled in said face plate between the wheels, a cutting device artached to the face plate provided with an attached guide bar extending downward between the drums, a dating mechanism, an inking ribbon passed over the destination wheels, the drums and dating mechanism, and under the guide bar, an impression table, and a pivoted arm connected with said table, as and for the purpose specified. 31st. In a machine of the character described, the combination, with the spaced destination wheels, a limit wheel, an index plate connected with the spaced destination wheels, and a pivoted arm located above the said wheels, of a slotted and hooded face plate extending over the periphery of the wheels, special drums journalled in said face plate between the destination wheels, a dating mechanism, a cutting device attached to the face plate, and provided with an attached guide bar extending downward and between the drums, an inking ribbon passed over the destination wheels, the limit wheels, the dating mechanism, and under the guide bar, and a pivoted impression table provided with an arched under surface for contact with the cutting mechanism, and a connection, substantially as shown and described, between the impression table and the pivoted arm, whereby the said arm may be used independently of the impression table, or the two may be used simultaneously, as specified. 32nd. In a machine of the character described, the combination, of a face plate, the destination wheels, a cutting device attached to said face plate and operating between the destination wheels, an inking ribbon arranged out of the path of the cutting device and passing over the destination wheels, and an impression table, substantially as and for the purpose described. 33rd. In a ticket printing machine, the combination, of a face plate, the destination wheels in a slot in said face plate, a cutting device situated between the destination wheels, and having the stationary bar rigid with the face plate, and a movable knife, and a dating arm connected with the movable knife of the cutting mechanism by devices which permit said arm to be operated jointly with the cutting mechanism or independently of the same, substantially as described. 34th. In a ticket printing machine, the combination, of a face plate, the destination wheels, the cutting device attached to said face plate between said wheels, and having a depending rigid bar, an inking ribbon passing over the destination wheels and beneath the pendent bar of the cutting mechanism, and an impression table, substantially as described. 35th. In a ticket printing machine, the combination, of a face plate, the printing wheels, a movable impression bed, a cutting device situate between the printing wheels, and having its movable knife arranged in the path of the impression bed, and a dating arm adapted to be depressed independently of the cutting mechanism or simultaneously therewith. 36th. In a ticket printing machine, the combination, of a face plate, printing wheels, a cutting device situated between the wheels, and having a bar rigid with the face plate and a movable knife pivoted to said plate, a dating arm, a pivoted arm having a saddle which fits over the dating arm, and an impression bed arranged over the movable knife of the cutting mechanism, and rigid with the pivoted arm, substantially as described.

No. 41,983. Sash Holder and Lock. (*Arrête-croisée.*)

Wesley Coulter, Pittsburg, Pennsylvania, U. S. A., 16th February, 1893; 6 years.

Claim.—1st. A sash holder, comprising a base plate having a slot, a wheel journalled to the inner side of the said plate, and projecting through the slot to engage a rack, a spring actuated pawl engaging the said wheel, a lever pivoted between its end to the said plate, one end of the lever engaging the pawl, and a handle at the opposite end of the lever, projecting through an opening in the plate, substantially as set forth. 2nd. A combined sash lock and holder comprising a base plate, a cog wheel journalled thereon and adapted to engage a rack, a pawl engaging the said wheel, a lever for operating the pawl, a second lever pivoted between its ends, one end adapted to engage the said wheel, and a cam for engaging and operating the other end of the lever for the purpose described, substantially as specified.

No. 41,984. Shirt. (*Chemise.*)

Henry Arendt Hagen, Joseph Bingeman and Abram O. Boehmer, all of Berlin, Ontario, Canada, 16th February, 1893; 6 years.

Claim.—In an open back shirt, the combination, with the sides B and B', of the triangular piece C, having one edge secured along the edge of one of the said sides, and the other secured to the other side transversely extending from or near the base of the slit to the side of the seam, and leaving the hypothenuse of said triangular piece free, substantially as set forth.

No. 41,985. Nut Lock. (*Arrête-écrou.*)

Samuel Jefferson Stevens, and David S. Trimmer, Springfield, Ohio, U.S.A.; and Lewis T. Constable, Hamilton, Ontario, Canada, 16th February, 1893; 6 years.

Claim.—1st. In a nut lock, the combination, with a supporting bar, of a locking plate adjustably mounted on said bar, and provided with a hook portion to engage with the bar, and maintain the plate in locking position. 2nd. In a nut lock, the combination, with a supporting bar having longitudinal recesses or grooves forming overhanging lips, of a locking plate having a double tongued projection adapted to enter said grooves or recesses and engage therewith by rotating the plate, and having also a hook portion to engage with the bar, and maintain the plate in locking position. 3rd. In a nut lock, the combination, with a supporting bar having longitudinal slots to admit the fastening bolts, and recessed along the edges of the slots, of a spring locking plate having a double tongued projection at one end adapted to enter the slots and engage with the recesses by turning into locking engagement with the adjacent nut, and a hook portion forming a lip adapted to snap over the said bar after such rotation, and maintain the plate in locking position. 4th. In a nut lock, the herein described supporting bar, consisting of a longitudinal slotted piece having recesses or grooves on its edges forming overhanging lips, substantially as and for the purpose described. 5th. In a nut lock, the herein described locking plate, the same consisting of a resilient piece adapted to engage with a nut, and having a double tongued projection on one end, and a hook portion forming a lip, the resilience of the plate admitting of the lateral engagement of the lip portion, substantially as shown and described.

No. 41,986. Brick Making Apparatus.

(*Machine à faire les briques.*)

Henry Warren Mead, Quincy, Illinois, U.S.A., 16th February, 1893; 18 years.

Claim.—1st. In a molding or like machine, the combination, with a reciprocating stem or plunger head carrying a plunger, of a frame comprising a reciprocating cross head carrying another plunger, depending arms, and a transverse shaft journalled in said arms, star wheels mounted on said shaft, and a main shaft carrying cams for operating the several plungers, said main shaft being extended through openings in the said arms, and adapted to be accommodated when said frame is moved in the recesses of the star wheels, substantially as set forth. 2nd. In a molding or like machine, the combination of a frame, a main shaft journalled in the sides of said frame and having operating cams, an upper plunger frame having a transverse shaft provided with star wheels the radical projections of which form cams adapted to be engaged by cams upon the main shaft, and the recesses of which are adapted to accommodate said main shaft during the movement of the plunger frame, substantially as set forth. 3rd. In a molding or like machine, the combination, with a reciprocating plunger frame having a transverse shaft, of star wheels mounted upon said shaft and provided with studs or like devices extending outwardly from the projecting portions thereof, and the main shaft extending through openings in the arms of the plunger frame and having cams provided with recesses to engage the studs of the star wheels, substantially as and for the purposes set forth. 4th. In a molding or like machine, the combination of the upper plunger frame, the main shaft having cams to force said frame in an upwardly direction, a shaft journalled transversely between the side pieces of the upper plunger frame, star wheels mounted upon said shaft, cams upon the main shaft adapted to engage said star wheels to force the upper plunger frame in a downward direction, and a pawl pivoted to the main frame and adapted to engage one of the star wheels, substantially as set forth. 5th. In a molding or like machine, the combination of the side pieces or uprights having wedge-shaped projections upon their inner sides, the front and rear sections of the bed or table, having downwardly extending flanges and secured detachably between said uprights or side pieces, said table sections being provided with shoulders at their upper inner edges, a mold having flanges resting upon said shoulders and the wedges driven between the ends of said mold, and the wedge-shaped projections upon the inner sides of the uprights, substantially as set forth. 6th. In a brick press, the herein described mold box, comprising side pieces having vertical grooves in their inner sides, end blocks each composed of a single piece of metal having laterally projecting vertical flanges and oblong bolt holes, a spacing block and connecting bolts which pass through the said oblong holes in the end pieces, substantially as and for the purposes set forth. 7th. In a molding or like machine, the combination of the side pieces or uprights, the rear table section having downwardly extending flanges and secured by means of bolts to the said uprights, the horizontal flanges and wedge-shaped projections formed upon the inner sides of the uprights, a front table section having downwardly extending flanges resting upon the horizontal flanges of the uprights and provided with laterally extending ears or lugs bolted to said uprights, the mold having flanges resting upon shoulders at the upper inner edges of the front and rear table sections, and the securing wedges driven between the ends of said molds, and the wedge-shaped projections upon the inner sides of the uprights, substantially as set forth.

No. 41,987. Separator for Ores.

(*Séparateur des minérais.*)

Clinton M. Ball, Troy, New York, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. An ore separator, comprising a rotary screen in a magnetic field, a shute or other feeding device for passing ore to the screen, and a regulating or controlling device for varying the strength of the field. 2nd. An ore separator, comprising a series of rotary screens in successive magnetic fields, the successive screens being operated at different speeds, and the ore being fed to the screens in succession, and a regulating or controlling device for varying the strengths of the magnetic fields, as and for the purpose

described. 3rd. The method of separating magnetic ore from its impurities, which consists first in crushing the ore, then magnetically separating the mass into three grades, tailings, middlings, and concentrate, varying in the quantity of iron contained, then recrushing the middlings which contain a percentage of iron, to mechanically dissociate the iron from the adherent gaugue, and then magnetically withdrawing the iron from the recrushed material.

No. 41,988. Automatic Cartridge Loader.

(*Charge cartouche automatique.*)

Frank Charles Bennet, Oliver Harlow Bennet, and John Samuel Watson, Jamestown, North Dakota, U. S. A., 16th February, 1893; 6 years.

Claim.—1st. In an automatic cartridge loader, the combination, of a horizontally rotating cartridge wheel having a series of shell openings, a shell hopper above the same, a shell tube to convey shells from said hopper to a point beneath the wheel, a clutch adjacent to the lower end of the tube and immediately underneath the wheel in such position that the shell openings of the wheel successively register with the clutch opening, a pivoted carriage underneath said tube, and clutch having a socket adapted to receive a single shell head downwards, and registering in one position of the carriage with the shell tube, and in the other position with the clutch opening, a plunger in said carriage to expel a shell therefrom, and means connected with the driving mechanism for rocking said carriage, and operating said plunger, substantially as described. 2nd. In an automatic cartridge loader, the combination, of an upright conduit for conveying shells longitudinally of itself to the loading mechanism, a hopper adapted to hold the shells arranged transversely therein with heads on either side indiscriminately, a chute connecting said hopper with the upper end of said conduit, means for delivering the shells successively from said hopper into said chute transversely thereof, two longitudinal grooves or ways in the bottom of said chute, both leading to said conduit, and a ridge or projection between said ways, by means of which the rolling movement of a shell is stopped, and the heavier or cap end thereof is caused to tilt downward into the groove beneath, and thus to be delivered head first to the conduit, substantially as and for the purposes set forth. 3rd. In an automatic cartridge loader, the combination with its shell conduit, of a hopper adapted to receive and hold shells transversely therein, having an opening at one end thereof, a chute leading from said opening to said conduit, a shell turning device in said chute, a gate for said opening operated by suitable connections with the driving mechanism for delivering single shells successively from the hopper transversely of said chute, and an automatic feed arranged in said hopper and actuated by suitable connections with the driving mechanism for carrying the shells in the hopper forward to the gate, substantially as and for the purposes set forth. 4th. In a cartridge loader, the combination with its shell magazine or tube, of a hopper adapted to receive and hold shells arranged transversely therein and having a longitudinal slot in the bottom thereof, a transversely flutted feed bar arranged in said slot, mechanism for actuating said feed bar with a four-fold movement, first upwards into contact with the shells in the hopper, then forward to advance the layer of the shells in contact therewith, then downward and backward to its first position, a vertically sliding gate at the front of the hopper, having fingers adapted to engage the adjacent shell in the hopper and to force the same out of the hopper, and a chute connecting said hopper with said magazine, and having a shell turning device arranged therein, substantially as and for the purpose set forth. 5th. In a cartridge loader, the combination with its shell magazine, of a shell hopper adapted to hold shells arranged transversely thereof, a feed device arranged in the bottom of said hopper, a vertically sliding gate arranged at the front of the hopper, having a transverse slot and carrying fingers adapted to engage the adjacent shell in the hopper and deliver it through said slot, an inclined chute, connecting the hopper with the magazine, provided with ways or grooves leading to the opening in the magazine, and a ridge or projection between said grooves or ways adapted to turn a shell rolling down said chute into and longitudinally of one of said grooves, and means for operating said feed device and said gate, substantially as and for the purposes set forth. 6th. In a cartridge loader, the combination of the upright magazine 111, the hopper 79 provided with a feeding device arranged in its bottom, the sliding gate 81, arranged therein, having a transverse slot 82, and the fingers 83, the chute 113, connecting said hopper with said magazine, the central ridge 115, arranged in said chute, the inclined ways 116, on either side of said ridge leading to said magazine, and means connected with the driving mechanism of the machine for automatically operating said feeding mechanism, and said gate synchronously with the movements of the other parts of the machine, as and for the purposes set forth. 7th. In an automatic cartridge loader, the combination, with its shell magazine and hopper, of a feeding mechanism arranged in the bottom of said hopper comprising the transversely flutted feed bar 93, toggle joints 97, supporting the same upon the depending frame 99, the link 101, connecting said toggle joints with the operating lever 103, the laterally projecting pin 109, fixed to said feed bar, the shoe shaped block 105, adapted to serve as a stop for said pin to prevent the forward movement of said feed bar until lifted sufficiently by the straightening of the toggle joints to carry the pin over said block, and as a guide to direct said pin downward in its reverse movement, and the spring 107, bearing against the undersurface of said block adapted to serve as a guide to direct said pin in a reverse movement between itself and the block, substantially as described. 8th. In a cartridge loader, having a shell hopper and magazine, the combination therewith of means for turning the shells delivered from said hopper, and directing them cap end downward in said magazine comprising an inclined chute leading from the outlet of the hopper to the magazine, an inclined groove or way on each side of said chute leading to said magazine, and an upwardly inclined ridge or projection arranged between said groove, substantially as described. 9th. In an automatic cartridge loader, having a conduit for receiving shells transversely thereof, and for delivering them longitudinally thereof, the combination therewith of means for turning the shells from a transverse to a longitudinal position in said conduit with the head or cap end forward, comprising in combination two longitudinal grooves or ways in the bottom of said conduit, and a centrally inclined ridge or projection between said grooves, extending above the bottom of the conduit, upon which the shells roll in their descent and by means of which their cap end is caused to till downward and forward into the groove beneath, substantially as described. 10th In an automatic cartridge loader, the combination with its shell magazine or tube, of a hopper adapted to receive and hold shells transversely therein, a sliding gate having fingers adapted to engage the adjacent shell in the hopper and to force it out of the same, and a chute connecting said hopper with said magazine, and having a shell turning device arranged therein, substantially as and for the purposes set forth. 11th. In an automatic cartridge loader, the combination of an upright shell tube, an inclined chute leading thereto, a shell hopper connected with said chute, mechanism for delivering shells successively from said hopper to and transversely of said chute with the cap ends thereof on either side of said chute indiscriminately, and a shell turning device in said chute by means of which said shells are turned from a transverse to a longitudinal position with the cap end forward, substantially as described. 12th. In a cartridge loader, the combination with its cartridge wheel and magazine tube, of the rocking carriage 117 arranged underneath the outlet of said magazine and having an adjustable receptacle or socket adapted to receive a single shell from said magazine, a plunger arranged in said carriage, means connected to said plunger, and carriage operated by the driving mcehanism of the machine, adapted to rock said carriage away from said magazine, and underneath an opening of said cartridge wheel, and to reciprocate said plunger in said carriage and automatic locking mechanism holding said plunger from movement upward in said carriage except when in line with an opening in said cartridge wheel, substantially as and for the purposes set forth. 13th. The combination of the magazine tube 111, the cartridge wheel 47 the pivoted carriage 117 with its barrel or shell socket registering in its inclined position with the magazine, and in its vertical position with the shell opening of the cartridge wheel, the plunger 129 arranged in said carriage, and serving as a bottom to its shell socket or receptacle, and having the arm 137, the reciprocating rod 139 operated by the driving mechanism of the machine and connected to said arm 137, the pivoted dog 137 adapted to lock said plunger when the carriage is in an inclined position, and the shell holder or clutch 135 arranged underneath and registering with the shell opening of the cartridge wheel, and adapted to receive and support a shell in the wheel as delivered to it from said carriage, substantially as and for the purposes set forth. 14th. In an automatic cartridge loader, the combination of a cartridge wheel provided with shell openings, mechanism for feeding shells into said openings, and a fixed clutch intermediate of the cartridge wheel and shell feeding mechanism through which the shell is thrust into the openings in the wheel, and which serves to support the shell in the wheel, but releases it when moved laterally by the rotation of the wheel, substantially as described. 15th. In an automatic cartridge loader, the combination, with its cartridge wheel, provided with a series of shell receptacles, and mechanism adapted to feed shells thereto, of a supporting clutch intermediate of said feeding mechanism, and wheel adapted to support a shell in said wheel as first deposited therein until advanced toward the loading mechanism, comprising a pair of spring controlled jaws with the space between slightly narrower than the diameter of a shell, substantially as described. 16th. In a cartridge loader, the combination, with its cartridge wheel, of means connected with the driving mechanism of the machine for rotating said wheel with a step by step movement, and for locking the same in its successive positions, comprising in combination the knife jointed dog 55, pivoted to the radius arm 59, and linked to the swinging lever 151, and having a stop pin 169, lying in a slot 71, in the radius arm, adapted when in its extended or straight position to engage with the periphery of said wheel, a spring bolt 157, adapted to engage and lock said wheel at the limit of each successive step by step movement, and means for alternately operating said dog and releasing said bolt, substantially as described. 17th. In a cartridge loader, means for automatically feeding wads to the loading mechanism thereof, comprising in combination, the upright wad, tube or magazine 195, the hopper 197, arranged at the top thereof, a sliding wad carrier or feeder adapted to be moved upon the bottom of the hopper and across the opening in the magazine, and having openings therethrough each adapted to receive and hold a wad with its face resting upon the bottom of the hopper, the under edges of said openings being bevelled or rounded, and means for moving said carrier across the opening to the maga-

zine, substantially as described. 18th. In a cartridge loader, means for automatically delivering wads to the loading mechanism, comprising in combination, a wad hopper or receptacle, an upright cylindrical tube of suitable diameter to carry a series of wads regularly arranged therein with their faces in contact with each other, connected with the bottom of said hopper, and a carrier arranged in said hopper, and travelling over the opening to said tube having openings therethrough, each adapted to receive a wad, and to carry it along the bottom of said hopper and deposit it in said tube, substantially as described. 19th. The combination, of the tube 195, the hopper 197, the clearing brushes 205, rotating oppositely on either side of the opening to said tube, the perforate carrier 201, arranged in said hopper, and means for reciprocating the same upon the bottom of said hopper, underneath and in contact with said brushes. 20th. Means for delivering wads successively to the magazine or feeding tube, consisting of a hopper adapted to hold a promiscuous mass of wads, a carrier sliding upon the bottom of the hopper and over the top of said tube, of substantially the thickness of a single wad having openings therethrough of suitable size to allow a wad to lie therein, and arranged to successively register with the tube opening in the movement of the carrier. 21st. Means for delivering wads successively to the magazine or feeding tube, comprising in combination, a carrier, of substantially the thickness of a single wad, travelling over the top of said tube, and having openings therethrough, each of suitable size to allow a wad to lie therein, and adapted to successively register with the tube opening in the movement of the carrier, and clearing brushes rotating in contact with the upper surface of said carrier. 22nd. In a cartridge loader, means for automatically charging a shell with powder or shot and wads, comprising in combination a suitable table or shelf, having an opening therethrough adapted to receive the open end of a shell from beneath, a charging block adapted to be reciprocate upon said table over said opening, and having an opening of sufficient size to hold a predetermined number of wads, and another opening adapted to hold a predetermined charge, said openings alternately registering with the shell opening in the reciprocation of the block, and with tubes or conduits for wads, and powder or shot and a plunger adapted to force into the shell the wads deposited by the charger, substantially as and for the purposes set forth. 23rd. In a cartridge loader, having a suitable loading table or shelf with an opening therethrough for conveying the charge and the wads to a shell beneath, and a wad plunger reciprocating through said opening, means for automatically conveying wads and charges of powder or shot to said opening, consisting of a reciprocating block sliding upon said table over said opening, and having an opening therethrough of a capacity to hold a predetermined number of wads from suitable sources of supply, and adapted respectively to alternately receive and convey wads and charges of powder or shot from the sources of supply to said shell opening, substantially as and for the purposes set forth. 24th. The combination of the shelf 173, having the opening 175, arranged therethrough, adapted to receive the open end of a cartridge shell, and the wad starter, 177, arranged in the top of said opening, the plunger 219, reciprocating through said opening, the wad tube 195, arranged at one side of said opening 175, the powder or shot tube 193, arranged on the opposite side of said opening, and the reciprocating block 179, having the charge opening 187, and the wad opening 191, adapted respectively to alternately register with said wad tube and said powder or shot tube and with said opening 175, substantially as and for the purposes set forth. 25th. In a device of the class described, the combination with a loading shelf, having a shell opening, and a powder or shot tube above said shelf and offset from said shell opening, of a charging block arranged upon said shelf and underneath the outlet of said tube provided with an opening therethrough of adjusted capacity to contain a predetermined charge and means for reciprocating the same, and causing its opening to alternately register with said shell opening and said tube. 26th. In a device of the class described, the combination with the loading shelf having a shell opening therethrough, a plunger adapted to be forced downward through said opening and tubes respectively for powder or shot and wads arranged above said shelf on either side said opening of a charging block arranged upon said shelf underneath said tubes and having openings therethrough for holding respectively wads and a charge of powder shot, and means for reciprocating said block so as to cause its openings to register alternately with the powder or shot tube and shell opening, and with the shell opening and wad tube, substantially as described. 27th. In a cartridge loader, having a loading table or shelf provided with an opening adapted to receive the open end of the shell from beneath and to convey to said shell the charge and wads, means for automatically inserting a shell into said opening, consisting of the vertically sliding rod 223 provided with a lifting spring, an automatic locking mechanism, and the foot 225 arranged underneath said opening adapted to receive a shell and to raise it upward into said opening when actuated by the movement of said rod, in combination with means for automatically tripping said locking mechanism, and means for forcing said rod downward with its supported shell, substantially as and for the purpose set forth. 28th. In an automatic cartridge loader, the combination with the loading shelf having a shell opening therethrough, mechanism for carrying a shell underneath said opening, spring actuated mechanism for lifting and supporting the shell in said opening, a wad plunger reciprocated through the shell opening and adapted to drive a wad into said shell upon the charge and to force the shell downward out of the opening against the tension of the lifting mechanism, and automatic locking mechanism adapted to hold said lifting mechanism in its lower position, and to be tripped by the primary driving mechanism to release it, substantially as and for the purposes set forth. 29th. The combination of the vertically movable clutch 241 having the socket 243, the slot 271 through the said wall of said socket the fingers 245 upon the rim of the rocket projecting over the same, the fixed extractor pin 269 projecting into said socket through said slot 271, an the continuously revolving crimping head 255 having transverse grooves 257, substantially as described. 30th. The combination, of a vertically movable clutch, having a socket to receive the head of the cartridge, crimping mechanism above said clutch, adapted to crimp a cartridge when lifted by the clutch, and a fixed extractor pin projecting into said socket beneath the head of the cartridge and adapted to force the cartridge from the socket as the clutch is lowered, substantially as and for the purposes set forth. 31st. The combination, of a vertically movable clutch adapted to receive the head of a cartridge, crimping mechanism above said clutch, extractor fingers upon said clutch, engaging the rim of the cartridge head, adapted to withdraw the cartridge from the crimper, and a fixed extractor pin projecting into said clutch beneath the head of the cartridge, and adapted to force it out of the clutch as the clutch is lowered, substantially as described. 32nd. The combination with an automatic cartridge crimping device, of a vertically movable clutch, adapted to receive and hold the head of the cartridge, and having fingers engaging the rim of said head adapted to withdraw it from said crimper, a socket to receive the cartridge head and hold the same from turning, means for forcing the shell out of said socket with the downward movement of the clutch, a pivoted lifting lever engaging said clutch, a sliding rod engaging said lever and adapted to operate the same, provided with a lifting spring and a self locking mechanism, and means for moving said rod against the tension of the spring to permit it to be locked, and for tripping said locking mechanism, so as to release said spring, substantially as and for the purposes set forth. 33rd. In an automatic cartridge loading machine, the combination with a shell holding wheel having rotating and self locking mechanism, a loading shelf, having shell openings, a charging block upon said shelf; adapted to receive wads and loads of powder and shot from supply tubes, and to carry them alternately to the shell openings of the shelf, and wad plungers arranged above said openings, of a vertically reciprocating cross head actuated by the primary driving mechanisms adapted to actuate said rotating mechanism and trip the locking mechanism of said wheel to impart a step by step movement to said wheel, to reciprocate said charging block and actuate said plungers, substantially as described. 34th. In an automatic cartridge loader, the combination with the loading mechanism of a vertically movable support for holding the shell while being charged, a plunger for driving the wads upon the charge, and an adjustable spring engaging said support and resisting the action of said plunger, whereby the roads are secured upon the charge with uniform pressure, substantially as described. 35th. In a cartridge loader, the combination, with its loading mechanism having a vertical plunger for driving the wads into the shell, of a shell support adapted to hold the shell while being loaded, a spring lifting said support but yielding to the thrust of the plunger, whereby uniform pressure is exerted by the wads upon the charges in the shells, locking mechanism engaging said support when driven downward by the plunger, and means for tripping said locking mechanism, substantially as described. 36th. In an automatic cartridge loader, the combination with its loading mechanism, of a shell support, an adjustable spring engaging said support and carrying it toward the loading mechanism, and a wad plunger reciprocating in line with the movement of said support and adapted to drive a wad into the shell held by it, and to force the shell and its support away from tho loading mechanism, substantially as and for the purposes set forth. 37th. In a cartridge loader, the combination with its loading mechanism, of a vertically movable shell support, a spring adapted to lift said support, means for adjusting the tension of said spring, a piston arranged upon said support and an air cylinder inclosing said piston, whereby the air inclosed between the piston and the head of the cylinder serves as an elastic cushion, acting in opposition to said spring. 38th. Means for delivering wads successively to the magazine or feeding tube, comprising in combination a hopper to receive a promiscuous mass of wads, a carrier of substantially the thickness of a single wad, sliding upon the bottom of the hopper and over the top of said tube, and having openings therethrough, each of suitable size to allow a wad to lie therein, and successively registering with the tube opening, and means for clearing superfluous wads from the surface of the carrier, as it passes over the tube opening, substantially as described.

No. 41,989. Vehicle Propelled by Treadle Action.

(*Pédale pour la propulsion des voitures*)

James Carpenter and Alfred Brown, of Montreal, Quebec, Canada

16th February, 1893; 6 years.

Claim.—1st. In vehicles propelled by treadle action, the combination with a supporting and travelling body, of a helix or screw in contact with the road bed, an intermediate frame and a shaft carried thereby on which such helix is mounted, treadle operated mechan-

ism for rotating said shaft, and means for steering such vehicle. 2nd. In vehicles propelled by treadle action, the combination with a supporting and travelling body, of a helix or screw in contact with the road bed, an intermediate frame pivotally connected with said body, and a shaft, carried by such frame on which said helix is mounted, treadle operated mechanism for rotating said shaft and means for steering such vehicle. 3rd. In vehicles propelled by treadle action, the combination with a supporting and travelling body composed of sleigh runners and a connecting axle, of a helix or screw in contact with the road bed, an intermediate frame pivotally connected with said body, and a shaft on which such helix is mounted carried by such frame, treadle operated mechanism for rotating said shaft, and means for steering such vehicle. 4th. In vehicles propelled by treadle action, the combination with a supporting and travelling body composed of sleigh runners, and a connecting axle upon which axle said runners are pivotally mounted, of a helix or screw in contact with the road bed, an intermediate frame pivotally connected with said body, and a shaft on which said helix is mounted carried by such frame, treadle operated mechanism for rotating said shaft and means for steering such vehicle. 5th. In vehicles propelled by treadle action, the combination with a supporting and travelling body, of a helix or screw in contact with the road bed, an intermediate frame, and a shaft carried thereby on which such helix is mounted, a treadle shaft mounted in said frame, mechanism operated thereby to rotate said helix shaft, legs or pushers pivoted to said frame at one end and adapted to bear upon the road bed with the other, eccentrics mounted on said treadle shafts and connections between such eccentrics and said pushers, and means for steering such vehicle. 6th. In vehicles propelled by treadle action, the combination with a supporting and travelling body, of a helix or screw in contact with the road bed, an intermediate frame pivotally connected with said body, and a shaft carried thereby on which such helix is mounted, treadle operated mechanism for rotating said shaft, and a steering bar mounted in said frame, lever bars pivoted to such frame and adapted to bear upon said supporting body at points eccentric to its pivotal connection with said frame, and connections between said steering bar and lever bar.

No. 41,990. Inhaler. (*Inhalateur.*)

John W. Parker and Peter Josten, assignees of Cyrus D. McGrath, all of Anthony, Ohio, U.S.A., 16th February, 1893; 6 years.

Claim.—The inhaler described, composed of the lamp, cap, or hood over the same, cone passing transversely through said cap or hood, and terminating at one extremity in a small mouth piece, and at the other in an open recess to receive a vessel, with said vessel having pipe extending from the interior thereof through the cone, and terminating at the outer end thereof, substantially as shown, for the purposes specified.

No. 41,991. Electric Elevator. (*Elévateur électrique.*)

Albert Neuburger, Kansas, Missouri, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. In an electric elevator system, the combination, with a motor circuit, of a car moving vertically in a hoistway, a rheostat, and a reversing switch mechanism carried by said car, and arranged and operating to interpose a resistant in the motor circuit, substantially as described. 2nd. In an electric elevator system, the combination, with a main line and a motor circuit, of a reversing switch mechanism arranged to energize the motor circuit by closing the main line, and delivering a current into the motor armature circuit, and operating to interpose varying resistants in said motor armature circuit, substantially as described. 3rd. In an electric elevator system, the combination, with a motor circuit, of a reversing switch mechanism arranged and operating to interpose varying resistants in said motor circuit, and controlling the speed and direction of the motor armature, substantially as described. 4th. In an electric elevator system, the combination, with a motor circuit, a motor, electrical conductors connected with the commutator brushes of said motor armature, a rheostat, and a reversing switch mechanism arranged to contact with the electrical conductors, and increase and diminish the resistance of the rheostat in the motor circuit, substantially as described. 5th. In an electric elevator system, the combination, with the main line having bare metal conductors, the travelling brush contact wheels or shoes, normally in contact with said conductors, a motor circuit, a rheostat, and switch mechanism operating to close the main line, and to send the current through the rheostat and the motor circuit, substantially as described. 6th. In an electric elevator system, the combination, with a main line embracing the bare metal conductors in a hoistway, a car moving vertically in said hoistway, a motor having conductors connected to the commutator brushes of its armature, a rheostat, and a switch mechanism connected by travelling brush wheels with the conductors, and operating to successively interpose varying resistants of the rheostat in the motor armature circuit, and to deliver the current through the armature conductors of the motor circuit, and the rheostat, substantially as described. 7th In an electric elevator system, the combination, with a main line embracing the conductors or contact strips and the travelling brush wheels or shoes, a motor circuit with the conductors connected to the commutator brushes of its armature, a switch mechanism for delivering the current into the armature wires of the motor circuit, and an independent mechanical cam switch or cut out operating to cut the switch mechanism out of the main line, substantially as described. 8th. In an electric elevator system, the combination, with a main line, the motor circuit having bare metal conductors strung in the hoistway and connected to the commutator brushes of the motor armature, a switch mechanism adapted to deliver the current from the main line to the motor circuit, and an independent mechanical cam switch or cut off for throwing the switch mechanism off the motor circuit, substantially as described. 9th. In an electric elevator, the combination, with a main line and a motor circuit, of a rheostat, a series of positive contacts connected by a divided circuit with the rheostat, and a switch mechanism including a series of movable contacts adapted to successively send the current through varying resistants of the rheostat, substantially as described. 10th. In an electric elevator, the combination, with a main line and a motor circuit, of a rheostat, a divided circuit connected with varying resistants in the rheostat, and a switch mechanism operating to successively close the branches of the divided circuit, and to admit the current through the varying resistants of the rheostat, substantially as described. 11th. In an electric elevator, the combination, with a main line, embracing the bare metal conductors, the motor circuit having conductors connected to the commutator brushes of the motor armature, the continuous and divided contact plates to which the positive conductors of the main line and motor circuit are connected, a divided circuit embracing the rheostat, and a switch mechanism including a movable contact arm for the contact plates, and travelling contacts arranged to successively close the branches of the divided circuit, substantially as described. 12th. In an electric elevator, the combination, with a main line and a motor circuit, of the divided circuit having a rheostat, with its varying resisiants included in separate branches of said divided circuit, and a switch mechanism operating to close the main line and motor circuit, and to successively close the branches of the divided circuit, while the main line and the motor circuit are closed, thereby shunting the current successively through the branches of the divided circuit and the varying resistants of the rheostat, substantially as described. 13th. In an electric elevator, the combination, with a main line including the vertically strung bare metal conductors, the travelling brushes, the contact plate and the divided plate having its sections connected with said brushes, the divided circuit embracing a rheostat with its varying resistants included in separate branches of the divided circuit, and a switch mechanism having a moving arm for the contact plates and a series of movable contacts arranged to successively close the branches of the divided circuit, substantially as described. 14th. In an electric elevator, the combination, with a main line and a motor circuit, of the divided circuit having a positive and negative contact in each branch thereof, and including a rheostat with its varying resistants embraced in separate branches of said divided circuit, and a switch mechanism provided with a movable arm for closing the main line and motor circuit, and a series of movable contacts which make contact with the positive and negative contacts of the branches of the divided circuit, and thereby successively close the branches of said divided circuit, substantially as described. 15th. In an electric elevator, the combination, with a main line and a motor circuit, of the divided circuit having each of its branches provided with two contacts, and one of the resistants of a rheostat included therein, and a switch mechanism provided with an arm which closes the main line and motor circuit, and with a vertically movable carrier which sustains a series of travelling shoes adapted to successively close the branches of the divided circuit through the contacts thereof, substantially as described. 16th. In an electric elevator, the combination, with a main line and a motor circuit, of the independent divided circuits each having its branches embracing the varying resistants of the rheostat, and a switch mechanism embracing two sets of movable contacts, one set for each divided circuit, said duplicate sets of contacts being connected to a common operating device, and one set of each contacts remaining inactive while the other set of contacts is moved by the operating device to close the branches of the divided circuit, and *vice versa*, substantially as described. 17th. In an electric elevator, the combination, with a main line and a motor circuit, of the two independent divided circuits each embracing a rheostat, a switch arm adapted to close the main line and motor circuit and having a cam slotted plate, the movable carriers connected to said cam slotted plate, and the travelling contacts movable with said carriers, and operating independently of each other to close the circuits, substantially as described. 18th. In an electric elevator, the combination, with a main line and a motor circuit, of the independent branch circuits each having a rheostat in which the varying resistants thereof are embraced in separate branches of said divided circuit, the single and divided contact plates included in the main line and the motor circuit, a switch for said contact plates, a cam slotted plate movable with said switch, the independent carriers for the divided circuits and connected to the cam slotted plate, and the travelling shoes movable with said carriers, the set of shoes and one carrier being operated by the cam slotted plate to successively close the branches of one divided circuit while the other carrier and set of shoes remain at rest, substantially as described. 19th. The combination, with a main line and a motor circuit, of the divided circuits embracing the rheostats, the switch, the cam slotted plate, the carriers actuated independently by said plate, the series of travelling shoes carried by said carriers, and each having the contact surfaces held by springs into

engagement with the contacts of the divided circuit, substantially as described. 20th. In an electric elevator, the combination, with a main line having bare metal conductors rigidly suspended in the hoistway, the rocking posts each carrying a brush wheel or shoe which contacts with said conductors, a movable cut out cam switch connected to said rocking posts to adjust one or both of the posts, and throw the brush out of contact with the aforesaid bare metal conductors, a motor circuit, the shunt circuit embracing a rheostat, and a switch mechanism, substantially as described. 21st. In an electric elevator, the combination, with a main line, of the motor circuit having the hatchway conductors E, F, and the wires connected to the commutator brushes of its motor armature, the rocking posts each carrying a movable contact which presses against one of the hatchway conductors of said motor circuit, the divided contact plates to which the hatchway conductors of the motor circuit are connected, the manuel cam cut out switch for throwing the movable contacts out of engagement with said conductor, the divided circuit, and a switch, substantially as described.

No. 41,992. Feed Mechanism of Arc Electric Lamps.

(*Mécanisme d'alimentation pour lampes électriques à arc.*)

James Brockie, Camberwell, Surrey, England, 16th February, 1893 ; 6 years.

Claim.—The herein described method of automatically controlling the feed mechanism of an arc electric lamp by the joint operation of two solenoids, having coils respectively in the lamp and in a shunt circuit, one of them having its core made in two parts which are separate when the lamp is out of circuit, but which magnetically adhere to form one core when the lamp is in circuit.

No. 41,993. Pianos. (*Pianos.*)

John Warner Reed, Chicago, Illinois, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. In a frame or back for pianos, the combination of a piano string plate, an outer marginal wooden frame secured thereto, so as to enclose the same and project rearwardly, and a sounding board secured to the back of the outer marginal frame, substantially as set forth. 2nd. In a frame or back for pianos, the combination of the piano string plate, having marginal cheeks or flanges, the outer marginal wooden frame secured thereto, so as to enclose the same and project rearwardly, and the sounding board secured to the back of the outer marginal frame, substantially as set forth. 3rd. In a frame or back for pianos, the combination of the piano string plate, having marginal cheeks or flanges, and horizontal rearwardly projecting flange, near its top, the outer marginal wooden frame secured to the marginal flanges of the plate, so as to enclose the same and project rearwardly, the sounding board secured to the outer marginal frame, and the pin block resting upon the horizontal flange of the string plate, substantially as set forth.

No. 41,994. Machine for Casting Boots and Shoes.

(*Machine à enformer les chaussures.*)

George Warren Copeland, Malden, assignee of Joseph Ephraim Cress and Edward Frank Grandy, Somerville, Massachusetts, U.S.A., 16th February, 1893 ; 6 years.

Claim.—1st. In combination, with a lasting machine head, and the support to which said head is pivoted for longitudinal angular adjustment, the screw C^3, provided with fixed collars, and the hubs C^4 and C^5, mounted upon screw threads, all operating substantially as shown and described. 2nd. In combination, with a lasting machine head, the slides D and B^2, the connecting rod B^3, the treadle B^4, the roll B^6, and the treadle B^7, all substantially as shown and described. 3rd. In combination, with a lasting machine head, the toe rest D^6, the adjusting screw therefor D^8, the support D^9, provided with the rib D^{13}, the elevating and lowering block D^{10}, the lever D^{11}, the connection D^{12}, and the lever A^3, all constructed substantially as shown and described. 4th. In combination, with a lasting machine, a toe support provided with a height adjusting screw, and a swinging or sliding support for said screw constructed with a rib which engages with said screw head and assures the location of said screw, substantially as shown and described. 5th. In a lasting machine of the class described whose lasting straps on their operating connections are permanently positioned over the inner sole of the uppers to be lasted, swinging arms located on each side of the machine with the lasting straps secured to their upper ends, and toggle connections secured to their lower ends for drawing and locking said lasting straps around the lasts operated upon, and suitable mechanism for operating said toggles, all substantially as shown and described for the purpose set forth. 6th. In a lasting machine of the class described, whose lasting straps, or their operating connections, are permanently positioned over the upper to be lasted, swinging arms located on each side of the machine, with lasting straps secured to their upper ends, and swinging arms pivoted thereto and provided with suitable connecting mechanism to fixed parts of the machine to ensure their swinging reversely to the arms to which they are pivoted when said arms are operated in either direction, all constructed substantially as described, and for the purpose set forth. 7th. In a lasting machine of the class described, whose lasting straps, or their operating connections, are permanently positioned over the upper to be lasted, swinging arms located on each side of the machine with lasting straps secured to their upper ends, and swinging arms pivoted thereto and provided with suitable connecting mechanism to fixed parts of the machine to ensure their swinging reversely to the arms to which they are pivoted when said arms are operated in either direction, and provided with the joints E^9, and b^{10}, all operating substantially as shown and described. 8th. In a lasting machine in combination with the jack post provided with the spring G^2, and the stop pin G^1, the sliding plates F^4, and F^7, the counter weighted pawls G^9, the ratchet wheel G^7, the lever A^8, and suitable connecting mechanism, all operating substantially as shown and described. 9th. In a lasting machine the swinging frame K, carrying the heel lasting mechanism, and mounted upon the lever K^4, in combination with the spring K^7, the foot treadle or lever K^{14}, and suitable connecting mechanism whereby the action of spring and treadle causes the heel lasting mechanism to reciprocate vertically at the will of the operator, substantially as shown and described. 10th. In a lasting machine whose heel lasting mechanism is swung from the toe lasting mechanism for the purpose of introducing the last in combination with the swinging frame K the balance and drawing spring K^{10}, substantially as described. 11th. In a lasting machine of the class described, the combination of the treadle E^7, provided with the extension E^8 and the lever A^5, mounted upon the releasing shaft A^1, and provided with the pin A^{11}, all operating, substantially as shown and described. 12th. In a lasting machine of the class described, the combination of the holding straps a, the connection a^2, the springs a^3, and suitable operating mechanism, all substantially as described and for the purposes set forth. 13th. In a lasting machine of the class described, the double ended swinging latch K^{11}, hung upon the swinging frame K, the bevelled catches E^{10}, fixed at the ends of the horizontal ties E, and suitable connecting and operating mechanism, substantially as described, all operating as set forth. 14th. In a lasting machine of the class described, jacking mechanism consisting of the crank e^3, properly mounted upon the swinging frame K, and connected to the swinging arm F, by the chain e^5, the hand wheel e^8, provided with automatic holding mechanism and the tortional spring e^7, and suitable connecting and operating mechanism, all substantially as described and for the purpose set forth. 15th. In a lasting machine, in combination with mechanism for operating and holding heel and toe bands thereof, the spring connections h^3, the lever h^2, the bell crank lever k, and suitable connecting and operating mechanism, all substantially as shown and described. 16th. In a lasting machine, in combination with the heel and toe bands thereof, means for giving said bands automatic adjustment to counters and toes of varying curves and angles, consisting of the ear of g^{13}, and suitable connecting mechanism, substantially as described. 17th. In a lasting machine, in combination with the lasting plates thereof, the cross bar H^4, and suitable operating mechanism, substantially as shown and described.

No. 41,995. Machine for Driving Tacks.

(*Machine à chasser la braquette.*)

George Warren Copeland, Malden, assignee of Joseph Ephrain Cripp, Somerville, both of Massachusetts, U.S.A., 16th February, 1893 ; 6 years.

Claim.—1st. In a tack driving machine of the class described, tack arranging mechanism consisting of a hopper with a slotted bottom and a tack chute, in combination with a narrow elevator slide having an inclined slide deeper than the length of a tack used in its upper end, and suitable operating mechanism, by which said slide is reciprocated from the point of delivery into the chute to a point wholly below the bottom of the hopper, substantially as described and for the purposes set forth. 2nd. In a tack driving machine of the class described, the combination of the elevator slide B, the connection B^2, and the counter balance lever B^4, and operating mechanism, substantially as described. 3rd. In a tack driving machine of the class described, tack driving and tack elevating mechanism, substantially as set forth, and means for operating the elevating mechanism, consisting of suitable clock mechanism, in combination with devices and suitable connecting mechanism, by which said clock mechanism may be set in motion, all operating substantially as shown and described. 4th. In a tack driving machine of the class described, an inclined tack chute composed of two parts lineally connected by male and female couplings fixed to the abutting ends thereof, and provided with sliding gates which are opened and closed by connecting and disconnecting the parts, substantially as shown and for the purpose set forth. 5th. In a tack driving machine, an inclined chute composed of two parts, provided at their connecting ends with spring operated sliding gates reversely arranged and automatically operated to open the gates to form a continuous roadway when the parts are connected, and to automatically close the gates when they are separated, substantially as shown and described. 6th. In a tack driving machine of the class described, an inclined tack chute composed of two parts, provided with sliding couplings, the female part of which is provided with a bell shaped entrance to facilitate the entrance of the male part therein, substantially as shown and described. 7th. In a tack driving machine of the class described, the combination, with the body of a tack driving machine, of a chute fixed thereto, and having one part of a coupling fixed to the outer free end of said chute, which serves to hold the tack driver in a rest formed of the opposite part

of said coupling when not in use, and the opposite part of said coupling, in combination with the fixed part of said chute, all operating as shown and described. 8th. In a hand tacking and loading machine, the combination, of a suitable tack driver, a tack loader and loading mechanism, a tack chute composed of two parts, one carried by the driver and the other fixed to the loader, and means for connecting and disconnecting the same, whereby the fixed part may be loaded when the tack driving mechanism is detached for use, and that part of the chute attached to the driver be recharged by the act of connecting the parts, and the fixed part of the chute forms a rest or support for the tack driver when not in use, substantially as shown and described. 9th. In combination, with a tack driving machine, a throat composed of the parts K and K^1, and the spring operated inclining gates K^2 and K^3, which bear upon the shank of the tacks, above and below the place engaged by the feed pawl, and cause the tacks to be fed squarely into the throat, when said gates close and complete the circle of the throat, substantially as shown and described. 10th. In combination, with a tack driving machine, the spring operated slide L, mounted on the outer part of the throat K^1, and carrying the spring operated feed pawl L, all operating as shown and described. 11th. In combination, with a tack driving machine, a removable incline as M^2, for operating the feeding levers M and N, and the tack feeding devices, substantially as shown and described. 12th. In combination, with a tack driving machine, the incline M^2, and the lever M, and the spring operated slide L, provided with the feed pawl L^2, all operating substantially as described. 13th. In combination, with a tack driving machine, the slotted lever N, provided with a double acting spring dog N^1, for acting in combination with the pin N^2, to retain said lever at the ends of the slot, substantially as shown and described. 14th. In a tack driving machine, the driving bar provided with the groove N^7, and the lever N, constructed with the widened end by which the reciprocation of said lever is accomplished at the ends of the stroke of the directing bar, substantially as described and for the purpose set forth. 15th. In a tack driving machine, the combination of the sliding and swinging lever N, and operating mechanism with the arm L^5, of the feed pawl L^2, whereby the operating point of said pawl is swung clear of the shank of the first tack in the feed way, substantially as shown and described. 16th. In a hand tacking and loading machine, the combination of a suitable tack driver, a tack loader and loading mechanism, with a tack chute composed of two parts, one part fixed to the tack driving device, and the other part fixed to the loading mechanism, and means for connecting and disconnecting the same, for the purposes set forth.

No. 41,996. Amalgamator for Ores.

(*Amalgamateur de minerais, etc.*)

William Walker Fyfe, Stamford Hill, London, England, 16th February, 1893; 6 years.

Claim.—1st. In amalgamator apparatus the pulp supply chamber or casing $a\ a^1$, having the ports a^2, leading down into, under and through the mercury stratum to emerge from the well b^1, into the central space b, upon the surface of the mercury, and thence discharging the tailings, substantially as herein set forth. 2nd. In amalgamator apparatus, the combination of the passage $a\ a^1$, with ports a^2, plate c, mercury well and central space $b^1\ b$, the midfeathers and under plate d, e, i, dividing plate h, and ports h^1, distributing the tailings to the outflow way k, as and for the purpose set forth. 3rd. The improved amalgamator apparatus combined, constructed, and operating as and for the purpose herein specified.

No. 41,997. Velocipede. (*Vélocipède.*)

Edward James O'Connor, Hartford, Connecticut, U.S.A., 16th February, 1893; 6 years.

Claim.—1st. In a velocipede, in combination, the wheel axle and the fork extended adjacent the axle, and a lever having angularly extended arms or members and mounted for bearing at or near the junction thereof on the wheel axle, one of said members having a pivoted connection with the fork leg at a suitable distance from its end and the other extended in proximity to and beyond the extremity of the fork leg, and having thereon a stop, and a spring between the stop and the fork leg extremity, for the purpose set forth. 2nd. In a velocipede, in combination, the wheel axle and the front fork legs terminating at the rear of the axle, and each provided with the eye h, and a pair of angular levers, each comprising the members, f and g, mounted for bearing at or near the junction on the axle, and each member f, extended upwardly and rearwardly and pivotally connected to a fork leg above its end, and each member g, being of arc form, concentric with said pivotal connection at the fork leg, and extended through the fork leg, eye and having the stop i, and the spring g, substantially as described and shown. 3rd. In a velocipede, in combination, a frame intermediately pivotally jointed, and a lug extended from the pivot, a spring intermediately thereof supported on said lug, and links uniting the ends of said spring with portions of the frame which are forward and to the rear of the joint, for the purpose set forth. 4th. In a velocipede, in combination, a frame intermediately and pivotally jointed, and a lug hung upon the joint pivot, and at its outer portion of yoke form, a plate or leaf spring intermediately thereof embraced by and supported on said lug yoke, and links or clevises uniting the ends of said spring with portions of the frame which are forward and to the rear of the joint, substantially as described, for the purpose set forth. 5th. In a velocipede, the combination, with an intermediate part of the frame having opposite cheek pieces t^1, t^1, with longitudinal ways therein, of slides supported on said cheek pieces and movable in said ways and having confining bolts therefor, said slides having the opposing openings through them with the peripheral ball bearing surfaces x^1, and the crank shaft passed through said slides and having the screw collars y, y, with the peripheral bearing surfaces y^1, and the balls, substantially as and for the purpose described. 6th. In a velocipede, the combination, with the crank shaft having a bevel gear thereon, and the hub of the rear wheel having a bevel gear fixed thereon within the end of the rear axle, of the connecting shaft K, suitably supported and having at its forward end a gear wheel which meshes with the crank shaft gear and by its rearward portion extended next to and rearwardly beyond the end of the rear axle, and having a gear wheel thereon which meshes with the rear wheel gear, for the purpose set forth. 7th. In a velocipede, in combination, the rear wheel axle having the enlargement with a peripheral bearing surface 13, the wheel hub surrounding the axle and having the gear J, fixed to move as one therewith, the hub of said gear being internally formed to constitute a ball bearing surface opposite the surface 13, the balls, the driving shaft, and a shaft geared thereto, and by its near portion supported by the rear wheel axle, and having a gear geared to said hub gear, as set forth. 8th. In a velocipede, in combination, the rear axle with the enlargement and peripheral bearing surface and the hub with the gear J, and intermediate balls 16, the tubular bracket P, supported at the extremity of the axle, which is extended outwardly beyond said gear and having its rear orifice formed to constitute a ball bearing surface, the shaft K, having a gear wheel thereon with a portion of its hub opposite the orifice of the bracket formed to constitute a ball bearing surface, and the balls 18, substantially as described. 9th. In a velocipede, the combination, with an intermediate part of the machine frame, having a transverse wall or part, as u^1, apertured and provided with a peripheral ball bearing surface as x, of the crank shaft mounted on said intermediate part of the frame and provided with a gear, a gear on the rear wheel, a shaft having a gear on the rear thereof engaging the rear wheel gear, said shaft projected forwardly through the aperture in the part u^1, and having a gear thereon which engages the crank shaft gear, and the balls 22, substantially as described. 10th. In a velocipede, the combination, with the crank shaft having a bevel gear thereon, the rear axle, and the hub of the rear wheel having a bevel gear wheel fixed thereon within the end of the axle, of a bracket screwed and supported upon the end of the rear axle, the connecting shaft K, by its rear portion supported on said bracket and extended rearwardly past the axle, and provided with the bevel gear, and said shaft at its forward end suitably supported and having the bevel gear wheel to mesh with the crank shaft gear, substantially as described. 11th. The shaft K, having on its extremity right and left hand screw threads, the gear screw engaging one set of said threads, and having on its hub screw threads corresponding to the other set of shaft threads, and the lock nut to engage both the latter shaft threads and the hub threads, substantially as described. 12th. In a velocipede, in combination with the part C, having opposing and separated cheek pieces and the crank axle passed through and having a support thereon, said part C, having at its rear end the transverse portion u^1, apertured as described, the rear wheel axle having the bracket P, on its end, and the wheel hub surrounding the axle and having the gear J, inwardly from the end of the axle, the tubular fork z, supported on and extending between said bracket and the part u^1, and the connecting shaft passed through said tubular fork and said bracket P, and the part u^1, and having the gears L and M, arranged, substantially as described, for the purposes set forth.

No. 41,998. Directory for Telephones.

(*Directoires pour téléphones.*)

Ludger Seguin, Montreal, Quebec, Canada, 16th February, 1893; 6 years.

Claim.—A telephone directory, composed of the frame A, drums D and E, mounted on the shafts d and e, pinions d^2 and e^2, gears F and G, mounted on to the shafts f and g, pawls f^2 and g^2, ratchets f^3 and g^3, piece H, bearings d^1 and e^1, springs Q, index bar L, piece M, directory I, having a series of lines N, corresponding in any series of names to the first letter, and arranged so as to come under the corresponding one on the index bar L, also a series of lines O, corresponding to the second letter, in each series of names, and arranged so as to come under the corresponding one on the index bar L, substantially as described, and for the purposes set forth.

No. 41,999. Stove for Burning Straw and other Vegetable Growths. (*Foyer consumant la paille et autres produits végétaux.*)

Leonora Field, New York City, U.S.A., administratrix of the estate of George Baker Field, of New York, aforesaid, 16th February, 1893; 6 years.

Claim.—1st. A portable fuel cartridge, consisting of a holder having straw, cornstalks or such like fuel therein, with a draft flue formed in, extending through, and surrounded on all sides by the fuel, in combination, with a holder or stove casing adapted to receive and hold the cartridge in an upright position, and constructed to

supply air to support combustion to the lower end of said draft flue. 2nd. A portable fuel cartridge, consisting of a metal cylinder open at both ends, and having straw, cornstalks, or such like fuel therein, with a draft flue formed centrally in and extending through the fuel, in combination, with a holder or stove casing adapted to receive and hold the cartridge in an upright position, and constructed to supply air to support combustion to the lower end of said draft flue. 3rd. A portable fuel cartridge, consisting of a metal cylinder circumferentially corrugated, open at both ends, and having straw, cornstalks or such like fuel therein, with a draft flue formed centrally in and extending through the fuel, in combination with a holder or stove casing adapted to receive and hold the cartridge in an upright position, and constructed to supply air to support combustion to the lower end of said draft flue. 4th. The combination of a stove casing, its base, a draft aperture in or at the base, and a fuel cartridge or charge consisting of a mass of straw, cornstalks or such like fuel suitably held together and having formed therein and extending therethrough a draft flue, the stove casing being adapted to receive the charge of fuel in an upright position with the draft flue in the fuel over said draft aperture. 5th. A fuel cartridge, consisting of a metal holder or cylinder, having straw, cornstalks or such like fuel packed therein, with a draft flue formed in, extending through and surrounded on all sides by the fuel. 6th. A fuel cartridge, consisting of a holder or cylinder, circumferentially corrugated or ribbed on its interior, and having straw, cornstalks or such like fuel packed therein, with a draft flue formed in, extending through and surrounded on all sides by the fuel. 7th. The combination of the base, a stove body, the ovens dividing the stove body into two combustion chambers, an opening in the base in each combustion chamber, draught devices for regulating the supply of air passing through such openings and door ways in the combustion chamber for the insertion of the fuel cartridges. 8th. The combination of a stove top, the removable ring *h*, the stove holes proper formed in the ring and the lids.

No. 42,000. Furnace for Burning Garbage.

(*Foyer consumant les tripailles.*)

George H. Warner, Hartford, Connecticut, U. S. A., 17th February, 1893; 6 years.

Claim.—1st. The combination, of the oven 2, with the fire places 4 and 5, at opposite ends thereof, and with the grate 3, or other floor of the oven, between them and above them, and with openings extending from above those fire places into the chamber 15, below that grate, all substantially as described. 2nd. The combination, of the oven 2, with the fire places 4 and 5, at opposite ends thereof, and with the grate 3, or other floor of the oven between them and above them, and with openings extending from above those fire places into the chamber 15, below that grate, and with the downward flue 14, and the horizontal flue 16, giving an outlet to the flames from the fire places and the oven and the chamber, around and under the fire place 4, and thence under the floor of the chamber, and thence under the fire place 5, into the chimney 17, all substantially as described. 3rd. The combination, of the oven 2, with the fire places 4 and 5, at opposite ends thereof, and with the grate 3, or other floor of the oven, between them and above them, and with openings extending from above those fire places into the chamber 15, below that grate, and with the downward flue 14, and the horizontal flue 16, giving an outlet to the flames from the fire places, and the oven and the chamber, around and under the fire place 4, and thence under the floor of the chamber, and thence under the fire place 5, into the chamber 17, and with the flue 19, adapted to give another outlet to the flames from the fire places and the oven and the chamber, and with one or more valves in each of those outlets, adapted to open and close them respectively, all substantially as described.

No. 42,001. Means for Preparing Thread Fibre.

(*Moyen de préparer la fibre du fil.*)

Charles L. Travis, Minneapolis, Minnesota, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. The combination, with the grooved guide and gage plate, of the cutters arranged upon opposite sides thereof, and means for moving the thread or fibre along said grooved plate and between said cutters. 2nd. The combination, with means for moving the thread, of the gage and guide plate, and the cutters arranged to cut close to said guide plate on opposite sides thereof. 3rd. The combination, with means for moving the thread, of the circular cutters, means for rotating said cutters, and the grooved disc projecting between said cutters. 4th. The combination, with means for moving the thread, of the circular cutters, and the grooved plate projecting between said cutters. 5th. The combination, with the gage and guide plate, of the cutters and a spring tension device for holding one of said cutters, substantially as described. 6th. The combination, with the removable gage and guide plate 13, of the cutter 4, the removable cutter 6, said cutters being arranged on opposite sides of said guide plate, and a tension device for holding said cutter 6, in contact with said guide plate, substantially as described. 7th. The combination, with the guide and gage plate, of the cutters arranged on opposite sides thereof, means for moving the thread or fibre over said guide and between said cutters, and means for giving a rolling or turning motion to said thread or fibre. 8th. The combination, with the guide and gage plate, of the cutters arranged on opposite sides thereof, means for moving the thread or fibre over said guide and between said cutters, and the brush for engaging said thread after it leaves said cutters. 9th. The combination, with the guide and gage plate, of the cutters arranged on opposite sides thereof, means for moving the thread or fibre over said guide and between said cutters, a rotating brush, and means for bringing the thread or fibre after it leaves the cutters in an inclined direction across the edge of said brush.

No. 42,002. Cigar Case. (*Boîte à cigares.*)

Charles L. Pratt, Minneapolis, Minnesota, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. A cigar case provided with the pans arranged in the bottom thereof, the wire floor, and a space being left between the latter and the walls of the casing, substantially as described. 2nd. A cigar case provided with the storage and display compartments, wire floors for each of said compartments, secondary wire walls for the storage compartment, and water pans provided beneath the floor of the storage compartment, substantially as described. 3rd. A cigar case provided with the display and storage compartments, the wire floors for each of said compartments, wire walls for said storage compartments, water drawers arranged beneath each of said wire floors, regulatable ventilators provided in the walls of each of said compartments, substantially as and for the purpose specified. 4th. A combination cigar case having a metal base or floor panel, substantially as and for the purpose specified. 5th. The combination in a cigar case, of compartments for both the display and storage of cigars, said storage compartments being two or more in number, and means for moistening the cigars therein, substantially as described. 6th. The combination in a cigar case, of display and storage compartments, said storage compartments being three or more in number and entirely separated from one another and from the display compartment, and means for moistening and for independently regulating the moistening of the cigars in the several compartments, substantially as described. 7th. The combination in a cigar case, of three or more storage compartments, a superimposed single display compartment in the same fixture, all of said compartments being separated by air tight walls, water drawers for said storage and display compartments, and perforations in the walls of the case for admitting and exhausting air from the several compartments, substantially as described. 8th. The combination with three or more distinct storage compartments, of a display compartment, said compartments being separated by imperforate walls, wire floors for the several compartments, secondary wire walls for the said storage compartments, water drawers for the several compartments, and ventilating openings and slides for each compartment whereby the process of moistening and ventilating the cigars in the several compartments is made independent. 9th. The combination in a cigar case, of three or more storage compartments, with a display compartment arranged above the same, said compartments being separated by imperforate walls, water drawers arranged in the several compartments, ventilating openings in the walls of the case for each compartment, and slides for said openings, substantially as and for the purpose specified. 10th. The combination with a glass display compartment, of three or more storage compartments, the walls of the case being imperforate, the solid partitions 10, the floors 25 and 11, the wire floors in said storage and display compartments, ventilators arranged in the walls of the case below the line of said floors and for each compartment, the partitions 15 in the lower part of the display compartment, the water pans arranged between said partitions and the water pans provided in the bottoms of the storage compartments, substantially as and for the purpose specified. 11th. The combination with the separate storage compartments having imperforate walls, of the glass display compartment, the intermediate floor 11, the wire floor 18, the wire floors and walls for said storage compartments, the water drawers of the several compartments and being two in number for each drawer, a door for each compartment, and a metal base or panel, substantially as and for the purpose specified.

No. 42,003. Steering Gear. (*Appareil pour gouverner.*)

Herbert Lester Weitzel, Oakland, California, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. In combination with a vessel having a main rudder and stearing gear, an auxiliary rudder pivoted in the run of the vessel in front of the stern post and above the keel, and a tiller or other attachment connecting with it, whereby it may be turned from side to side and controlled, substantially as herein described. 2nd. An opening made in front of the stern post and above the keel of a vessel, a rudder fitted in said opening having pintles upon its front edge, chains connected with the rear edge upon each side, pipes fitted into the counter or run of the vessel curving upward above the water line through which pipes the chains lead, and connections at the upper ends of the chains by which the rudder is held in a central position or moved from side to side, substantially as herein described. 3rd. An opening made in front of the stern post and above the keel of a vessel, said opening having a concave channel made in its vertical front edge, a rudder fitting said opening, having pintles at top and bottom of its front edge, which turns within the concave portion of the opening, the sides of which act as

stops to limit the motion of the rudder upon each side, chains connecting with the rear edge of the rudder, openings made in the counter of the vessel and pipes fixed in said openings leading upwardly above the water line, whereby the chains may pass through said pipes to points where they may be connected with operating mechanism, substantially as herein described. 4th. An opening made in front of the rudder post and above the keel of a vessel, a rudder fitting said opening having pintles upon its front edge, about which it turns, eye bolts connected with the top and bottom of the rear edge of the rudder upon each side, links extending from said eye bolts to a ring on each side of the rudder, curved pipes fitted into the counter of the vessel, leading upwardly to the deck, chains connected with the rings upon the rudder leading through said pipes, shackles connected with the upper ends of the chain, and ring bolts to which these shackles are attached to hold the rudder rigidly in a central position when not in use, substantially as herein described.

No. 42,004. Knife. (*Couteau*)

Harry Eugene Kelley, Niagara Falls, New York, U.S.A., 17th February, 1893; 6 years.

Claim.—A sheet metal knife composed of a blade and a closed hollow handle, the blade being arranged midway between the sides of the handle, and the handle being composed of two concave sections joined together, substantially in the plane of the blade, as set forth. 2nd. A sheet metal knife consisting of a blade and a closed hollow handle, the handle being composed of two concave sections, one formed integrally with the blade and the other detached therefrom, and both secured together with their concave sides facing each other, substantially as set forth. 3rd. A sheet metal knife consisting of a blade and a closed hollow handle, the handle being composed of two concave sections, one formed integrally with the blade and the other detached therefrom, both sections being secured with their concave sides facing each other, and each provided at their inner end with a bulge forming a bolster section, substantially as set forth.

No. 42,005. Locomotive and Marine Boiler.

(*Chaudière de locomotive et marine.*)

Frank Barclay, Beatrice, Nebraska, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. As an improvement in locomotive or marine boilers, a retort composed in part of hollow walls, and in part of fire brick, said retort being set or arranged within the fire box and above the grate, substantially as shown and described. 2nd. In a locomotive or marine boiler, the combination with the fire box, of the retort composed in part of hollow walls connected by tubes with the boiler, and in part of fire brick or equivalent heat retaining material, and provided with a direct draft opening and a door or damper for closing the same at will, substantially as and for the purpose set forth.

No. 42,006. Furnace for Burning Garbage.

(*Foyer consumant les tripailles.*)

George H. Warner, Hartford, Connecticut, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. The combination of the oven 2, with the fireplaces 4 and 5 at opposite ends thereof, and with the grate 3, or other floor of the oven between them, and with the downward flue 14, and the horizontal flue 15, giving an outlet to the flames from the fire places and the oven, around and under the fireplace 4, and thence under the floor of the oven, and thence under the fireplace 5, into the chimney 17, all substantially as described. 2nd. The combination of the oven 2, with the fireplaces 4 and 5 at opposite ends thereof, and with the grate 3, or other floor of the oven between them, and with the downward flue 14, and the horizontal flue 15, giving an outlet to the flames from the fireplaces and the oven around and under the fireplace 4, and thence under the floor of the oven, and thence under the fireplace 5, into the chimney 17, and with the flue 19, adapted to give another outlet to the flames from the fireplaces and the oven, and with one or more valves in each of those outlets, and adapted to open and close them respectively, all substantially as described. 3rd. The combination of the oven 2, with the fireplaces 4 and 5 at opposite ends thereof, and with the grate 3, or other floor of the oven between them, and with the downward flue 14, giving an outlet to the flames from the fireplaces and the oven, around the fireplace 4, and with the flues 15 and 16 provided with valves, and adapted to alternately give an outlet from the downward flue 14, into the chimney 17, all substantially as described.

No. 42,007. Canal Digging Machine.

(*Machine à creuser les canaux.*)

John McMullen, Herman Krusi and Henry Shotwell Wood, all of San Francisco, California, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. The combination in a canal digging machine, of a travelling bridge, the ends of which are provided with wheels or trucks, upon which it is supported, and tracks upon which it travels, a transverse moving carriage thereon provided with wheels or trucks, upon which it is supported, and suitable tracks upon the bridge upon which the carriage moves, an endless chain and bucket digging machine projecting forward of the travelling bridge, the chain digger resting on and being supported by the travelling carriage, its inner end being pivotally connected thereto and its outer end being adjustably supported by the moving carriage to admit of its vertical movement, a conveyor located in the rear of and transverse to the chain digger, on the moving carriage, a hopper or chute for conducting the spoil discharged from the digging machine to the conveyor, suitable propelling mechanism for running the structure forward and suitable power connections to effect the travel of the movable carriage, and suitable power connections for operating the chain digger, the conveyor and the various moving parts, substantially as described. 2nd. In a digging machine, the combination of a travelling bridge, the ends of which are provided with wheels or trucks, upon which it is supported, and tracks upon which it travels, a transverse moving carriage thereon, a digging machine supported on the moving carriage, a conveyor belt and a conveyor frame of lesser width than the belt, the frame having raised edges whereby the edges of the belt are turned up to form a continuous trough, substantially as described. 3rd. The combination, in a machine of the character described, of a conveyor frame provided with raised edges, and a flexible endless conveyor of greater width than the said frame, substantially as described. 4th. The combination in a digging machine, of the chains C, and removable wearing pieces or plates C^1, set across and countersunk in the side bars of the links composing the said chains, substantially as described. 5th. The combination, in a digging machine, of a tumbler wheel, removable angular plates set over bolts across said wheel, between the flanges thereof, and other plates detachably secured to said flanges, across the ends of said angular plates, substantially as described. 6th. In a digging machine, the combination of a travelling bridge, the ends of which are provided with wheels or trucks, upon which it is supported and tracks upon which it travels, a transverse moving carriage thereon, a digging machine supported on the moving carriage, one or more conveyor belts of canvas or other suitable material, and one or more frames provided with any suitable means, whereby the edges of the belt are turned up to form a trough of the upper fold of the belt intermediate of the end carrying pulleys, substantially as described. 7th. In a digging machine, the combination of the digging and transporting machinery on a movable platform, as described, and a travelling bridge upon which the machinery is supported, in which the floor beams and stringers are placed below the top chord of the bridge to reduce the elevation of machinery and earth removed to a minimum, substantially as described.

No. 42,008. Cash Carrier. (*Chien de magasin.*)

Frederick James Haworth Hazard, Toronto, Ontario, Canada, 17th February, 1893; 6 years.

Claim.—1st. A store service apparatus having suitable supports at the stations, levers pivoted to the supports, wires connecting said levers, and a car propelling spring H, connected with one of said levers and so arranged that the movement of the lever for the purpose of starting the car increases the tension of said spring, substantially as described. 2nd. A store service apparatus having suitable supports at the stations, a lever pivoted to the support at each station, two wires connected to said levers at opposite sides of its pivotal point, and a spring connected with said lever and arranged to propel the car of a cash carrier, substantially as described. 3rd. A store service apparatus having suitable supports at the stations, levers pivoted to said supports, wires extending from the levers, a bell crank having a pivotal connection with one of the levers, a roller journaled thereon, and a spring connected with the lever, in combination with a cash car having a horn to engage with the spring, and a lip to engage with the said roller, substantially as and for the purpose specified. 4th. A store service apparatus having suitable supports at the stations, levers pivoted to the supports, wires extending from and connecting the levers, a bell crank having a pivotal connection with one of the levers, a roller journalled thereon, a spring for propelling a car, and a fork for supporting the spring connected to one of the levers, in combination with a car having a horn to engage with the propelling spring, and a lip to engage with said roller, substantially as and for the purpose specified. 5th. In a store service apparatus, the combination of suitable supports at the stations, levers pivoted to the supports, wires extending from and connecting the levers, a fork F, connected with one of the levers, a propelling spring H, connected to the fork, and a car adapted to travel on one of the wires and to be propelled between the stations, substantially as described. 6th. A store service apparatus having suitable supports at the station, levers pivoted to the supports, wires extending from the levers, a cash car having a lip thereon, a rod I, extending from one of the levers, a bell crank J, pivoted thereon, and a roller P, journalled on one end of the bell crank, and designed to engage with said lip, in combination with the spring O, sleeve K, spindle L, pin M, and adjusting nut T, substantially as and for the purpose specified.

No. 42,009. Machine for Dredging and Pumping.

(*Machine à draguer et pomper.*)

Joseph Armytage Wade and John Cherry, both of Hornsea, York, England, 17th February, 1893; 6 years.

Claim.—1st. The herein described apparatus, for dredging or pumping on the suction system, the same comprising a tank A, an

exhaust pump connected to the tank, and a tube D, provided with a valve or valves. 2nd. In apparatus for dredging or pumping on the suction system, the employment of a tube, such as D, having an extremity, such as D^x, furnished with a harrow G, or revolving harrows G^1, substantially as herein described. 3rd. In apparatus for dredging or pumping on the suction system, the combination, with the tank A, of the pipe D, furnished with a ball and socket joint D^1, substantially as and for the purpose herein set forth. 4th. In apparatus for dredging or pumping on the suction system, the combination, with the tank A, of the pipe D, having a ball and socket joint D^1, and a valve E, substantially as and for the purpose herein set forth. 5th. In apparatus for dredging or pumping on the suction system, the combination, with a tank A, of a pipe D, a pump B, a pipe B^1, and a stuffing box B^2, substantially as and for the purpose herein set forth. 6th. In apparatus for dredging or pumping on the suction system, the employment of a harrow G, or harrow G^1, attached to the extremity of a suction pipe, substantially as herein described.

No. 42,010. Apparatus for Recording Moving Cars.

(*Appareil pour enregistrer les chars en mouvement.*)

Cyrus Kehr, Lakeside, Illinois, U. S. A., 17th February, 1893; 6 years.

Claim.—1st. In a system for recording moving cars, number plates applied to the cars at a chosen distance and direction from one of the rails of the railroad track, and a yielding roller suitably located to make contact with said number plates, and take impressions from said number plates, substantially as shown and described. 2nd. In a system for recording moving cars, number plates applied to the cars at a chosen distance from the track, a yielding roller arranged to make contact with said number plates, and a roller for receiving a ribbon to pass over said yielding roller, and receive impressions from the number plates, substantially as shown and described. 3rd. In a system for recording moving cars, number plates applied to the cars at a chosen distance from the track, a yielding roller arranged to make contact with said number plates, a band bearing coloring matter extending over the surface of said yielding roller, and a roller for receiving a band to extend over said yielding roller, and receive coloured impressions as the number plates pass over said roller and said bands, substantially as shown and described. 4th. In a system for recording moving cars, number plates applied to the cars at a chosen distance from the track, a yielding roller arranged to make contact with the number plates, and provided with means for preventing its recoil or reverse movement, substantially as shown and described. 5th. In a system for recording moving cars, number plates applied to one of the cars at a chosen distance from the track, a yielding roller mounted in a way at right angles to the track upon which the cars move, whereby said roller may be shifted at right angles to said track into or out of the path of said number plates, substantially as shown and described. 6th. In a system for recording moving cars, number plates applied to the car at a chosen distance from the track, a rock shaft suitably mounted and having a laterally directed arm, a roller C, mounted upon said laterally directed arm, and a spring or its equivalent for holding said shaft and arm in such a position as to bring said roller into the path of said number plates, substantially as shown and described. 7th. In a system for recording moving cars, number plates applied to the cars at a chosen distance from the track, a suitably mounted rock shaft D, a spring D^7, or its equivalent applied to said rock shaft to hold it in a chosen position, an arm D^3, extending laterally from said rock shaft, a spindle D^4, extending from said arm in a direction parallel to said rock shaft, a roller C, mounted upon said spindle D^4, and extending into the path of said number plates, substantially as shown and described. 8th. In a system for recording moving cars, number plates applied to said cars at a chosen distance from the track, a suitably mounted rock shaft D, a spring D^7, an arm D^3, extending laterally from said shaft D, a spindle D^4, extending from said arm D^3, in a direction parallel to said rock shaft, a roller C, mounted upon said spindle D^4, and extending into the path of said number plates, a ratchet wheel *c*, joined to said roller C, and a pawl c^1, mounted upon said arm D^3, and arranged to engage said ratchet wheel *c*, substantially as shown and described. 9th. In a system for recording moving cars, number plates applied to the cars at a chosen distance from the track, a rock shaft D, a spring D^7, a roller axially in line with said rock shaft, and a roller C, supported upon an arm extending laterally from said shaft D, and extending into the path of said number plates, said rollers being in the same plane at right angles to said rock shaft, substantially as shown and described.

No. 42,011. Lubricator. (*Graisseur.*)

Charles Howard Besley, Chicago, Illinois, and Frederick Nelson Gardner, Beloit, Wisconsin, both in the U.S.A., 17th February, 1893; 6 years.

Claim.—1st. In a compression lubricator, a grease cup comprising a piston and cap, the piston provided with an annular packing having inner and outer cylindric edges and having its outer cylindric edge bearing against the cap and its inner cylindric edge exposed to contact with the contents of the lubricator whereby said packing will be subject to the pressure applied to the said contents and will be expanded edgewise against the cap. 2nd. In a compression lubricator or grease cup comprising a piston and cap, the combination with the piston having a central boss, of an annular packing surrounding the said boss, a space being provided between the boss and the packing open to the contents of the lubricator. 3rd. In a compression lubricator or grease cup comprising a piston and cup, the combination with the piston having a central boss, of an annular packing surrounding the boss, a plate covering the packing and attached to the boss, a space being provided between the boss and the inner periphery of the packing, which space is in communication with the interior of the lubricator.

No. 42,012. Cart Gear. (*Train de voiture.*)

William Henry Jackson, Township of Pickering, Ontario, Canada, 17th February, 1893; 6 years.

Claim.—1st. The combination with the body, shafts and hang irons supported on the top of the cart springs, of the upper and lower springs, bars secured to the rear end of the shaft, the rear end of the upper bar passing through and held adjustably in the rear upwardly extending portion, the bolts being secured together as and for the purpose specified. 2nd. The combination with the body A, shafts B, and hang irons J, supported on the top of the springs D, of the spring bars E and F, and adjusting bars G and H, secured together at the top and bottom of the spring bar F, and provided at its forward end with adjusting bolts L, and nuts *l*, respectively, and at its rear end with upwardly extending portion, through which the threaded end of the bar E passes, and is held in position by the nuts g^1, the whole of the parts being secured on the top of the springs by the clip bolts K, as and for the purpose specified. 3rd. The combination with the body A, of the seat M, supported on the vertical steel spring posts N, which are secured together to the bottom of the body A, and to the seat, as shown and for the purpose specified. 4th. The combination with the body A, shafts B, provided with a rearwardly extending spring bars E and F, secured on top of the springs D, as specified, of the seat M, supported on the vertical posts N, as specified.

No. 42,013. Polishing Wheel, Pulley, etc.

(*Roue à polir, etc.*)

Alexander Robert Yates, Waterville, Maine, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. A polishing wheel or pulley, the periphery of which is composed of a number of pieces of leather set radially thereon and perforated, and a ring passing through said perforations, and closed by means of a screw connection, substantially as and for the purposes described. 2nd. A polishing wheel or pulley having its periphery composed of pieces of leather set radially thereon, and a ring passing through said pieces and closed by means of screw connection, the central portion of the connection being squared, and provided with a piece or pieces of leather having a square hole therein, substantially as and for the purpose set forth.

No. 42,014. Machine for Crimping and Folding Textiles. (*Machine à ourler et plier les étoffes.*)

Charles Edward Williams, Milford, Massachusetts, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. In a machine for folding and creasing pieces of material, the combination, of a stationary table adapted to support the piece of material to be folded, and provided with a shoulder or pressing surface a^2, a rocking presser pivotally connected to the frame at a point below the level of the table, and arranged to co-operate with the shoulder a^2, and means, substantially as described, for yieldingly forcing said presser toward the shoulder a^2, as set forth. 2nd. In a machine for folding and creasing pieces of material, the combination, of a fixed frame, provided with a shoulder or pressing surface a^2, a rocking presser pivotally connected to said frame, and arranged to co-operate with the shoulder a^2, a shaft journalled in bearings in said frame, and provided with two cranks, a lever affixed to the presser and arranged to be moved by one of said cranks, a curved lever pivoted to the frame and engaged at one end with the other crank, and a folding blade secured to the other end of said lever, as set forth. 3rd. In a machine for folding and creasing pieces of material, the combination, of a fixed frame provided with a shoulder or pressing surface a^2, a rocking presser pivotally connected to said frame; and arranged to co-operate with the shoulder a^2, a lever as d^2, affixed to said presser, an arm or lever *g*, pivoted to said lever d^2, a spring interposed between the levers *g* and d^2, and means for forcing the lever *g* upwardly, and thereby imparting through said spring a yielding pressure to the pressure, as set forth. 4th. The combination, of the supporting frame, having a pressing surface or shoulder a^2, the rocking presser pivotally connected to the frame, and arranged to co-operate with said presser, the oscillating lever *j*, pivotally connected to the frame, and the folding blade yieldingly connected to the said lever, as set forth. 5th. The improved folding machine, comprising in its construction the supporting frame or bed, having the pressing shoulder a^2, the steam pipe passing through said frame below said shoulder, and having valved steam connections at its ends, and the rocking presser mounted to oscillate on said steam pipe and heated thereby, as set forth. 6th. The combination, with the fixed pressing shoulder a^2, the movable presser and the folding blade, of the fixed rod, arranged to support the piece to be folded at one side of the path of the blade, as set forth. 7th. The combination, with the

fixed pressing shoulder, the movable presser and the folding blade, of the gage v, the rod v^2, attached to and extending backward from the gage, and clamping devices for said rod, as set forth. 8th. The combination, with the fixed pressing shoulder, the rocking presser, the lever d^2, affixed to said presser, the lever g, pivoted to the lever d^2, and a spring interposed between said levers, of the wedge arranged to adjust the said levers and thereby vary the position of said presser, and means for adjusting said wedge, as set forth. 9th. The combination, of the fixed pressing shoulder, the rocking presser, the levers g and d^2, connected with said presser, the crank shaft adapted to move said levers, the latch w, arranged to engage the lever g, and lock the presser in its pressing position, and devices including the rod w^4, and lever w^5, whereby the operator is enabled to move said latch and unlock the presser, as set forth. 10th. The combination, of the fixed pressing shoulder, the rocking presser, the levers g and d^2, connected with said presser, the crank shaft adapted to move said levers and provided with a cam, and the latch adapted to automatically engage the lever g, and thereby lock the presser, and arranged to be displaced by said cam for the purpose of releasing the presser, as set forth. 11th. A folding machine having a curved fixed pressing surface, a curved movable pressing surface, and a curved folding blade, as set forth.

No. 42,015. Check, Draft and Money Order.

(*Chèque, traite et mandat d'argent.*)

John Luther Spalding, Aitkin, Minnesota, U.S.A., 17th February, 1893; 6 years.

Claim.—A blank check, draft, money order or instrument made, substantially as herein shown and described, with a table of denominationally progressive columns of figures arranged side by side, the figures being consecutive and the same in each column, but expressive of different denominations in the different columns, and each column having an indicating mark or symbol, as and for the purposes set forth.

No. 42,016. Valve. (*Soupape.*)

Joseph M. Coale, Baltimore, Maryland, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. The combination, with the pop chamber, of the valve annularly surrounding the initial valve seat, and with the screw threaded valve casing, of the mechanism herein described, consisting of the adjustable ring C, having the parts 8, 9, 10 and 11, for forming a supplemental valve seat, and regulating and adjusting thereby the area of the supplemental passage for the escape of steam from the pop chamber, substantially as and for the purpose described. 2nd. The combination, with the valve casing, the initial valve seat formed thereon, the supporting arms and a guide bearing constructed in sections, of a valve adapted to said valve seat, and having a stem adapted to be reciprocated vertically in said guide bearing, substantially as described. 3rd. The combination, with a valve casing, its valve, an interior spring casing having an upwardly extended annular wall, a perforated external muffler chamber, partitioned by said annular wall to form an interior chamber open to the air through one or more series of said perforations, and a hollow spring adjusting screw passing through said interior chamber, and provided with a recess opening into the same, substantially as described. 4th. The combination, with an interior spring chamber, a valve adapted to rise therein, a spring controlling said valve, an external casing or shell, a hollow spring adjusting screw passing through said valve chamber, and a closing cap provided on its interior with radial arms s, carrying a screw ring A^1, adapted to operate as a lock nut for the valve adjusting screw, and having a base N^1, of relatively larger diameter adapted to rest upon the exterior shell or casing, and provided with perforations n^1, communicating with the atmosphere, substantially as described.

No. 42,017. Car Brake. (*Frein de chars.*)

William Bellamy Gurnsey, Norwick, New York, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. In a brake applying mechanism for cars operated through the medium of longitudinally moving draw heads, a brake machine adapted to apply or maintain brake shoe pressures only when the initial inthrusts of the two draw heads on the same car are practically simultaneous. 2nd. In a brake applying mechanism for cars, the combination of a brake machine with a disabling or tripping device which operates to prevent the application or the continuance of brake shoe pressure under compulsion of certain related initial movements of the two independently moving draw bars. 3rd. In a brake applying mechanism for cars operated through the medium of longitudinally moving draw heads, the combination of a brake machine with a tripping or disabling device which operates to prevent the application or continuance of brake shoe pressure whenever the inthrusts of the two draw heads of a car are not sufficiently simultaneous. 4th. In a system of momentum brakes, the combination of the foundation brakes, the two oppositely ended longitudinally moving draw heads or buffers, and a brake machine connected to the said draw heads and the foundation brakes, so constructed and arranged as that it will automatically apply the brakes or fail to apply the brakes in response to the simultaneousness or lack of simultaneousness of the draw heads compressions. 5th. In a car brake, the combination of the oppositely ended longitudinally moving draw heads or buffers, the foundation brakes, connections between the draw heads and foundation brakes, a brake applying device lying within said connections, and means, substantially as shown and described, for disabling the brake applying device when the inthrust movements of the draw heads are not sufficiently simultaneous. 6th. In a momentum car brake, the automatic brake applying mechanism, in combination with the independently operable draw heads, to both of which the said braking mechanism is attached, and a tripping device constructed substantially as shown and described, all the parts being so arranged that an independent inthrust of either draw head will first apply and then upon further inthrust movement release the brake. 7th. In a momentum car brake, the brake mechanism for applying the brakes under compulsion of inward thrusts of either draw head, in combination with a tripping mechanism for releasing the brakes in further response to such inward thrusts of one draw head as are not balanced by corresponding inthrusts practically simultaneous of the opposite draw head upon the same car. 8th. In a car brake, substantially as hereinbefore shown and described, the combination of the two draw heads or buffers capable of independent motion, connections therefrom through a brake mechanism to the foundation brake levers, and means for automatically disabling the brake mechanism and releasing the brakes if such movement of the draw heads or buffers is not sufficiently simultaneous, as set forth. 9th. In a car brake, the combination of the foundation brakes, two oppositely ended longitudinally moving draw heads or buffers, connections from said draw heads or buffers to the brakes, brake applying mechanism lying within and forming part of said connections, and means, substantially as shown and described, for temporarily disabling or disconnecting said brake applying mechanism when the inthrust movements of the draw heads are not sufficiently simultaneous. 10th. In a car brake, substantially as hereinbefore shown and described, the combination of the oppositely arranged and independently acting draw heads or buffers located at the respective ends of the car, connections therefrom to foundation brake levers through a brake applying mechanism operable by the movement of the said draw heads or buffers, and a tripping or disabling device to release or prevent the operation of the brakes when the draw head movements are non-simultaneous or differential, all the parts being so arranged as that the brakes will remain off during the continuation of the same compression. 11th. The combination, in a momentum car brake, of the draw bars or buffers, a spring common to both connections between said draw bars and spring, whereby said spring offers its total resistance to the movement of the one of the draw bars which is in advance of the other, or if they advance simultaneously then to both, a system of foundation brakes, and a brake applying mechanism, all arranged, substantially as and for the purposes set forth. 12th. In a car brake, the combination of the independent draw heads, the buffer springs, the brake mechanism connected to the draw heads through the buffer springs and provided with a tripping device, and the foundation brakes connected to the brake mechanism all adapted to operate, substantially as and for the purposes set forth. 13th. In a car brake, a brake applying mechanism, combined with the two draw heads and buffer springs of the car, so as to be operated by either or both of the draw heads through the bnffer springs, the said braking mechanism being connected to the brake levers, as shown and described, and so constructed as that when operated independently by either draw head alone it will first apply, and then upon further draw head movement release the brakes. 14th. In a car brake, substantially as hereinbefore described, the combination of the independent draw heads or buffers, a breaking mechanism having a relief spring, the said draw heads having buffer springs of less resistance than the relief spring, so that the leading draw head is obliged to travel a greater distance in compression than is necessary to its fellow, the lagging draw head. 16th. The combination in a momentum brake system for trains, of the longitudinally moving draw heads or buffers connected to the brake machine, and provided with buffer springs with the coupling device constructed substantially as shown and described, that imposes a tension whenever two cars are coupled upon the respective buffer springs, thereby eliminating all free slack, and tending to maintain a close contact of the coupled draw heads, as set forth. 16th. In an automatic train brake, the combination of the longitudinally moving draw heads or buffers having buffer springs, as shown, the braking mechanism connected therewith, and a coupling device imposing a tension on the buffer springs when the cars are coupled, so that an accidental uncoupling will compel the buffer springs to apply the brakes. 17th. The combination of the hand brake capstan, having a ratchet and dog with a device operated by said hand capstan, which in response to movements of said capstan which are insufficient for the application of brakes, engages or disengages a momentum brake machine or windlass from compulsion of the draw heads, so that the position of the hand capstan shall determine the movement or non-movement of the momentum windlass or its equivalent, and the consequent application or non-application of the momentum brakes. 18th. In an automatic or momentum brake, the combination of foundation brakes, the momentum draw head brake mechanism connected therewith, the hand capstan connected to the foundation brakes for the purpose of operating the same, said hand capstan being so constructed and arranged as that when sufficiently rotated in either direction, the actuation of the brakes from the draw heads will be prevented. 19th. In combination, with a capstan or windlass 16, for applying brakes,

a gear or its equivalent 16^d, a mutilated stop wheel 16^b, which by reason of its mutilation does not hinder the movement of the said windlass or capstan in the direction of "putting on brakes," but which by reason of its stop 16^d prevents the return movement, and consequent unwinding of the brake chain beyond the desired limit of its allowable slack, as set forth. 20th. In combination, with an automatic or momentum brake mechanism, a tripping device for releasing the brakes consisting essentially of a loose sleeve carrying two tripping dogs normally engaged with one or two fixed teeth in the tripping shaft, each tripping dog being arranged to be lifted out of engagement by its respective draw head when making an inthrust, and a lift lever fixed to the tripping shaft and engaging under the actuating pawl of the brake mechanism, all arranged substantially as and for the purposes set forth. 21st. In a momentum car brake, the combination of the longitudinally moving draw head or buffer, a buffer spring, an after follower, a rock arm for receiving the inward thrusts of the after follower, all arranged at one end of the car, the braking mechanism connected to the rock arm by pull rod, a second pull rod connecting the braking mechanism to a similar construction at the opposite end of the car, and means for equalizing in the brake mechanism, the compressions received from the opposed draw heads, substantially as shown and described. 22nd. In a momentum car brake, the combination of the longitudinally moving draw heads or buffers provided with buffer springs of a certain resistance, the braking mechanism constructed and arranged, substantially as shown and described, and a relief spring of greater resistance than the buffer springs, said relief spring having means of adjustment whereby the pressure of the brake shoes may be altered and determined. 23rd. The brake applying mechanism hereinbefore shown and described, connected to the draw heads of the car and to the brake shoes and levers, as shown, and consisting essentially of the windlass, the ratchet wheel, and actuating pawl, said actuating pawl being operated by draw head inthrusts, which in turn operates the ratchet wheel, windlass, brake levers and brakes, substantially as set forth. 24th. In a momentum car brake, the combination of the longitudinally moving draw head or buffer, the buffer spring, the after follower, the rock arm for receiving the inward thrusts of the after follower, the braking mechanism connected to said rock arm by the pull rod, brake levers and brakes, and means for connecting them to the braking mechanism, substantially as shown and described. 25th. In a momentum car brake, the combination, of the longitudinally moving draw head or buffer, the after follower, the buffer spring, the rock arm for receiving the inward thrusts of the after follower, the pull rod attached to the rock arm and extending to and attached to the braking mechanism, the windlass upon said brake machine, and means for applying brakes, all arranged substantially as and for the purposes set forth. 26th. In a momentum car brake, substantially as hereinbefore shown and described, the longitudinally moving draw heads or buffers, provided with buffer springs, after followers incasing said buffer spring, rock arms for receiving the inward thrusts of the after followers, and pull rods extending to a braking mechanism, in combination with said braking mechanism, having a rock arm to which both the pull rods are attached, a windlass connected with said rock arm, braking levers, and brakes connected to said windlass by a brake chain, all adapted to operate, substantially as and for the purpose set forth. 27th. In a momentum brake, the combination of the oppositely arranged and longitudinally moving draw heads or buffers, provided with buffer springs of certain resistance, and after followers for receiving the inward thrusts of the springs, with a braking mechanism provided with a brake windlass, and a relief spring or springs of greater resistance than the buffer springs for receiving further compressions of the draw heads when the brake shoes are fully on. 28th. In a momentum car brake, the combination of the independent oppositely arranged and longitudinally moving draw heads or buffers, provided with buffer springs of a certain resistance, the after followers, the rock arms, the pull rods, the braking mechanism connected to the pull rods and to the braking levers and brakes through means substantially as shown and described, and provided with one or more relief springs of greater resistance than the buffer springs, a compression rod, common to both the springs and provided with keys, and means for adjusting the tension of the springs, all arranged substantially as and for the purposes set forth. 29th. In a momentum car brake, a longitudinally operating draw head or buffer, provided with a buffer spring of certain resistance, in combination with the oppposite draw head similarly equipped, the intermediate mechanism common to both the draw heads, the compression bar, the equalizing bar pivoted therein and connected through the medium of a windlass to the brakes, one or more relief springs of greater resistance than the buffer springs sliding on and connected to the longitudinally moving compression bar, with means of adjustment of said spring or springs, as shown and described. 30th. In a momentum car brake, the combination, of the independent oppositely arranged and longitudinal moving draw heads of the car, with a brake applying mechanism connected therewith, and consisting, essentially, of a rock arm for receiving the draw head movements, a horizontal equalizing bar having a relief spring, a windlass provided with a ratchet toothed wheel, a pawl and pawl bearing lever for operating the wheel, suitable connections between the rock arm and the equalizer, and the pawl bearing lever, the brakes and the brake levers, and a brake chain connected to the windlass and common to both brake levers, all arranged substantially as described and for the purposes set forth. 31st. In a momentum car brake, the combination, of the oppositely arranged and longitudinally moving draw heads or buffers, provided with buffer springs of a certain resistance, and after followers, as shown, with a breaking mechanism connected to the after followers, and provided with a rock arm, a horizontal equalizing bar pivoted in a compression rod carrying one or more relief springs of greater resistance than the buffer springs, a windlass having a ratchet toothed wheel, suitable connections between the equalizer and the other parts, the brake levers and shoes, and the brake chain extending between said levers and the aforesaid windlass, all arranged as shown and described, and for the purposes set forth. 32nd. In a momentum car brake, the combination, of the independent oppositely arranged and longitudinally moving draw heads or buffers, the braking mechanism common to both draw heads, and the brake levers, chain and brake shoes connected to the braking mechanism, the latter consisting of a rock arm, a windlass having a ratchet toothed wheel and two pulley wheels, around which the brake chain is wound, a lever carrying a pawl engaging with the toothed wheel, and equalizer and links connecting it with the rock arm and pawl bearing lever, all arranged substantially as and for the purposes set forth. 33rd. In a momentum brake, the combination, of the independent oppositely arranged and longitudinally moving draw heads, a braking mechanism connected with both of said draw heads, and provided with a windlass having a ratchet toothed wheel with spur teeth upon its inner periphery, a mutilated gear or pinion meshing therewith and mounted upon the frame, and provided with a counter weight or spring, and a stop for limiting its retrograde movement, the parts being so arranged as that when the windlass through the wear upon the brake shoes, rotates beyond a certain point, the pinion gear will take up and eliminate this additional movement upon the release of the brakes. 34th. In a momentum car brake, the combination, of the independent oppositely arranged and longitudinally moving draw heads, the braking mechanism common to both draw heads, and connecting to the braking levers, chain and shoes, and provided with a take up, consisting of a wheel having spur teeth on its inner periphery, a mutilated pinion pivoted to the frame and meshing with the spur teeth, and provided with a counter weight or spring on one side, and a stop on the other, and a dog pivoted in the frame and provided with a tooth for engaging with the aforesaid stop, all adapted to operate, substantially as and for the purposes set forth. 35th. In a momentum car brake, the combination, of the longitudinally moving draw head, the brake mechanism connected thereto, two independent pull rods or their equivalents slotted, as described, and lying in and forming part of the connections between the brake machine and the draw heads, whereby the brakes may be applied by independent inthrusts of either drawheads, or simultaneous inthrusts of both draw heads.

No. 42,018. Buckle Holder for Reins, etc. (*Porte-boucle de harnais.*)

William Charles Edge, Newark, New Jersey, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. The combination of the buckle frame B, and wholly disconnected longitudinally movable cross bar *a*, having shoulders *x*, said cross bar being adapted to slide on said buckle frame in the direction from which pressure is applied, and being prevented from twisting or from transverse movement by the shoulders *x*, substantially as described. 2nd. The combination of the buckle frame B, wholly disconnected longitudinally movable cross bar *a*, having shoulders *x*, which engage with the buckle frame when the parts are in operative position, and handle *d*, said cross bar *a*, being adapted to jam against and secure the strap within said buckle frame, substantially as described.

No. 42,019. Furnace for Steam Boilers.

(*Foyer de chaudières à vapeur.*)

Frank Barclay, Beatrice, Nebraska, U.S.A., 17th February, 1893; 6 years.

Claim.—1st. In a furnace, the combination of a front coking chamber, a rear combustion chamber, with a transverse air chamber or duct located in a pendant partition between the two chambers, the rear wall of said air chamber or duct being provided with a series of small perforations for the delivery of heater air in small jets, substantially as and for the purpose set forth. 2nd. In a furnace, the combination of a front coking chamber, a rear combustion chamber, a pendant hollow partition located between said chambers, and having its rear wall provided with a series of small perforations, and a water pipe arranged to support said hollow partition, substantially as described. 3rd. In a furnace, the combination of a front coking chamber, a rear combustion chamber, and a pendant partition having an opening underneath it through which the gases are compelled to pass through the incandescent fuel, with an air heating duct or chamber located in said pendant partition, and having its rear end lower walls provided with a series of perforations for delivering the air in small jets at the point where the gases enter the combustion chamber, substantially as shown and described.

No. 42,020. Plate for Sealing Bottles.

(*Plaque pour sceller les bouteilles.*)

Robert S. Wiesenfeld, Baltimore, Maryland, U.S.A., 17th February, 1893 ; 6 years.

Claim.—1st. A sealing plate for bottles made of soft material and provided with a part *h*, adapted to close the throat of the bottle, and shoulders *k*, k^1, for the purpose specified. 2nd. A sealing plate for bottles having the extended portion *h*, enlarged portion *i*, and shoulders *k*, k^1, in combination with a bottle provided with a transverse slot, a seat to receive the portion *h* of the sealing plate, and shoulders *g*, g^1, in its head. 3rd. A tapered sealing plate for bottles provided with a portion to close the throat of a bottle, and an enlarged portion to engage the head of a bottle, in combination with a bottle having a transverse slot in its head, provided with a seat for the sealing plate.

No. 42,021. Metholofan1 Apparatus for Making Gas.

(*Méthode et appareil de fabrication du gaz.*)

John Henry Richardson Dinsmore, Liverpool, England, 17th February, 1893 ; 6 years.

Claim.—1st. Apparatus for making illuminating and heating gas, consisting of a chamber or vessel containing a separate space for distilling coal, a separate space for distilling tar (or other equivalent hydrocarbon), and a space or conduit in which the coal and tar gases combine and through which they pass, arranged and adapted to operate, substantially as herein set forth. 2nd. Apparatus for making illuminating and heating gas, consisting of a chamber or vessel containeng two or more conduits or chambers, divided by a shelf or shelves, said shelf or shelves being accessible from the end door of the apparatus for cleaning, substantially as and for the purposes herein set forth. 3rd. Apparatus for making illuminating and heating gas, consisting of a chamber or vessel containing a separate chamber in which tar (or analogous hydrocarbon) is distilled, and a chamber or conduit in which gas is introduced, and where into also the tar gases or vapours are introduced, and whereby said coal gas and tar gases or vapours are heated, mixed, and rendered permanent, substantially as and for the purposes set forth. 4th. In the manufacture of illuminating and heating gas, effecting in self-contained apparatus the distillation of tar into gases or vapours in a chamber thereof, and passing said tar gases out of said chamber into a separate or other chamber or conduit and mixing it there with crude coal gas, and passing such combined gases through said separate or other conduit wherein they are heated and rendered permanent, and then cooling said combined gases upon leaving the apparatus, substantially as set forth. 5th. The arrangement and construction of apparatus substantially as herein set forth, whereby the tar is distilled and the lighter vapours or constituents given off, receive the smaller quantity of heat, whilst the denser constituents of the tar and its vapours or gases receive the greater quantity of heat, substantially as and for the purposes set forth. 6th. The manufacture of illuminating and heating gas from tar and coal, by introducing tar into a heated chamber or conduit, and causing such tar to pass through said conduit in a stream, whereby the lighter constituents only of the tar are given off, and also introducing into said apparatus coal gas, said coal gas and lighter tar vapours or gases being passed together through a heating chamber or conduit, substantially in the manner and for the purposes herein set forth.

No. 42,022. Device for Partitioning Structures.

(*Appareil pour séparer par des cloisons les édifices*)

William Evarts Richards, New York City, New York, U. S. A., 17th February, 1893 ; 6 years.

Claim.—1st A device for partitioning drawers and other structures, consisting of a channelled body piece having spurs for engaging with the side and bottom of the structure, substantially as described. 2nd. A device for partitioning drawers and other structures, provided at one end with a part adapted to engage the bottom of such structure, and at the other end with a part adapted to engage the side of said structure, substantially as shown and described. 3rd. In a device for partitioning drawers and other structures, made as described, the channelled body piece having the side pieces forming the channel extended at their lower end to a point forming spurs for engaging the bottom of such structure, substantially as shown and described. 4th. A device for partitioning drawers and other structures, consisting of a body portion *b*, side pieces bent at an angle thereto, and continued at their lower end to a point, the top of part *b*, being also continued to a point and bent in the opposite direction to the side pieces, substantially as shown and described.

No. 42,023. Lock for Railway Signals.

(*Serrure pour signaux de chemin de fer.*)

Robert Gamble Marks, 10 Russell St., Thornes, Wakefield, England, 17th February, 1893 ; 6 years.

Claim.—1st. An apparatus for locking railway signals, consisting of a lever *l*, with catch l^1, at its end, retaining in its ordinary position the crossing lever, the other end of the lever being connected to a locking device for each home signal lever, comprising a catch and a retaining plate with spring, the arrangement being such that either locking device can be operated according to the direction in which the lever l^1 is moved, substantially as and for the purposes specified. 2nd. An apparatus for locking railway signals, consisting of a lever *l*, with projection l^1, a hinged plate *b*, with hole *g*, retained in open position by means of a sliding plate, attached by a chain or wire to the lever *l*, and operating substantially as described, and for the purposes specified. 3rd. In an apparatus of the kind described, the combination of a lever *l*, with projection l^1, adapted to pass in front of the cross over lever and prevent its being actuated, with a box *a*, within which is hinged the locking piece *b*, carrying the sliding plate *j*, which serves to hold the locking piece in inoperative position, the plate *j*, being connected to one end of the lever *l*, by means of a chain or wire and lever, pulley or the like, and withdrawn on pulling the lever to one side.

No. 42,024. Game. (*Jeu.*)

Frederick John Forster, Middlesborough, Yorkshire, England, 18th February, 1893 ; 6 years.

Claim.—A series of cards having numbers indicated thereon, in combination with a prearranged key or tell tale, consisting of a card provided with numbers arranged thereon, for the purpose of discovering by means of the series of cards aforesaid, a number mentally thought of and contained on the tell tale on key card, substantially as described.

No. 42,025. Piano Agraffe. (*Agrafe pour pianos*)

John Warner Reed, Chicago, Illinois, U.S.A., 18th February, 1893; 6 years.

Claim. 1st. A piano agraffe comprising a base 1, pendant shank 2, upwardly extending pivot bars 3, and anti-friction sheaves 5, the same forming a bearing for the individual strings, in combination with individual tuning pins, substantially as set forth. 2nd. A piano agraffe comprising a base, pendant shank 2, upwardly extending pivot bars 3 and 4, and a series of anti-friction rollers or sheaves 5, journalled between said bars, substantially as set forth.

No. 42,026. Pedal for Pianos. (*Pédale pour pianos*)

John Warner Reed, Chicago, Illinois, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. A pedal lever for pianos, provided with a foot bar 4, arranged horizontally and extending laterally in front of the piano in a plane parallel with and close to said piano front, substantially as set forth. 2nd. A pedal lever for pianos, comprising a foot bar 4, arranged horizontally and extending laterally in front of the piano in a plane parallel with and close to said piano front, a similarly extending pivot portion 5, and a connecting shank portion uniting the two, substantially as set forth.

No. 42,027. Water Wheel. (*Roue hydraulique.*)

Henry C. Gardner, Nashville, Tennessee, U.S.A., 18th February, 1893 ; 6 years.

Claim.—1st. A current wheel divided into a series of compartments, a hollow axle or shaft communicating with said compartments and automatic valves to alternately open and close communication during the operation of the said wheel, substantially as described. 2nd. A scoop wheel divided into a series of compartments adapted to discharge into the axle of the wheel, automatic flap valves for preventing the return of the water to said compartments, and paddles through which the wheel is propelled, substantially as described. 3rd. A current wheel, comprising a hollow cylindrical axle or shaft formed with peripheral openings, curved partitions radiating from said axle or shaft, discs forming the ends of said wheel, and valves acting automatically to open and close each of said openings once during each revolution of the wheel, substantially as described.

No. 42,028. Printing Telegraph. (*Télégraph imprimant.*)

The Equitable Manufacturing and Electric Company, assignee of Henry Van Hoevenbergh, all of New York City, New York, U.S.A., 18th February, 1893 ; 6 years.

Claim.—1st. The combination, substantially as set forth, of a rotatable type wheel, a segment wheel, transmitting keys connected with the individually insulated segments of the segment wheel, a trailer moving with the type wheel and traversing the segment wheel, a neutral relay, the trailer and relay being connected with the main line, a type wheel controlling magnet, a press magnet, and two local circuits respectively connected with the front and back tops of the relay, and both connected with the relay armature lever, the type wheel magnet and press magnet being both included in both local circuits. 2nd. The combination, substantially as set forth, of a rotatable type wheel, a segment wheel, alternate open and closed transmitting keys connected with the individually insulated segments of the segment wheel, a trailer moving with the type wheel and traversing the segment wheel, a neutral relay, the trailer and relay being connected with the main line, a type wheel controlling magnet, a press magnet, and two local circuits respectively connected with the front and back stops of the relay and both connected with the relay armature lever, the type wheel magnet and press magnet being both included in both local circuits. 3rd. In a printing telegraph, the combination, substantially as set forth, of

the neutral main line relay, two local circuits respectively connected with the front and back stops of said relay, and both connected with the relay armature lever, the polarized magnet having two separate and distinct windings, and the neutral magnet having two seperate and distinct windings, one winding of each magnet being included in one local circuit, and the other winding of each magnet being included in the other local circuit. 4th. The combination, substantially as set forth, of a rotatable type wheel, a segment wheel, alternate open and closed transmitting keys connected with the individually insulated segments of the segment wheel, a trailer moving with the type wheel and traversing the segments, escapement devices controlling the movement of the type wheel, a neutral relay, the relay and trailer being in the main line, a polarized escapement magnet having two separate and distinct windings, a neutral press magnet having two separate and distinct windings, and two local circuits respectively connected with the front and back stops of the relay and both connected with the relay armature lever, one winding of each magnet being included in one local circuit and the other winding of each magnet being included in the other local circuit. 5th. The combination, substantially as set forth, of a rotatable type wheel, a segment wheel, alternate open and closed transmitting keys connected with the individually insulated segments of the segment wheel, a trailer moving with the type wheel and traversing the segments, escapement devices controlling the movement of the type wheel, a neutral relay, the relay and trailer being in the main line, an escapement magnet having two oppositely wound windings, a neutral press magnet having two oppositely wound windings, and two local circuits respectively connected with the front and back stops of the relay, and both connected with the relay armature lever, one winding of each magnet being included in one local circuit, and the other windings of each magnet being included in the other local circuit. 6th. The combination, substantially as set forth, with a type wheel or carrier of a main line circuit breaker actuated with said type carrier, the transmitting keys, connected with the circuit breaker, a main line relay, two local circuits respectively connected to the front and back contacts of the main line relay, and both connected with the relay armature lever, and type carrier and press magnets included in both local circuits. 7th. The combination, substantially as set forth, with a type wheel or carrier and impression devices, of a main line relay, two local circuits respectively with the front and back contacts of said relay, and both connected with the relay armature lever, and type carrier and press magnets included in both local circuits. 8th. The combination, substantially as set forth, of a type wheel or carrier and impression devices, a main line relay, two local circuits respectively connected with the front and back stops of said relay, and both connected with the relay armature lever, a polarized type carrier magnet having two separate and distinct windings and a neutral press magnet having two separate and distinct windings, one winding of each magnet being included in one local ciruit, and the other windings of each magnet being included in the other local circuit. 9th. A unison device for printing telegraphs consisting of the lever N having a latch *n* and beak *l*, in combination with the press lever having a notch *o*, and the unison pin on the type wheel shaft.

No. 42,029. Storage Battery. (*Accumulateur électrique.*)

William Warren Gibbs, assignee of Henry Herbert Lloyd, all of Philadelphia, Pennsylvania, U. S. A., 18th February, 1893; 6 years.

Claim.—1st. A battery plate or electrode, comprising a conducting support and its complemental active material, or material adapted to become active, distance pieces or separators disposed adjacent to the support, and provided with transversely ranging apertures opposite the active material or material adapted to become active, and with longitudinally ranging and staggered channels, and a textile or woven fabric disposed intermediate of the distance pieces or separators, and the faces of the positive plate or electrode, substantially as and for the purposes set forth. 2nd. A battery plate or electrode, comprising a conducting support and its complemental active material or material adapted to become active, distance pieces or separators covering the support, and provided with longitudinally ranging and staggered channels, and with transversely ranging apertures disposed opposite the active material, or material adapted to become active, and a textile or woven fabric folded around the positive plate or electrode, and overlying the active material or material adapted to become active thereof, substantially as and for the purposes set forth. 3rd. In a secondary or storage battery, an acid proof separator or distance piece adapted to cover a support, and provided with transversely ranging apertures for exposing the active material or material adapted to become active, and with longitudinally ranging channels communicating with said apertures and located upon the respective faces of the separator or distance pieces, and the channels upon one face of the separator being disposed intermediate of the channels on the other face thereof, substantially as and for the purposes set forth. 4th. A battery plate or electrode, comprising a conducting support and complemental active material, or material adapted to become active, and distance pieces or separators covering the support, and provided with transversely ranging apertures disposed opposite the active material, or material adapted to become active, and with longitudinally ranging and staggered channels, substantially as and for the purposes set forth. 5th. In a secondary or storage battery, positive and negative plates or electrodes, comprising respectively a support and complemental active material, or material adapted to become active, separators or distance pieces interposed between said plates or electrodes, and provided respectively with transversely ranging apertures, in alignment with the active material of paid plates, and with longitudinally ranging and staggered channels, and a textile or woven fabric interposed between the respective faces of the positive plates or electrodes and the distance pieces or separators, substantially as and for the purposes set forth. 6th. A secondary or storage battery, comprising a vase or cell, an electrolyte, two series of plates composed respective of supports and complemental active material, or material adapted to become active, separators or distance pieces interposed between said plates, and provided with longitudinally ranging staggered channels and with transversely ranging apertures disposed opposite the active material or material adapted to become active, and a textile or woven fabric covering medium intermediate of the positive plates and separators or distance pieces, and overlying the active material or material adapted to become active, substantially as and for the purposes set forth.

No. 42,030. Machine for Drawing Warp Threads.

(*Appareil d'étirage de la chaîne.*)

Richard Haywood Ingersoll, Biddeford, Maine, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. In a warp drawing in machine, the combination of the heddle support, the traversing carriage, the platforms supported by and moving with the traversing carriage and having a space or channel between them for the passage of the heddle cords, the slides moving in ways upon opposite sides of said space or channel and coupled together to move simultaneously as described, the heddle-eye separating fingers and wedge shaped block mounted on said slides, reciprocating devices for said eye separating fingers, and block, and the eye holding jaws projecting from said platforms at the end of the space or channel between the same, substantially as described. 2nd. In a warp drawing in machine, the combination, with the heddle support or holder, the transversing carriage, and a reciprocating warp drawing needle mounted upon said traversing carriage, of two platforms connected to and moving with the carriage, and having a space or channel between them for the passage of the heddle cords, jaws projecting from said platforms at the end of said space for holding the heddle eye in the path of the needle, the slides with their spring actuated fingers and wedge shaped block moving in guides on opposite sides of said space or channel and coupled together as described, and means for reciprocating said slides, whereby the heddle eye is carried into the jaws and held in the path of the drawing in needle, substantially as described. 3rd. In a warp drawing in machine, the combination, with the heddle support or holder, and the two platforms having a space between them for the passage of the heddle cords, and provided at their ends with the eye holding jaws of the slides, coupled together by a yoke adapted to extend under the heddle, said slides moving in slots on opposite sides of said space or channel and carrying on each of their upper and lower sides a wedge shaped block and a series of spring actuated fingers co-operating therewith, and means for reciprocating the slides, whereby the heddle eye is carried into the holding jaws, held therein during the passage of the needle, and forced out therefrom after being threaded, substantially as set forth. 4th. In a warp drawing in machine, the combination, with the platform S, S^1, and the warp drawing in needle, of the guide U, with its flange t^2, and the jaws r^2, s^2, with their inward and upward inclines 64 and 65, whereby the point of the drawing in needle is kept closely against the ends of the platforms and in line with the eye of the heddle within the jaws r^2, s^2, substantially as set forth. 5th. In a warp drawing in machine, the combination, with the two platforms and their reciprocating slides carrying the eye separating devices of the jaws r^2, s^2, located at the end of the space between said platforms and adapted to fit respectively under the upper knot and over the lower knot of the heddle eye, and to hold said eye with its face or broader side presented toward the front of the machine, substantially as set forth. 6th. In a warp drawing in machine, the platform S, S^1, having jaws r^2, s^2, and provided at their edges in the narrow portion of the space q^2, between the same with inclines or shoulders 62, adapted to contact with the knots of the heddle eye, whereby the said eye in its passage through the space q^2, is guided to the level of the jaws r^2, s^2, projecting from said platforms at the end of the space q^2, substantially as set forth. 7th. In a warp drawing in machine, the combination with the heddle support and the platforms having a space or channel between them, of the slides moving in guides on opposite sides of the space between said platforms, and coupled together by a U-shaped yoke extending around under the heddle, the reciprocating heddle eye separating devices mounted on said slides, and means for reciprocating the slides, substantially as set forth. 8th. In a warp drawing in machine, the combination, with the platforms S, S^1, having between them the space q^2, of the slides p^3, q^3, moving in guides on opposite sides of the space q^2, and connected together by a U-shaped yoke B^1, the wedge shaped blocks 68, pawl shaped spring actuated fingers 69, 70, 72, the eye holding jaws r^2, s^2, the lever r^3, attached to one of the said slides, and means for actuating the lever r^3, all substantially as described. 9th. In a warp drawing in machine, the combination, with a heddle sup-

port or holder, of the vertical shafts u^2, v^2, horizontal swinging holdback fingers w, w^1, mounted upon said vertical shafts and located one above the other, and adapted to lap and swing past each other, said fingers having rounded hook shaped ends extending when swung inward beyond a line or vertical plane passing centrally between the front and back rows of heddle cords, whereby said rows of cords are so widely separated that the holdback finger on one side cannot catch any of the cords of the opposite row, substantially as set forth. 10th. In a warp drawing in machine, the combination with the heddle support or holder, of the horizontally swinging holdback fingers with their operative mechanism, said fingers being located one above the other, and adapted to lap and swing past each other as described, the plates or platforms having a space between the same, and jaws at the end of said space to hold the heddle eye, the slides moving in guides on opposite sides of the space between said platforms, and the eye separating and holding devices, consisting of the spring actuated pawl shaped fingers and wedge shaped blocks mounted on said slides, and means for reciprocating the slides, all operating substantially as set forth. 11th. In a warp drawing in machine, the combination, with the heddle cord holdback fingers, and the reciprocating eye-separating devices, of a reciprocating slide or carrier, and a brush mounted on said slide or carrier, and adapted to carry the heddle eye when released into a position to be acted upon by the reciprocating eye separating fingers, substantially as described. 12th. In a warp drawing in machine, the combination, with the platforms S, S^1, with their jaws r^2, s^2, and the reciprocating eye separating devices as described, and the horizontally swinging holdback fingers w, w^1, of the slides or carriers moving in diagonal guides in said platforms, and the two brushes 78 mounted on said slides or carriers, and mechanism for reciprocating said brush carriers, all substantially as described. 13th. In a warp drawing in machine, the combination, with a warp drawing needle, of a horizontally rotating disc, a slide moving horizontally in said disc and carrying at its outer end a warp thread selecting hook having an inclined face and an eye covered by a light spring, and means for projecting the slide to cause the selecting hook to take a single warp thread, and afterward retracting said slide, substantially as described. 14th. In a warp drawing in machine, the combination, with the warp drawing in needle, of the rotating disc and its operative mechanism, the selecting hook with its carrying slide moving horizontally in said disc, a spring for projecting said hook beyond the periphery of the disc to cause its inclined face to bear against the warp thread, a cam for retracting the slide and selecting hook, and the guide rod e^4, whereby the selected thread is brought against the lower edge of the warp drawing in needle as the selecting hook is rotated, substantially as described. 15th. In a warp drawing in machine, the combination of the warp drawing in needle, the rotating disc C^1, the slide 141 carrying at one end the selecting nook c^4, having an inclined side 148, and an eye or aperture 142, closed on one side by a light spring 143, the spring 144, and the cam plate 146 adapted to act upon a pin 145 projecting from the slide 141, and the guide rod e^4, all operating substantially as set forth. 16th. In a warp drawing in machine, the combination, with the warp thread selecting hook, of a pair of clamp ng jaws located above the level of the warp thread selecting hook, and acting in a horizontal plane only, said jaws being adapted to clamp and hold the warp threads tightly in position close to the point at which they are taken by the selecting hook, and means for operating said clamping jaws, substantially as set forth. 17th. In a warp drawing in machine, the combination, with the warp thread selecting hook, of a pair of nippers provided with an upper and lower pair of clamping edges or jaws, the former located above, and the latter below the path of the selecting hook, which passes horizontally between the inner ends of the said upper and lower jaws, whereby the warp threads are held tightly in position immediately above and below the path of the selecting hook at the time the latter is taking a thread, and means for operating said clamping jaws, substantially as set forth. 18th. In a warp drawing in machine, the table E^1, provided with two extensions 106, 107, having the adjustable nippers K^1, the slide 113 carrying the movable jaw, the lever 114, pivoted to the slide, and a cam for operating said slide, combined with the rotating disc C^1, and its sliding selecting hook C^4, and means for operating the disc and hook and the nippers, substantially as set forth. 19th. In a warp drawing in machine, the combination of the rotating and horizontally sliding warp thread selecting hook and its carrier, and means for operating the same, the lower pair of nippers H^1, having a vertically reciprocating movement as described, and the upper pair of nippers K^1, adapted to clamp and hold the warp threads at points immediately above and below the path of the selecting hook, and means for operating the nippers, substantially as set forth. 20th. In a warp drawing in machine, the combination, with the upper clamping nippers and the rotating and horizontally sliding warp thread selecting hook, and means for operating the same, of the standard D^1, the slide 123, moving in vertical guideways on said standard D^1, the lower horizontal nippers H^1, connected by a link and pivoted to said slide 123, a spring 133, for closing said nippers, a vertical rod 135, having a wing or projection 134, placed between the said lower nippers, and adapted to separate their jaws against the stress of the spring 133, and means for reciprocating the slide 123, with the nippers, and oscillating the rod 135, all substantially as set forth. 21st. In a warp drawing in machine, the combination, with a tubular heddle supporting rod, and a screw shaft placed therein adapted to be turned by hand, of a nut operated by the screw shaft within the tubular rod, the bar r, adapted to move with said nut, and connected therewith through a longitudinal slot or key way in said rod, the hanger G, adapted to slide on the tubular supporting rod independently of the bar r, and a set screw adapted to couple or connect the hanger with the bar r, whereby the hanger can be adjusted longitudinally on its supporting rod, and freely moved along said rod independently of the adjusting screw when the set screw is loosened, substantially as set forth. 22nd. In a warp drawing in machine, the within described reed holding frame, consisting essentially of the horizontal rods 52, 53, supported by the frame work of the machine, the lower one having a long U-shaped socket 54, for the reception of the lower bar of the reed, and the upper one being provided with a swinging socket 55, having a series of fingers or projections 57, and adapted to fit over the upper bar of the reed when swung in over the bar 53, combined with a locking catch for holding the swinging socket in place, substantially as described. 23rd. In a warp drawing in machine, the combination, with a warp thread clamping bar, of a tubular supporting rod connected therewith by lugs sliding on said rod, a screw shaft placed therein adapted to be turned by hand, a nut operated by said screw shaft within the tubular rod, and connected through a longitudinal slot or key way in said rod with said warp thread clamping bar, whereby the latter can be adjusted longitudinally on its supporting rod, substantially as set forth. 24th. In a warp drawing in machine, the combination, with the reciprocating warp drawing in needle and its sliding carrier, of an actuating lever provided with a rod sliding in guides thereon and pivoted at one end to the needle carrier, a crank connected with a slide moving in guides on said lever and adapted to oscillate the latter, and means for rotating the crank, whereby a reciprocating movement is imparted to the needle, substantially as described. 25th. In a warp drawing in machine, the combination, with the casing P, of the reciprocating needle Q, with its supporting guide and carrier, the latter sliding in guides on the casing P, the lever R, fulcrummed at 61, the tubular rod e^2, sliding in guides on the lever R, and pivoted at its upper end to the needle carrier, the crank arm h^2, pivoted to a slide moving in guides on the lever R, and means for rotating said crank arm, the spring i^2, inclosed within the tubular rod e^2, and the rod j^2, having a transverse pin k^2, projecting through slots in the tubular rod e^2, and adapted to be brought into contact with a stop on the lever R, whereby the spring i^2, is compressed just befors the needle reaches the end of its stroke in either direction, substantially as and for the purpose described.

No. 42,031. Grain Drill. (*Semoir en ligne.*)

Daniel E. McSherry, Dayton, Ohio, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. The combination with a grain drill shoe, a casting or block pivoted on the rear side of the same by a vertical bolt, a transverse sleeve carried by the casting wheel carrying arms pivoted to this transverse sleeve, and means for depressing the wheel, substantially as described. 2nd. The combination of a grain drill shoe, provided with ears on its rear side, a casting pivoted between these ears by a vertical bolt, this casting having formed integral with it, across its rear side, a horizontal tube or sleeve, arms pivoted to the ends of this sleeve by a horizontal bolt, said arms carrying a wheel at their rear ends, substantially as described. 3rd. The combination with a grain drill shoe, a laterally swinging casting pivoted thereto by a vertical bolt, a horizontal bolt pivoted to the rear side thereof, vertically swinging arms pivoted on said bolt, said arms carrying a presser wheel, substantially as described. 4th. The combination of a grain drill shoe, a laterally swinging casting pivoted thereto by a vertical bolt, a laterally swinging angular arm pivoted thereto by said bolt, this arm having a rearwardly extending arm at its upper end, wheel carrying arms to the said casting by horizontal bolts, a vertical rod pivoted to these arms and extending up through an opening in the rearwardly extending arm, and a spring for yieldingly pressing the wheel carrying arms downward, substantially as described.

No. 42,032. Sulky Plow. (*Charrue à siège.*)

The Cockshutt Plow Company, Brantford, assignee of George Wedlake, also of Brantford, and Oliver Harding, Township of Markham, all in Ontario, Canada, 18th February, 1893; 6 years.

Claim.—1st. In a riding plow, a front carriage having a bail pivoted to the tongue, in combination with means thereby the horizontal angle between the tongue and front carriage may be readily altered, substantially as and for the purpose specified. 2nd. In a riding plow, the tongue A, pivoted to the rear bar B, of the bail C, of the front carriage D, in combination with the hand lever F, pivoted to the tongue and rigidly connected to the arm G, which is flexibly connected to the front of the bail C, substantially as and for the purpose specified. 3rd. In a riding plow, the front plow carriage pivoted on the plow beam, in combination with means to limit the sway of the plow carriage, substantially as and for the purpose specified. 4th. In a riding plow, the front plow carriage D, pivoted on the plow beam M, in combination with slack chains b, connecting the axle of the plow carriage to the front and rear portions of the plow beam, substantially as and for the purpose specified. 5th. In a riding plow, the front plow carriage pivoted on the king bolt N, in combination with the eccentric E, pivoted on the plow beam, the said eccentric having a short arm P, projecting therefrom connected by a link R, to the hand lever Q, pivoted on the plow beam close to the

driver's seat, substantially as and for the purpose specified. 6th. In a riding plow, the rear furrow wheel S, swiveled on the plow beam M, in combination with a front plow carriage D, pivoted on the said plow beam and connected to the front and rear portions of the plow beams by means of slack chains *b*, substantially as and for the purpose specified. 7th. In a riding plow, a rear furrow wheel journaled on a spindle swiveled on the plow beam in such a manner that it is capable of turning freely in a horizontal plane, in combination with a lever pivoted on the plow beam close to the driver's seat, one end of the said lever being adapted to engage with the said spindle or a collar formed thereon, so that the said spindle may be held from revolving, substantially as and for the purpose specified. 8th. In a riding plow, the tongue A, pivoted on a bolt adjustably connected to the rear bar B, of the bail C, of the front carriage D, of the plow, in combination with the hand lever F, spindle E, arm G, link H, and lug I, adjustably connected to the front bar J, of the bail C, substantially as and for the purpose specified.

No. 42,033. Track Sweeper. (*Balayeuse pour rails.*)

William H. Leigh, Beaver Falls, and J. Sharp Wilson, Beaver, both in Pennsylvania, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. In combination, with a rearwardly divergent plow, the rearwardly convergent rotary brushes arranged approximately at right angles to the sides of the plow, and projecting at their front ends beyond the same, substantially as specified. 2nd. In combination, with a plow, the rearwardly convergent brushes, and rotary scrapers or cleaners arranged to operate in contact with the rails, substantially as specified. 3rd. The rotary scrapers or cleaners, provided with offsets to conform to the shape of the rails, in combination, with the plow frame and brushes preceding said scrapers or cleaners, and arranged at a prescribed angle thereto, substantially as specified. 4th. The rotary scrapers or cleaners, provided with clamping blocks or bars, and metallic teeth or plates engaged between said blocks or bars, in combination with a rotary shaft, operating means for said shaft, and a wheeled truck frame carrying said shaft, and actuating means, substantially as specified. 5th. The rotary scrapers or cleaners, having parallel disks, clamping blocks or bars W, W¹, connecting said disks, and teeth or plates engaged between said blocks or bars, in combination with a wheeled truck frame, and scraper shaft carried by said frame, substantially as specified. 6th. The combination, of the supporting frame adapted to be connected to the front end of a truck, as described, and carrying a main shaft provided with traction wheels, the scrapers or cleaners carried by a counter shaft which is geared to the main shaft, the plow, and the rotary brushes arranged upon opposite sides of the plow, and geared to the main shaft, substantially as specified. 7th. The combination, of the main shaft carrying traction wheels, the brush frame provided with stirrups to bear on the main shaft, latches to engage the main shaft when the brush frame is elevated, and the plow brushes carried by the brush frame, said brushes being geared to the main shaft, substantially as specified.

No. 42,034. Frame for Mirrors and Analogous Articles. (*Cadre pour miroirs et autres articles analogues.*)

George James Bellamy Rodwell, Buffalo, New York, assignee of Arthur Martyn, Hammersmith, Middlesex, England, 18th February, 1893; 6 years.

Claim.—As an improved article of manufacture, a frame for mirrors, advertisements, pictures, cards, or analogous article composed of corner pieces adapted to receive the corners of the article to be framed, and separately formed ties connecting the corner pieces to said article, as set forth.

No. 42,035. Process of and Apparatus for the Aeration, Bottling and Discharging of Liquor. (*Procédé et appareil pour aérer, mettre en bouteilles et dispenser les liqueurs.*)

Algernon Brooker Jackson, assignee of Frederick Walter, both of London, England, 18th February, 1893; 6 years.

Claim.—1st. The method of aeration and delivery of liquids for drinking purposes by means of the following appliance, viz., a high pressure carbonic acid gas reservoir, a controlling reducing pressure valve, an aerating or saturating vessel, and a delivery fountain or nozzle making first discharge (before hand delivery into an open drinking glass) into a detachable narrow necked vessel or bottle, making by hand, foot or spring pressure a temporary joint during discharge, upon the said delivery nozzle, substantially as described, 2nd. The combination, with the aforesaid gas reservoir, and saturator or aerating vessel, of a further liquid supply vessel placed in communication with the high pressure gas reservoir, through a special reducing valve to supply the liquid automatically to the saturator. 3rd. The delivery of aerated liquids for bottling purposes from the above claimed high pressure gas reservoir and saturator, through a suitable bottling apparatus, and into bottles provided with self closing valve stoppers, substantially as described. 4th. The construction of an aerating or saturating vessel, provided with a head containing valve controlled inlets for the desired liquid and for the gas, and also a valve controlled exit passage fitted with a nozzle making temporary air tight joint with a detachable narrow necked vessel acting as a first receiver before hand delivery in a glass or opened mouthed drinking vessel, substantially as described.

No. 42,036. Separator for Ores. (*Séparateur de minerai.*)

Thomas A. Edison, Llewellyn Park, and William R. L. Dickson, Orange, both in New Jersey, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. The method of separting magnetic material from non-magnetic material, which consists in agitating the mixed pulverized materials in a magnetic field, transferring the magnetic material and particles adhering thereto to a second magnetic field in a higher horizontal plane by the combined action of a moving body and magnetic attraction, and further agitating the materials in the second field, substantially as described. 2nd. The method of separating magnetic material from non-magnetic material, which consists in continuously conveying the pulverized materials into the lower of two or more adjacent magnetic fields and agitating the materials therein, transferring the magnetic material and particles adhering thereto, to a second magnetic field in a higher horizontal plane by the combined action of a moving body and magnetic attraction, and further agitating the material in the second field, substantially as described. 3rd. The method of separating magnetic material from non-magnetic material, which consists in agitating a pulverized mass of the material on a moving body, and in a magnetic field until said field becomes overloaded with magnetic material and adhering gangue, transferring the materials by magnetic attraction to succeeding magnetic fields, and further agitating the same, substantially as described. 4th. The combination, in a magnetic separator, of a movable body, a stationary magnet with poles adjacent to one surface of said body, and means for delivering material to be treated to the opposite surface of the movable body adjacent to the lower pole of said magnet, substantially as described. 5th. The combination, in a magnetic separator, of a movable body, a series of magnets adjacent to one surface of said body, and arranged transversely to the direction of movement thereof, and means for delivering pulverized ore or other material to the opposite surface adjacent to the first magnet of the series, substantially as described. 6th. The combination, in a magnetic separator, of a movable body, with a transverse series of magnets mounted on one side thereof having their poles adjacent to one surface of said movable body, said magnets being in different planes successively, and means for delivering material to be treated against the opposite surface of the movable body and adjacent to the first magnet, substantially as described. 7th. The combination, in a magnetic separator, of a movable body, a series of magnets arranged transversely to the direction of movement of said body on one side thereof, means for delivering the material to be treated to the opposite side of the movable body and adjacent to the first magnet of the series, and means for removing the iron or other material from the last magnet of the series, substantially as described. 8th. The combination, in a magnetic separator, of a belt passing around and movable on suitable rollers, a transverse series of magnets mounted behind one side of said belt with poles adjacent thereto, and means for delivering the pulverized material to be treated against the belt, and adjacent to the first magnet of the series, substantially as described. 9th. The combination, in a magnetic separator, of a belt movable on suitable rollers, a transverse series of magnets mounted behind one side of said belt with poles adjacent thereto, the several magnets being in different horizontal planes, and means for delivering the material to be treated against the opposite surface of the belt and adjacent to the first magnet, substantially as described.

No. 42,037. Propelling Mechanism for Electric Vehicles. (*Mécanisme de propulsion pour voitures électriques.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. The combination of a rotating shaft on a vehicle, a reciprocating pitman connecting to the shaft and to a pivoted frame supporting the head or pivot pin of the propelling rods, and means for raising and lowering said head, whereby the speed may be varied while the vehicle is in motion without changing the speed of rotation of the shaft, substantially as described. 2nd. The combination of a reciprocating pitman connected to a pivoted frame supporting the head and pivot pin of the propelling rods, a screw connected to said head and longitudinally movable, and means for changing the position of said screw, whereby the speed of the driven mechanism may be varied without changing the speed of rotation of the shaft, substantially as described. 3rd. A propelling clutch which consists of a wheel and shoes on either face of the rim thereof, said shoes being loosely pivoted to one end of an arm, the other end being loosely connected to the outer extremity of a radial arm, which is reciprocated by the motor, substantially as described. 4th. The combination in a propelling clutch, of a wheel, a gripping device for the wheel at one end of an arm, the other end being connected to the outer extremity of a radial arm, and a reciprocated controlling rod between radial arm and the motor, substantially as described. 5th. The combination in a propelling clutch, of a wheel, arms extending across the wheels, and having gripping devices bearing on the wheel rim, radial arms reciprocated by the motor and connected to the opposite end of the first mentioned arms, and springs for controlling the grip carrying arm, substantially as described. 6th. The combination in a reversible propelling clutch, of a wheel, gripping devices embracing the rim of the wheel on opposite sides, reciprocating arms carrying said gripping devices, springs

connected to said arms for pulling them in one direction or the other, thereby gripping the rim when moving in one direction but not in the other, and means for reversing the tension of the springs, substantially as described.

No. 42,038. Game. (*Jeu.*)

James Gamble, New York, State of New York, assignee of Harry J. Saxton, St. Louis, Missouri, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. A hermetically sealed receptacle containing dice and filled with a fluid having a greater specific gravity than the dice located in said receptacle, substantially as set forth. 2nd. A hermetically sealed receptacle filled with a liquid, and dice located in said receptacle, substantially as set forth. 3rd. A hermetically sealed dice box filled with a liquid, dice located in said box, and devices located in the same for disturbing the passage of said dice through said liquid, substantially as set forth. 4th. The herein described apparatus for playing dice and similar games, comprising a hermetically sealed receptacle pivotally mounted in a stand, liquid contained in said receptacle, and means for holding the same in a vertical position when it is desired not to revolve the same, substantially set forth. 5th. The herein described apparatus for playing dice and similar games, which consist of a stand, a hermetically sealed receptacle pivotally mounted on the same, wires or similar devices passing through said receptacle, liquid contained in the same, a clamping device for holding said receptacle in a vertical position when desired, and dice or similar symbols of similar games located in said receptacle, substantially set forth. 6th. The herein described apparatus for playing dice and similar games, comprising a hermetically sealed receptacle provided with transparent ends, liquid contained in said receptacle devices located in the same for disturbing the passage of the dice through said liquid when said receptacle is revolved, and means for holding said liquid in a vertical position when desired, substantially as set forth.

No. 42,039. Apparatus for the Treatment of Nickel Matts. (*Procédé de traitment de la matte de nickel.*)

The Canadian Copper Company, Cleveland, Ohio, U.S.A., assignee of Jules Garnier, 14 Rue de Berlin, Paris, France, 18th February, 1893; 6 years.

Claim.—1st. In the treatment of nickel matts containing copper and other metals, the method which consists in slowly cooling or annealing matts having a base of copper, nickel and iron, or of copper and nickel, whereby the sulphur and copper, which have a superior affinity for one another, become concentrated by reason of a peculiar molecular phenomenon, and leave the metals, nickel and iron or nickel alone in a free state. 2nd. In the treatment of nickel matts containing copper and other metals, the mechanical and magnetic separation of the parts of the matt, rich in copper and sulphur from that in which the nickel and metallic iron have collected. 3rd. Utilizing the metallic nickel and iron separated from the remainder of the matt as herein specified for the precipitation by cementation of the copper in its solutions containing nickel. 4th. The employment of the oxides of nickel and iron resulting from the calcination of their salts after the separation of the copper by cementation, for the manufacture of ferro-nickels either in a basic cupola or Siemens basic furnace, and also the employment under the same conditions for obtaining alloys of nickel and copper, of the oxides of nickel and copper resulting from the roasting of the matt after the elimination of the iron. 5th. The employment of the oxides of nickel and iron referred to in the preceding clause for obtaining unmelted metallic particles of nickel and iron wherewith to effect the cementation of copper in liquors containing copper and nickel in solution. 6th. The arrangement of converter (for use in the treatment of nickel matts containing copper and other metals) as herein described and illustrated in the drawings having upwardly directed tuyers around a portion only of its circumference. 7th. The combination for operating the said converter, of a steam cylinder and piston and hydraulic brake, substantially as specified. 8th. The combination with the converter (employed for the treatment of nickel matts containing copper and other metals) of an air jacket through which the blast is circulated before entering through the tuyers. 9th. In the treatment of nickel matts containing copper and other metals, the successive operations in a converter, having a silicious lining for eliminating the iron from the matt, and in a converter lined with magnesia, dolomite, lime or chrome iron for completing the refining and obtaining on the one hand an alloy of copper and nickel very rich in copper, and on the other hand, of an extra basic slag very rich in nickel oxide, which is afterwards treated as described. 10th. In the treatment of nickel matts containing copper and other metals, the treatment of the matt after elimination of the iron in a Siemens furnace, and with the aid of a blast, as specified. 11th. The employment for the precipitation of copper in solution with salts of nickel of the crude alloys from the acid converter or basic converter or furnace, said alloys but slightly sulphurous, being very finely granulated and acting in hot and concentrated liquors. 12th. The method of treatment of matts containing gold and platinum, which consists in passing them first into a silicious converter for the purpose of eliminating the iron, and secondly, into a basic converter or on to a basic hearth and then blowing to remove the nickel and then separating by electrolysis the copper from the platinum and gold which fall down on the mud.

No. 42,040. Check Valve for Chimney Flues.

(*Soupape de sûreté pour tuyaux de cheminée.*)

Robert James Stead and James Watt, both of Lanark, Ontario, Canada, 18th February, 1893; 6 years.

Claim.—1st. In a chimney valve, the combination, of a flat rim A, having an opening corresponding to but smaller than the flue, a casing B, on the underside of said rim set back from the edge of the opening therein and fitting against the faces of the flue, two flaps or gates C and D, one perforated and the other plain, and each pivoted at one edge in an angle of the rim and casing, so as to cover the opening in the rim when raised independently of the other, and having its pintle or axle *c*, *d*, prolonged and then turned sideways to form a lever c^1, d^1, and then provided with a chain or cord C^1, D^1, substantially as set forth. 2nd. In a chimney valve, the combination, of a flat rim A, having an opening corresponding to, but smaller than the flue, a casing B, on the underside of said rim, set back from the edge of the opening therein and fitting against the faces of the flue, two flaps or gates C and D, one perforated and the other plain, and each pivoted at one edge in an angle of the rim and casing so as to cover the opening in said rim when raised and independently of the other, and having its pintle or axle *c*, *d*, prolonged and then turned sideways to form a lever c^1, d^1, substantially as set forth.

No. 42,041. Car Brake. (*Frein de chars.*)

Peter McMullen and Michael Callahan, both of Buffalo, New York, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. A brake mechanism for railway cars, consisting of a frame work secured to the upper side of the truck and extending over the wheels, levers pivoted to the frame work, brake shoes pivoted to the levers over the wheels and located for bearing down contact with the upper portion of the tread of the wheels, the upper ends of the levers being connected together and operated from the source of power, substantially as shown and for the purpose stated. 2nd. A brake mechanism for railway cars consisting of the two sets 55 and 55, of side pieces secured to the cross beam on the upper side of the truck, the levers 10, pivoted to the securing bolts 11, the brake shoes 17, pivoted in a recess of the levers 10, so as to have frictional contact with the upper part of the wheel, the connecting rod 12, with turn buckle 13, and the yoke 14, pivoted to the brake mechanism and connected to the source of power, all combined and operating, substantially as shown and described.

No. 42,042. Stand for Tea Pots.

(*Trépied pour théières.*)

John Woodford Mealey, assiguee of John Mealey, both of Somerset, Nova Scotia, Canada, 18th February, 1893; 6 years.

Claim.—1st. The arrangement of the holes B, in the centre piece E, in combination with the blank part of the rim A, for heating purposes. 2nd. The arrangement of the holes C, in the rim A, in combination with the holes in the centre piece E, for cooling purposes. 3rd. The arrangement of the centre piece E, in the middle of the rim A, substantially as and for the purpose herein before set forth.

No. 42,043. Ore Sampling Machine. (*Appareil à échantillonner les minerais.*)

The Bridgeman Manufacturing Company, Chicago, Illinois, assignee of Henry Le Roy Bridgeman, Blue Island, Illinois, U.S.A, 18th February, 1893; 6 years.

Claim.—1st. In an ore sampler, the combination with the feed, of apportioning mechanism below the feed, operating, automatically, to divide from the mass, as it is fed to the machine, two or more samples, to subject one or more of those samples, separately, to redivision, and to discharge the ultimate samples, separately from the machine, substantially as described. 2nd. In an ore sampling machine, the combination with the feed, of apportioning mechanism below the feed, operating, automatically, to divide from the mass, as it is fed to the machine, two or more samples, to subject each of those samples, separately, to redivision, and to discharge the ultimate samples, thus obtained, separately from the machine, substantially as described. 3rd. In an ore sampler, the combination of a feed, a rotary support carrying, below the feed, an annular receptacle having outlets, concentric receivers below the said receptacle, and deflectors between the said outlets and receivers for dividing and directing the ore from the receptacle, to the receivers, substantially as described. 4th. In an ore sampling machine, the combination with a feed and stationary collector below it of two or more moving and co-operating apportioning devices between the feed and collector, substantially as described. 5th. In an ore sampler, the combination with a feed and a stationary collector below it, of two or more rotary co-operating apportioning devices between the feed and collector, substantially as described. 6th. In an ore sampler, the combination with the feed and stationary collectors below it, of a rotary apportioning device divided circumferentially and radially into compartments having outlets leading to the collectors, and a rotary apportioning device H, above the first named apportioning device, comprising an annular trough below the feed and having a series of outlets terminating over the compartments in the lower apportioning device, substantially as described. 7th. In an ore sampler, the combination with a feed

and a stationary collector below it of two or more intermediate co-operating apportioning devices rotating successively in opposite directions, substantially as described. 8th. In an ore sampler, the combination of a feed regulator, as the rotary spiral blade I^1, stationary collectors below the said regulator, and one or more intermediate co-operating apportioning devices, substantially as described. 9th. In an ore sampler, the combination with feed, of a rotary apportioning device H having an annular trough H^1, below the feed, provided with outlet openings i^1, an apportioning device below and rotating a direction contrary to the device H, and provided with outlets at varying distances from its centre, and describing in the rotation of the said lower device, concentric circles, a series of spouts h, extending from the openings i^1, and terminating, respectively, in concentric planes over the paths of the outlets in the said lower device, and annular concentric collectors below the paths of the outlets in the said lower apportioning device, substantially as described. 10th. In an ore sampler, the combination with the feed, of a rotary apportioning device H, having an annular trough H^1, below the feed, provided with outlet openings i^1, an apportioning device below, and rotating in a direction contrary to the device H, and divided circumferentially and radially into compartments q, n and m, the compartments m and n rotating in planes concentric with each other, and all the compartments having outlets described in the rotation of the lower said device, circles concentric with each other, a series of spouts h, extending from the openings i^1, and terminating, respectively, in concentric planes over the paths of the compartments in the lower said device, and annular concentric collectors below the paths of the outlets of said compartments, substantially as described. 11th. In an ore sampler, the combination with the feed, of a rotary apportioning device H, having an annular trough H^1, below the feed and divided into a series of hopper shaped compartments i, having outlets i^1, an apportioning device below and rotating in a direction contrary to the device H, and provided with outlets at varying distances from its centre, and describing in the rotation of the said lower device, concentric circles, a series of spouts h, extending from the openings i^1, and terminating, respectively, in concentric planes over the paths of the outlets in the said lower device, and annular concentric collectors below the paths of the outlets in the said lower apportioning device, substantially as described. 12th. In an ore sampler, the combination of the co-operating apportioning devices H and F, rotating in the same direction, and intermediate co-operating apportioning device G, rotating in the contrary direction, and stationary collector A^4, below the device G, substantially as described.

No. 42,044. Feed Water Heating and Purifying Apparatus. (*Réchauffeur et épurateur de l'eau d'alimentation.*)

Daniel Washington McCallum, Fort Worth, Texas, and Jules A. Randle, Monterey, Mexico, 18th February, 1893; 6 years.

Claim.—1st. The combination with a locomotive boiler having at one end a combination chamber or smoke arch, of a water heating tank, having a top wall bearing against and supporting the combustion chamber or smoke arch, a feed water pipe opening into the tank, and exhaust steam pipes leading from the locomotive cylinders, extending through the water tank and opening into the combustion chamber or smoke arch, substantially as described. 2nd. The combination with a locomotive boiler having at one end a combustion chamber or smoke arch containing a water heating tank, of a feed water receiving tank located in juxtaposition to the combustion chamber or smoke arch, a pipe connecting the said feed water receiving tank with the water heating tank in the combustion chamber or smoke arch, and exhaust steam pipes leading from the locomotive cylinders, extending through the feed water receiving tank, and opening into the combustion chamber or smoke arch, substantially as described. 3rd. The combination with a boiler having at one end a combustion chamber or smoke arch, of a series of water heating tanks arranged in the combustion chamber or smoke arch, and having pipe connections with each other, a feed water receiving tank located in juxtaxposition to the combustion chamber or smoke arch and provided with a feed water pipe, a pipe connection between the feed water receiving tank and one of the water heating tanks, and exhaust system pipes leading from the locomotive cylinders into the feed water receiving tank and communicating with the combustion chamber or smoke arch, substantially as described. 4th. The three water tanks B, C, D, of boiler metal, constructed with rounded bottoms, man holes at the front side, and arranged in the combustion chamber or smoke arch one above the other, and connected each with the other by means of pipes, the upper tank D being connected with the boiler, substantially as described.

No. 42,045. Cement for Roofing Purposes.

(*Ciment pour toîtures.*)

George W. Reed, of Montreal, Quebec, Canada, assignee of Charles Torrey Williams, of Montreal aforesaid, 18th February, 1893; 6 years.

Claim.—A plastic roofing cement, having as a base Trinidad asphalt and petroleum residuum with or without the addition of an absorbent, for the purposes mentioned.

No. 42,046. Bobbin Support for Spinning Mules.

(*Support de bobine pour mull-jenny en fin.*)

Thomas Clark Dill, Philadelphia, Pennsylvania, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. The combination, in a mule, of the drum, the spool, a pivoted lever for taking part of the weight of the spool, an upright E, to which said lever is hung, and a bracket E^1, the said upright being vertically adjustable on said bracket, substantially as set forth. 2nd. The combination, in a mule, of the drum, the spool mounted thereon, guides for said spool, and levers for supporting said spool, and relieving the driving drum of the full weight of said spool, substantially as described. 3rd. The combination, in a mule, of the driving drum, the spool mounted thereon, guides therefor, a pivoted lever, one arm of said lever passing under the trunnions of the spool, a spring connected to the other arm of the lever and in such relation to the pivot of said lever that as the yarn is drawn off from the spool, the leverage of the spring will be decreased, substantially as described. 4th. The combination, of the drum B, the spool D, mounted thereon, standard C, for guiding the spools, levers G, uprights E, to which the levers are pivoted, the long arm of each lever passing under the trunnions of the spools, springs connected to the short arms of each lever, and to the uprights and adjustable so as to alter the amount of tension, substantially as described. 5th. The combination, of the drum, the spools mounted thereon, the standards guiding said spools, the levers for supporting the spools, uprights upon which the levers are mounted, a spring connected to the short arm of the lever, an abutment for the short arm of the lever and mounted upon the spring, so that when the lever is relieved of the weight of the spool it will be cushioned by its spring, substantially as described. 6th. The combination, in a mule, of the drum and spool, with mechanism for sustaining part of the weight of the spool in such a manner that the spool will at all times have a given bearing upon the drum, substantially as and for the purpose described.

No. 42,047. Method of Elevating Liquids.

(*Pompe à air hydraulique.*)

Julius Godfrey Pohle, New York, State of New York, U.S.A., 18th February, 1893; 6 years.

Claim.—1st. As an improvement in the art of elevating liquid, the process which consists in submerging a portion of an open ended eduction pipe in a body of the liquid to be raised and continuously introducing into the liquid, within the lower part of the pipe a series of bubbles or compressed gaseous fluid containing enough of the fluid to expand across the pipe and fill the same from side to side, forming pipe fitting piston, like layers at or just above the point of their entrance into the pipe, whereby the column of liquid rising in the pipe, after the forcing out of the liquid first standing in the latter is subdivided by the gaseous fluid into small portions, before it reaches the level of the liquid outside of the pipe, and a continuously upward flowing series of well-defined alternate layers of gaseous fluid and short layers of liquid, is formed and forced up the pipe, substantially as and for the purpose specified. 2nd. As an improvement in the art of elevating liquid, the process which consists in submerging in the body of liquid to be raised, a portion of an open ended eduction pipe having an enlarged chamber on its lower end, and continuously injecting into such enlargement well below its upper end, gaseous fluid, under pressure to form bubbles in the pipe above the enlargement, large enough to extend across from side to side of the pipe proper, and form pipe fitting piston like layers therein, interposed between and entirely separating well-defined layers of liquid in the pipe, substantially as and for the purpose described. 3rd. As an improvement in the art of elevating water or other liquid, the process which consists in submerging a portion of an open ended pipe in a body of the liquid to be raised, removing the upper portion of the column of liquid within the pipe and injecting into the latter at a point well below the level of the liquid in which the pipe is submerged gaseous fluid in quantity sufficient to form bubbles which will expand immediately across the pipe and fill the same from side to side, and under pressure less than the weight of the column of liquid in the pipe extending from the point of the entrance of the gaseous fluid to the level of the body of liquid surrounding the pipe, so that a continuous upward moving series of alternate well-defined gaseous fluid and liquid layers will be formed in and forced up the pipe, substantially as and for the purpose described.

No. 42,048. Process of and Apparatus for the Electrolytic Decomposition of Alkaline Salts. (*Procédé et appareil pour la décomposition électrolytique des sels alcalins*)

Hamilton Young Castner, London, England, 18th February, 1893; 6 years.

Claim.—1st. In a process for the electrolytic decomposition of alkaline salts, the employment of a moving body, of a liquid metal or alloy to separate the anode and cathode compartments of the decomposition cell, and through which body of liquid metal or alloy the current passes. 2nd. In a process for the electrolytic decomposition of alkaline salts, the employment of a liquid metal or alloy in the decomposing cell for the purpose of carrying the alkaline metal from the anode to the cathode compartment. 3rd. In a process for the

electrolytic decomposition of alkaline salts employing a body of liquid metal or alloy circulating between the two compartments of the decomposing cell through which the current is made to pass and so placed as to act both as an anode and cathode. 4th. In a process for the electrolytic decomposition of alkaline salts, the employment of a cell not only provided with the usual anode and cathode, but also with a body of moving liquid metal or alloy into, through and from which the alkaline metal is made to pass by combined electrical and mechanical means. 5th. In a process for the electrolytic decomposition of alkaline salts, the employment of a body of liquid metal or alloy to prevent any recombination of the final products of the electrolysis. 6th. In a process for the electrolytic decomposition of alkaline salts, the utilization of the electrical energy stored in amalgams or alloys produced during said process to reduce the counter electromotive force necessary for the production of such alloys amalgams. 7th. In a process for the electrolytic decomposition of alkaline salts, employing the electric current for decomposing the alkaline amalgams or alloys produced therein. 8th. In a process for the electrolytic decomposition of alkaline salts, the continuous production and decomposition of an alkaline amalgam or alloy by the electric current, ensuring the presence of the alkali metal in such amalgam or alloy by the aid of a supplementary current passing through the anode compartment or otherwise, substantially as specified. 9th. In an electrolytic apparatus, the combination with the anode and cathode compartments, of a body of liquid metal or alloy forming part of the electrical circuit and capable of being moved from one compartment to the other, substantially as set forth. 10th. In an electrolytic apparatus, the combination with the anode and cathode compartments, of a body of metal or alloy forming part of the electrical circuit with means for mechanically causing such liquid metal or alloy to circulate between the said compartment, substantially as set forth. 11th. In an electrolytic apparatus, the combination of an anode and cathode, with a moving body of liquid metal or alloy so placed as to separate the materials either placed or being produced in the two compartments of the decomposing cell, substantially as set forth.

No. 42,049. Process of Solidifying Oils and Fluids.

(*Procédé pour solidifier les huiles et fluides.*)

William Snell Chenhall and William Francis Snell Chenhall, both of London, England, 18th February, 1893; 6 years.

Claim.—1st. The hereinbefore described composition of matter designated solidified petroleum, solidified oil or solidified fluid, consisting of 650 lbs. (more or less) of oil or fluid, 250 lbs. (more or less) of alkali and 90 lbs. (more or less) of resin combined and consolidated by heating, with or without subsequent pressure. 2nd. The hereinbefore process for solidifying petroleum, solidifying oil or solidifying fluid, consisting in mixing and stirring together oil or fluid, alkali and resin in the respective quantities specified, heating the mixture at two temperatures, first, till the alkali and resin are dissolved, and, secondly, till the mixture is of the consistence of dough.

No. 42,050. Smoke Consuming Furnace.

(*Foyer fumivore.*)

Daniel Webster, Gerome L. Cross and W. D. McKenzie, assignees of William Daniel McKenzie, assignee of George Karl Geiger, all of Springfield, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a smoke consuming furnace, the combination with a box set at the bridge wall, having perforations through its top, of one or more pipes leading for air conduct from outside of the furnace, and having sections thereof disposed in the combustion chamber at the rear of the bridge wall, and connected with said box, substantially as described. 2nd. In a smoke consuming furnace, in combination, a metal box set at the bridge wall, having a series of perforations through its top, upright pipes set at the sides of the furnace chamber, and connected to said box, and having series of perforations through their inwardly faced walls, and an air supply pipe leading from outside of the furnace to, and having sections thereof disposed in the combustion chamber and communicating with the chamber of said box, substantially as and for the purpose set forth. 3rd. In a smoke consuming furnace, the combination with the step formed bridge wall, and the side walls vertically recessed, of a metallic box set back of the riser portion of the bridge wall, having a series of perforations through its top, the upright pipes set in said side recesses and connected at their lower ends to the box, and having the inwardly directed perforations, and the air supply pipes leading from outside of the furnace chamber to and having portions thereof disposed within the combustion chamber, and forwardly extended to communicate with the said box, substantially as described. 4th. In a smoke consuming furnace, the combination, with the metal box set at the bridge wall, having a series of perforations through its top and apertures through its end walls, of the upright pipes set at the sides of the furnace with perforations through their inwardly faced walls, and having the angular members at their lower ends for an adjustable fit and engagement in said end apertures of the box, and the supply pipes, which lead from the outside of the furnace, and have portions thereof in the combustion chamber, and thence extended to communication with the box chamber, substantially as described. 5th. In a smoke consuming furnace, the combination with a bridge wall, provided at its forward portion with the guard riser and the hollow metallic box located at the top of the bridge wall behind said guard riser, and having the perforated top and centrally of its rear side the hand opening and closure therefor and the combustion chamber at the rear of the bridge wall, of two pipes passing rearwardly from the front and at each side of the furnace, through the ash pit and under the bridge wall, and having return bent sections disposed, the one upon the other in the rear of the closed combustion chamber and thence extended to a communication with the said box, and the said pipes at their ends at the front of the furnace, provided with the outwardly flaring funnels, the axes of which are angular to the pipes, and said funnels being adjustable on the pipes, substantially as described, for the purposes set forth.

No. 42,051. Machine for Sewing Shank Buttons to Fabrics. (*Machine pour coudre les boutons à queue aux étoffes.*)

Walter Ellis Bennett, Boston, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a machine for sewing shank buttons to fabric, a button holder having a button socket in its end to one side of its axis, and receiving buttons therein one after another directly from the button trough, said holder being supported in a plane at right angles to the needle movement, and having an oscillating and an endwise movement, combined with mechanism, substantially as described, for imparting said rocking and endwise movements to said holder, substantially as set forth. 2nd. In a machine for sewing shank buttons to fabric, a button holder having a button socket in its end to one side of its axis, and receiving buttons therein one after another directly from the button trough, said holder being supported in a plane at right angles to the needle movement, and having an oscillating and an endwise movement, a needle having reciprocating endwise movements opposite the end of said holder, and vibratory movements across the axis thereof, a loop hook having movements towards and from the side of said holder, and vibratory movements parallel with the axis thereof, combined with mechanism, substantially as set forth, for imparting the described movement to said button holder, needle and loop hook, substantially as set forth. 3rd. In a machine for sewing shank buttons to fabric, a needle having the usual reciprocating movements and carrying a thread loop through the fabric, combined with a loop hook having a vibratory movement in a plane parallel to the side of said needle and engaging a loop carried thereby, and a movement towards and from the side of said needle, and mechanism, substantially as described, for operating said needle and loop hook, substantially as set forth. 4th. In a machine for sewing shank buttons to fabric, a button holder having a button socket in its end to one side of its axis, and receiving buttons therein one after another directly from the button trough, said holder being supported in a plane at right angles to the needle movement, and having an oscillating and an endwise movement, combined with a button trough under and in contact with the lower end of which said holder has an oscillating motion, thus serving to receive and manipulate buttons for presenting them to sewing devices, and as a gate at the end of said trough, substantially as set forth. 5th. In a machine for sewing shank buttons to fabric, a button holder having a button socket in its end to one side of its axis to receive the head only of a button, and having a notch in one side thereof through which the shank of a button so received protrudes beyond the end of said holder towards the needle of the machine, and having an oscillating and an endwise movement, combined with mechanism, substantially as described, for imparting said oscillating and endwise movement to said holder, substantially as set forth. 6th. The button holder having a button socket in its end to one side of its axis, to receive a button directly from the button trough, and having a pinion 5, in the shaft thereof, combined with a rocking and an endwise moving shaft 31, an arm 30, secured on said rock shaft, having a geared segment thereon engaging with the face and ends of said pinion, and mechanism, substantially as described, for actuating said shaft 31, substantially as set forth. 7th. The rock shaft 37, a loop hook 36, and a pinion 40, fixed on said shaft, a cam slot plate 42, fixed on a bearing of said shaft, a stud fixed in said rock shaft and projecting into said cam slot, an endwise reciprocating rack bar engaging with said pinion, and mechanism, substantially as described, for actuating said rack bar, substantially as set forth.

No. 42,052. Machine for Sewing Shank Buttons to Fabrics. (*Machine pour coudre les boutons à queue aux étoffes.*)

Walter Ellis Bennett, Boston, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a sewing machine, a thread, carrying needle and operating mechanism, substantially as described, combined with an intermittently and reciprocally rotating and endwise moving loop hoop having prongs thereon for successively engaging the several loops of thread carried by the needle, and mechanism, substantially as described, for imparting said movements to the loop hook, substantially as set forth. 2nd. In a machine for sewing shank buttons to fabric, a button trough, a button gate having an intermittent and reciprocatory rotary motion under the end of said trough, a button clamp supported at, and having a movement toward and from one

end of said gate and moving therewith, and mechanism substantially as described, for rotating said gate and for moving said clamp, combined and operating substantially as set forth. 3rd. The button clamp fixed on the side of a hollow shaft having a slot therethrough, the button gate fixed on the end of a shaft within said hollow shaft, a pinion located and having a limited oscillating movement on said hollow shaft, and secured to said button gate shaft by a screw passing through said slot, and mechanism substantially as described, engaging with said pinion whereby it is given intermittently reciprocating rotary motions, combined and operating substantially as set forth. 4th. The button clamp having a slide, and a recessed lip extending at right angles therefrom, a button ejecting lever pivoted thereon having one end extending inwardly into the recess in said lip, combined with a fixed spring whose free end engages the outer end of the said lever when said clamp moves away from the material on which a button has been sewed, substantially as set forth. 5th. The loop hook, a shaft to which said hook is secured, a pinion fixed on said shaft, a fixed rack with which said pinion engages, a vibratory support for said shaft and mechanism substantially as described for imparting intermittent vibratory motions to said shaft support, and intermittently reciprocating movements thereto in the line of the axis of said shaft, substantially as set forth. 6th. The needle bar holder having a hollow hub thereon on which is a laterally extending arm, a rock shaft passing through said hub and supporting said holder, a cam lever hung on said shaft having parallel arms thereon extending on opposite sides of said laterally extending arm and having an adjustable interlocking engagement therewith, and a revolving cam engaging with said cam lever whereby vibratory motions are imparted to said needle holder, combined and operating, substantially as set forth. 7th. The vibratory needle bar holder, a fending cam lever hung on the frame of the machine, a cam rotating in engagement with said lever, a throw adjusting arm pivoted on said holder, and having its free end engaged by, and adjustable towards and from the pivot stud of said cam lever, and means substantially as described, for adjusting said lever, combined and operating, substantially as set forth. 8th. The needle bar holder, having a needle bar groove therein, and a slot in the base of said groove, combined with a needle bar operating in said groove, and having a pin thereon extending through said slot, a rotating cam, a cam lever having an arm engaging said pin, and a second arm engaging said cam, and a shaft supporting said cam lever, substantially as set forth. 9th. The button clamp, the button ejecting lever pivoted thereon, having one end extending inwardly to the base of said recess, and a spring bearing on said lever inside of its pivot, combined and operating, substantially as set forth. 10th. The hollow shaft 35, having a slot therethrough, the button clamp fixed on said shaft, the button gate fixed on shaft 33, within shaft 35, a pinion 38, located and having a limited oscillating movement on said hollow shaft, and secured to said button gate shaft by a screw passing through said slot, a fictionally acting retaining spring bearing on said hollow shaft, and mechanism substantially as described, engaging with said pinion whereby it is given intermittently reciprocating motions, combined and operating, substantially as described. 11th. In combination, the vibrating needle bar holder, the arm 53, pivoted thereon having a worm segment thereon, a worm shaft engaging with said segment, the pivoted cam lever 56, and a cam operating to swing said lever, substantially as set forth. 12th. The combination, with the slotted presser foot 27, of a thread cutter 31, secured thereto, having a cutting edge extending across said slot, substantially as set forth. 13th. The needle bar holder 51, having the laterally extending arm w, on the hub thereof, the shaft J, passing through said hub, the spring 52, engaging under said arm, and the regulating screw r, engaging the upper side thereof, combined and operating, substantially as set forth. 14th. In a machine for sewing shank buttons to fabric, a button trough, a button gate having an intermittently reciprocating rotary motion under the end of said trough, a button clamp supported at, and having a movement towards and from one end of said gate and moving therewith, combined with an intermittently and reciprocally rotating, and endwise moving loop hook having prongs thereon for successively engaging the several loops of thread carried by the needle, a thread carrying needle having an endwise reciprocating and vibratory movement between said button gate and clamp and the end of said loop hook, mechanism substantially as described, for rotating said gate and clamp, and for imparting said movements to said loop hook and to said needle, substantially as set forth. 15th. In a machine for sewing shank buttons to fabric, a thread carrying needle, a button clamp holding a button near said needle, a rotating loop hook engaging the thread carried by said needle, and drawing a loop therefrom at the side of said clamp, combined with a lever pivoted thereon having its inner end reaching under said button, and mechanism substantially as described, for opening said clamp, and imparting a vibratory motion to said lever whereby its said inner end is moved against said button, thereby ejecting the same from said clamp and throwing it through said loop, and for rotating said loop hook, substantially as set forth.

No. 42,053. Bed for Invalids. (*Lit d'invalide.*)

Joachim Eggert, Burg, Fehmarn, Prussia, 20th February, 1893; 6 years.

Claim.—1st. An invalid bed with movable bottom arranged to open for the purpose of enabling a bed pan to be used, substantially as described with referenee to the accompanying drawings. 2nd. An invalid bed comprising a slide s moving on rollers r and opened or closed by a handle g, or by a handle R, pinions z and racks y, a projection n on the slide for conveying a bed pan, a cloth t, which forms the false bottom, and two rollers w, and v, the cloth sliding over the rollers, and being held taut by cross pieces q and d, substantially as herein described. 3rd. An invalid bed comprising a slide s^1, moving between the cross piece h^1, and the guides l^1, the upper end of the slide forming the movable bottom of the bed, substantially as described with reference to the accompanying drawings.

No. 42,054. Electric Railway.

(*Chemin de fer électrique.*)

Granville Taylor Woods, New York, State of New York, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. The combination of a conduit, the leads or main conductors, the contact boxes located in the conduit, insulated contacts arranged therein, and a connection between one of said contacts in each box, and one of the main conductors, the contacts in each box being normally separated, but adapted to be brought together during the passage of the car. 2nd. The combination of a conduit, the leads or main conductors, the contact boxes located in the conduit, insulated contacts arranged therein, and a connection between one of said contacts in each box, and one of the main conductors, the contacts in each box being normally separated, but adapted to be brought together during the passage of the car and oil insulation contained in the box. 3rd. The combination of the conduit, the leads or main conductors, contact boxes arranged at intervals within the conduits, normally separated insulated contacts within each box, a connection between one of said contacts, and one of the main conductors, and a shaft carrying the other contact, and adapted to be operated during the passage of a car. 4th. The combination of the conduit, the leads or main conductors, the contact boxes arranged at intervals in the conduit, a fixed insulated contact within each box, a connection between said contact, and one of the main conductors, another contact within said box, the arm on which it is mounted, and a shaft carrying the arm, and having a projecting end adapted to be acted upon by a contact device carried by a passing car. 5th. The combination of the conduit, the leads or main conductors, the contact boxes arranged at intervals within the conduit, a contact within each box, a connection between said contact, and one of the main conductors, another contact within the box, and a shaft by which it is carried immersed in oil contained in the box, and having its bearings in the sides of the box. 6th. The combination of the conduit, the leads or main conductors, and the boxes containing oil insulation and each having contacts therein one of which is connected with one of the leads and the other adapted to be operated by a passing car, one of said contacts being a yielding contact. 7th. The combination of the conduit, the leads or main conductors, and the boxes containing oil insulation and each having contacts therein one of which is connected with one of the leads and the other adapted to be operated by a passing car, one of said contacts being a yielding contact, consisting of a strip or ribbon of metal coiled into a volute.

No. 42,055. School Bag. (*Sac d'écolier.*)

John Edward Edwards, Toronto, Ontario, Canada, 20th February, 1893; 6 years.

Claim.—1st. In a school bag, the combination, with the flap of the bag, of the carrying strap secured in position at the back of the back of the bag, the closing strap secured on the body of the bag below the closed position of the flap of the bag, and the cross bar held in the free ends of the closing straps, the carrying strap being designed to be inserted under the cross bar between the closing straps, as and for the purpose specified. 2nd. In a school bag, the combination, with the flaps of the bag, of the carrying strap secured in position at the back of the bag, the closing strap secured on the body of the bag below the closed position of the flap of the bag, the cross bar held in the free ends of the closing straps, the carrying strap being designed to be inserted under the cross bar between the closing straps and the loop F, through which the carrying strap is passed, as and for the purpose specified. 3rd. The combination, with the closing strap C, of the cross bar D, secured in the free end of the closing strap formed hollow as shown and provided with a cap d, as and for the purpose specified.

No. 42,056. Lamp Extinguisher. (*Eteignoir de lampe.*)

Max Goetze, Sturgis, South Dakota, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. A lamp extinguisher, comprising two pivotally supported and weighted gates that will inclose the upper end of a wick tube, a bowed arm one end of which is adapted to lift the gates and close them, and a bent lever extended across the burner body, that when depressed at one end will hold the bowed arm away from the gates, substantially as described. 2nd. The combination, with a lamp burner having a flat wick tube, of a two weighted pivoted gates boxed at their upper ends and adapted to inclose the top of the wick tube, a bowed spring arm embracing limbs of the gates and holding said gates normally elevated, and a bent lever holding the spring arm depressed, when pressed by a lamp chimney at one end, substantially as described. 3rd. The combination, with the body of a lamp burner and a flat wick tube therein, of two gates boxed at their upper ends, and each having two depending limbs at their

lower ends, weights on the gates, a loop shaped arm spring pressed upwardly and embracing the limbs of the gates, and a lever bent double from a wire strand and embracing the wick tube, one end portion of said lever projecting to impinge upon a lamp chimney seated on the burner body, and its other end engaging the end of the spring arm, substantially as described. 4th. The combination, with the body of a lamp burner and a flat wick tube therein of two boxed gates, weights on the gates, two depending limbs for each gate lap folded in pairs at their lower terminals, pintle arms loosely engaging the perforated lower ends of the gates, a looped lifter arm embracing the wick tube and gate limbs, spiral springs on the limbs of the lifter arm, having their terminals secured to the burner body, and a double strand lever passing across the burner body and fulcrumed therein near one upright end portion of the lever, which end portion is adapted to impinge upon the inner face of a seated lamp burner, and elevate the other end of the lever that is attached to the spring pressed arm, substantially as described.

No. 42,057. Circular Saw. (*Scie circulaire.*)

John Class, Canton, Ohio, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. The combination, with a saw plate having a socket, of an insertible tooth, a tooth holding shank have an elongated opening in the portion adjacent to the said tooth forming the spring portions *f* and *g*, and a stop for holding the tooth against inward movement, substantially as set forth. 2nd. The combination, with a saw plate, having a socket, of an insertible tooth, and a holder having the end thereof adjacent to the said tooth inclined from its outer edge inward, and an opening adjacent to the said incline, and to its inner edge to form a spring brace at its inner edge, and a yielding connection therefor at its upper end. 3rd. The combination, with a saw plate having a socket, of an insertible tooth, and a holder fitting in the socket having an elongated opening with closed ends adjacent to its inner edge and to the tooth, whereby a spring brace is formed with a yielding connection at its upper end, and a stop for the tooth, substantially as specified. 4th. The combination, with a saw plate having a socket, of an insertible tooth having a shoulder at its upper end, and a tooth holding shank having an elongated opening in the portion adjacent to the tooth, forming the spring portions *f* and *g*, substantially as set forth. 5th. The combination, with a saw plate having a circular socket, of an insertible tooth having a shoulder *i*, at its upper rear portion, a circular projection *m*, an inclined edge m^3, and a recess m^1, at its front edge, a tooth holding shank having a circular depression *d*, to take the projection *m*, a rounded projection d^1, to fit the recess m^1, an inclined edge *g*, and an elongated opening in the portion adjacent to the tooth forming the spring portions *f* and *g*, substantially as set forth.

No. 42,058. Pedal. (*Pédale.*)

William A. Holbday, Augusta, Kentuckey, U.S.A., 20th February, 1893; 6 years.

Claim.—As an improvement in adjustable pedal foot rests hereinbefore described, the combination, with the horizontal member 10, 12, of the two pendent bolts 19, 19, the detachable cross plate 20, having bolt openings as specified, and thumb nuts 21, applied to the threaded ends of said bolts all as shown and described, to operate as set forth.

No. 42,059. Device for Closing Bags.

(*Appareil à fermer les sacs.*)

Edward Charles Wild, London, England, 20th February, 1893; 6 years.

Claim.—A hinged ring provided with spikes c, upon its inside circumference in combination with hasp and padlock.

No. 42,060. Scales. (*Balance.*)

Gustave Lundberg, Logan, Utah, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. The combination with the supporting frame, of a pivoted beam carrying a revoluble and longitudinally movable gradulated cylinder, and a non-rotatable scale plate engaging with the cylinder so as to be moved therewith upon the scale beam, substantially as shown and for the purpose set forth. 2nd. The combination with a pivoted beam, of a rotary cylinder adapted to be moved longitudinally upon the beam, said cylinder carrying a non-rotatable scale plate, said plate and cylinder being suitably divided and marked to indicate the weight of an article placed on the opposite end of the scale beam from the cylinder, substantially as shown and for the purpose set forth. 3rd. The combination with a pivoted scale beam, of a rotary and longitudinally movable cylinder carrying a peripheral scale indicating weight, and a series of peripheral scales indicating the prices of predetermined quantities, and a scale plate spaced to correspond with the divisions and sub-divisions on the cylinder, said plate being adapted to move longitudinally with the cylinder, and held against rotary movement by engagement with the scale beam, substantially as shown and for the purpose set forth. 4th. In combination with a pivoted scale beam, a rotary shaft having fixedly secured thereto a cylinder, a block carried by the scale beam and provided with an aperture with which the spiral portion of the shaft engages, and a pan carried by the scale beam of sufficient weight to counterbalance the cylinder when it reaches the limit of its movement towards the scale pan, substantially as shown. 5th The combination with a supporting frame, of a scale beam pivoted thereto and provided at one end with a scale pan, and on the opposite side of the pivot with a movable cylinder, said cylinder being fixedly attached to a rotary shaft having a hand wheel, said shaft having a spiral portion for engagement with a block carried by the scale adjacent to its fulcrum, for the purpose set forth. 6th. The combination in a weighing and price scale, of a scale beam having an open frame on one side of its fulcrum, the side bars of said open frame carrying a block apertured for the reception of a longitudinally movable and rotary shaft having a spiral end portion, a graduated cylinder rigidly attached to the shaft between the side bars of the scale beam, said cylinder carrying stationary heads which are connected by plates having bent ends which engage therewith, one of said plates also engaging with one of the side bars of the scale beam to prevent the rotation of the same, and a scale plate carried so as to move longitudinally with the cylinder and be held against rotation, substantially as shown and for the purpose set forth. 7th. In combination with a scale beam fulcrumed upon a supporting frame, and provided at one end with a platform which is hung therefrom a pan mounted on the opposite end of the beam rods connected to the pan and platform, and pivoted to the supporting frame, a movable weight and price determining cylinder carried by the scale beam so as to be capable of both a rotary and longitudinally movement, substantially as shown and for the purpose set forth.

No. 42,061. Electric Signal. (*Signal électrique.*)

The Standard Electric Signal Company, assignee of William Livingston Denio, all of Rochester, New York, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In an electric signaling apparatus, the combination of a circuit extending from the central station to the sub-station, a thermostat interposed in the circuit at the sub-station, said thermostat acting to automatically open and then close the circuit, another circuit extending from the central station to the fire department, a signaling mechanism connected with the circuit leading to the sub-station, released and set in motion by the opening and closing of the circuit by the thermostat, a registering mechanism for recording the signal at the central station, a return signaling mechanism for indicating at the sub-station that the alarm has been sent in to the fire department, and suitable sub-circuits and shunts, whereby the alarm is first sent to the central station, there recorded, then sent to the fire department, and then repeated at the sub-station, as herein shown and described. 2nd. In an electric signaling apparatus, the combination of a circuit extending from the central station to the sub-station, a signaling mechanism, a shunt connected with the circuit, an electro magnet for releasing and setting in motion the signaling mechanism, said magnet being connected with the shunt connections of the circuit, whereby the signal mechanism can act upon the main line, a registering mechanism at the central station, an electro magnet for releasing said registering mechanism, another electro magnet connected with the main line for operating a local circuit, and a local circuit connecting the last named two magnets, the whole so arranged, as herein described, that the parting or other disarrangement of the wires at the sub-station, whereby the circuit is broken, will be indicated at the central station without sounding an alarm of fire, as herein shown and described. 3rd. The signaling mechanism herein described, consisting of the break wheel *n*, the spring 38, connecting therewith, the springs 11 and 12, connecting with the main line, the swinging arm 10, the springs 37 and 45, with which said swinging arm comes in contact, and the stop spring *o*, as shown and described, and for the purpose specified. 4th. The return signal mechanism consisting of the break wheel *z*, the spring 16, resting in contact therewith, the circuit closing wheel a^2, the springs 46 and 47, the swinging tongue c^2, and contact spring d^2, arranged to operate in the manner and for the purpose specified. 5th. The combination, with the registering wheel *w*, driven by clock work, and the escapement arm *v* for controlling the same, of the perforating arm *r*, the magnet *s*, armature *t*, and swinging detent *u*, the detent swinging inward, locking the armature and holding the same when drawn up to the magnet and releasing the escapement arm, as specified. 6th. The manual signal E, consisting of an electro magnet and armature, the swinging arm k^2, the bar 53, the cross springs 51*x* and 52*x*, and the circuit breaking arm n^2, as shown and described, and for the purpose specified. 7th. The combination, with the circuit breaking arm n^2, and cross springs 51*x* and 52*x*, of the chain o^2, attached to the circuit breaking arm, and the glass tube p^2, attached to the bottom of the manual signal box and inclosing the chain, as shown and described, and for the purpose specified.

No. 42,062. Electric Motor Car.

(*Char à moteur électrique.*)

William Robinson, Boston, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a railway car or truck, the combination, substantially as described, of a swivelling axle frame, an axle frame adapted to move transversely relatively to the main truck or car frame, and bars or brackets rigidly secured to said axle frames and adjustably connected to each other, one of said bars or brackets being provided with a pivotal bearing engaging in a longitudinal bearing or slot in the other bar or bracket, whereby flexible movement, without strain, is provided for between said swivelling and transversely moving

axle frames. 2nd. In a railway car or truck, the combination, substantially as described, of an axle frame adapted to move transversely relatively to the main truck or car frame, an axle frame swivelling on an axis located betwen the axles of said swivelling and transversely moving axle frames, and bars or brackets rigidly secured, respectively, to said swivelling and transversely moving axle frames, said bars being adjustably connected together and adapted to allow the relative elongation and contraction of said bars or brackets when said axle frames change position relatively to each other. 3rd. In a railway car or truck, the combination, substantially as described, of two axle frames swivelling on axis located respectively between the axles of said frames and the centre of said car or truck, an axle frame located between said swivelling axle frames and movable transversely relatively to said car or truck frame, and independent bars or brackets secured to said axle frames, the brackets of the adjacent axle frames being connected together adjustably, and adapted to elongate and contract relatively to each other. 4th. In a railway car or truck, the combination, substantially as described, of an axle frame adapted to move transversely relatively to the main truck or car frame, an axle frame swivelling on an axis located between the axles of said swivelling and transversely moving axle frames, and independent bars or brackets secured to said swivelling and transversely moving axle frames, said independent brackets being adjustably connected together at a point located midway, or nearly so, between said transversely moving axle and the swivelling point of said swivelling axle frame. 5th. In a motor car or truck, the combination, substantially as described, of the main frame, the driving axle and wheels, and a motor arranged to drive the same, said motor and axle being movable together in a horizontal plane relatively to said main frame. 6th. In a motor car or truck, the combination, substantially as described, of the main frame, a driving axle with its wheels, and a motor arranged to drive the same, said motor and axle being arranged to swivel around a vertical axis, relatively to said main frame. 7th. In a motor car or truck, the combination, substantially as described, of the main frame, an axle or axles having a lateral or swivelling motion around a vertical axis relatively thereto, a driving axle with its wheels and a motor arranged to drive the same, said driving axle and motor being movable transversely relatively to said main frame. 8th. In a motor car or truck, the combination, substantially as described, of the main frame, the driving axle with its wheels, a motor arranged to drive the same, and mechanism supporting said motor, said mechanism being arranged to permit or cause the joint movement in a horizontal plane, of said motor and axle, relatively to said main frame. 9th. In a motor car or truck, the combination, substantially as described, of the main frame, a driving axle with its wheels, a motor arranged to drive the same, and mechanism supporting said motor, said mechanism being arranged to permit or cause the joint swivelling movement of said motor, and axle around a vertical axis, relatively to said main frame. 10th. In a motor car or truck, the combination, substantially as described, of the main frame, an axle or axles having a lateral or swivelling motion around a vertical axis, a driving axle with its wheels, a motor arranged to drive the same, and mechanism supporting said motor, said mechanism permitting or causing the joint transverse movement of said motor, and axle relatively to said main frame. 11th. In a motor car or truck, the combination, substantially as described, of two driving axles with their wheels and two motors, one arranged to turn each of said axles with its wheels, said motors with their respective axles, being movable relatively to each other in a horizontal plane. 12th. In a motor car or truck, the combination, substantially as described, of two driving axles swivelling around vertical axis, an intermediate axle movable transversely relatively to the car or truck frame, the transverse movement of said intermediate axle causing swivelling movement in said swivelling axles, and three motors, each axle being provided with one motor arranged to drive said axle with its wheels, said motors with their respective axles being movable, relatively to each other in a horizontal plane. 13th. In a motor car or truck, having a flexible wheel base, the combination, substantially as described, with the axles of said car or truck, of two or more motors journalled, respectively, to said axles, said motors being movably connected together, whereby horizontal movement in one of said axle will tend to cause horizontal movement in the other axle, through said connected motors. 14th. In combination, substantially as described, a car axle, a motor arranged to drive said axle and having one end supported thereon, a bar having one end supported on journal boxes on said axle, the free end of said motor being supported by said bar, and another bar having one end engaging said first named bar, near the axle, and keeping the same in a substantially horizontal position, the other end of said second named bar being held in position by engaging a projection or device near another axle of the car or truck. 15th. In combination, substantially as described, a car axle, a motor arranged to drive said axle and having one end supported thereon, a bar supported on journal boxes on said axle, the opposite or free end of said motor being supported flexibly by said bar and capable of vertical adjustment, and another bar having one end engaging said first named bar and preventing material vertical adjustment therein, the opposite end of said second named bar engaging a device near or depending from, another axle of the car or truck. 16th. In combination, substantially as described, two car axles, two motors arranged to drive said axles, each motor having one end supported by the axle which it drives, a bar or bars supported on journal boxes on said axles, said bars supporting the opposite or free ends of said motors, and another bar connecting and pivotally engaging said first named bars. 17th. In a railway car or truck, the combination, substantially as described, of a swivelling axle frame, an axle frame adapted to move transversely relatively to the main truck or car frame, and bars or brackets rigidly secured to said axle frames and adjustably connected to each other, one of said bars or brackets being provided with a pivotal bearing engaging in a friction plate sliding in a longitudinal bearing or slot in the other bar or brackets. 18th. In a motor car, the combination, substantially as described, of the motor, the bracket secured thereto and spring seats furnishing a bearing for said bracket, said bracket being provided with a longitudinal slot adapting said bracket to slide back and forth adjustably on said spring seats. 19th. In a motor car or truck, the combination, substantially as described, of the main frame, one or more driving axles swinging or swivelling around a vertical axis, one or more motors arranged to drive said axles, and a transversely moving axle, the transverse movement of the same, causing a swivelling movement in said driving axle or axles with their motors. 20th. In a motor car or truck, the combination, substantially as described, of the main frame, two swivelling driving axles, motors arranged to drive said axles, and a transversely moving axle located between said swivelling axles, said transversely moving axle affording a flexible support for the inner ends of said motors. 21st. The combination, substantially as described, of a motor car or truck, and a motor arranged to drive the same, said motor being provided with curved pedestals or guides and supported flexibly by springs on the axle which it drives, said motor moving adjustably on said axle and springs, in the line of said curved guides. 22nd. In a motor car or truck, the combination, substantially as described, of a motor arranged to drive said car or truck, curved pedestals or guides secured to said motor, a journal box or boxes on the axle driven by said motor, said journal boxes having sides curved to correspond to the curvature of said pedestals or guides, and springs supporting said motor on said curved journal boxes, said motor having a curvilinear adjustment on said journal boxes, relating to said axle. 23rd. In a motor car or truck, the combination, substantially as described, of the driving axle, the motor supported flexibly on said axle and arranged to drive the same, a shaft arranged to convey or transfer power to said driving axle, and means for causing a flexible adjustable movement in a curve between said motor and driving axle, whereby the shaft which drives said axle will always retain its normal distance from the same. 24th. The combination, substantially as described, of a motor car or truck, a motor arranged to drive the same, springs placed above and below the driving axle, and curved guides arranged to cause a curvilinear flexible adjustment between said axle and motor. 25th. The combination, substantially as described, with two shafts, of gear wheels arranged to communicate motion from one of said shafts to the other, said gear wheels being arranged on their respective shafts in pairs, the two wheels of each pair having their teeth formed diagonally on their peripheral surfaces and the teeth of the respective wheels inclining at an angle toward those of the other wheel, of the pair on the same shaft. 26th. In a motor car or truck, the combination, substantially as described, of the driving axle, the motor which drives the same and gear wheels arranged to communicate power from said motor to said driving axle, said gear wheels being arranged on their respective shafts in pairs, the two wheels of each pair having their teeth formed diagonally on their peripheral surfaces, and the teeth of the respective wheels inclining at an angle toward those of the other wheel of the pair on the same shaft.

No. 42,063. Treatment of Cypro-nickeliferous Pyrites. (*Traitement des pyrites cupro-nickelifères.*)

Jules Strap, Paris, France, 20th February, 1893; 18 years.

Resumé.—1° Un nouveau procédé de traitement des pyrites cupro-nickelifères, caractérisé par un grillage de la matte ou du minéral préalablement pulvérisé à un degré de finesse convenable, effectué de préférence en deux fois et en ayant bien soin de ne pas atteindre et surtout dépasser la température de 600°, ce grillage étant suivi d'un lessivage à l'eau légèrement acidulée à ½ ou 1 p. c. ayant pour but de dissoudre complètement les sulfates de cuivre et de nickel formés, que l'on sépare, le cuivre par *cementation*, en traitant la liqueur renfermant le mélange des deux sulfates par de vieilles ferrailles, puis après décantation pour séparer le cuivre, en insufflant dans la liqueur de l'air froid, en même temps que l'on y verse du carbonate de chaux pulvérulent pour décomposer le sulfate de fer et l'amener à l'état de peroxyde insoluble qui se précipite, le sulfate de nickel étant ensuite transformé en nickel par la voie électrylytique en ajoutant préalablement à la dissolution de sulfate de nickel une certaine quantité de sulfate d'ammoniaque, substantiellement comme décrit ci-dessus au présent mémoire. 2° En combinaison avec mon nouveau procédé de traitement des pyrites cupro-nickelifères ci-dessus définis, la transformation du sulfate de nickel en oxyde du métal en passant par une première transformation en chlorure de obtenue par un traitement au chlorure de sodium ou de calcium, chlorure de nickel obtenu étant ensuite transformé en oxyde par l'action d'un lait de chaux, substantiellement comme décrit ci-dessus au présent mémoire.

No. 42,064. Egg Case. (*Boîte à œufs.*)

Ferdinand F. Bischoff, Thiensville, Wisconsin, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In an egg case, the combination, with an outer casing of trays arranged to slide in and out thereof, the tops of said trays consisting of a series of hinged sections, whereby access may be gained to the eggs upon the partial drawing out of a tray, by the uplifting of a section of the cover, said sections joined in pairs by a common hinge joint, substantially as set forth. 2nd. In an egg case, the combination, of an outer casing, a series of trays sliding therein, said trays provided with an apertured bottom piece, longitudinal strips secured to the upper side of the bottom piece, staples secured to said longitudinal strips, and a cover consisting of a series of sections through which the legs of the staples pass to form hinge joints therefor, substantially as set forth. 3rd. In an egg case, the combination, of an outer casing, trays sliding therein, said trays provided with apertured bottom pieces, longitudinal strips secured to the upper side of the bottom pieces, a cover consisting of a series of sections, metallic surfaces upon said sections, and staples having their legs engaging with said metallic surfaces and entering the longitudinal strips, substantially as set forth. 4th. In an egg case, the combination, of an outer casing, cleats secured to the inner sides thereof, and terminating short of the front of the casing, pins extending inwardly from the sides of the casing above and approximately in line with the end of the cleats, and trays resting upon the cleats, and provided with side grooves to receive the pins, said trays when drawn out beyond the ends of the cleats, adapted to be swung downwardly upon the pins as pivots, substantially as set forth. 5th. In an egg case, the combination, of an outer casing, cleats secured to the inner sides thereof and terminating short of the front of the casing, pins extending inwardly from the sides of said casing, above and approximately in line with the ends of the cleats, trays resting upon the cleats and provided with side grooves to receive the pins, said trays when drawn out beyond the ends of the cleats, adapted to be swung downwardly upon the pins as pivots, substantially as and angle irons secured to the rear angles of the trays, and provided with recesses registering with the ends of the side grooves, whereby said grooves are reinforced and strengthened at the point where the trays are swung down upon the pivot pins, substantially as set forth. 6th. In an egg case, the combination, of an outer casing provided upon its inner sides with cleats, a tray, a supplemental frame secured to the under edges of the sides and ends of the tray and confining the bottom of said tray, and intermediate strengthening strips secured to the under side of the bottom, the ends of said strengthening strips and the supplemental frame adapted to rest upon the supporting cleats of the casing, substantially as set forth. 7th. The combination, of a casing provided with an open front, cleats secured to the sides of said casing slightly below the top thereof, lateral pins extending inwardly from the sides of the casing near their front edges, and a door provided with edge grooves adapted to receive the pins to turn thereon as pivots, and to be slid within the casing and to rest on the side cleats thereof, substantially as set forth. 8th. In an egg case, the combination, of a casing, a series of trays therein provided with apertured top and bottom pieces through which the contained eggs project, a flexible partition interposed between the trays, and a metallic border for said partition, provided with end angular securing flanges, substantially as set forth.

No. 42,065. Steam Cooking Pot.

(*Marmite pour cuire à la vapeur.*)

Elisha A. Gill, St. John, New Brunswick, Canada, 20th February, 1893; 6 years.

Claim.—A combined steam cooker and odorless pot, comprising a cast metal pot A, having a semi-spherical bottom C, flattened at the pole, a supporting rim or flange D, surrounding said bottom, an exterior water supply tube E, provided with a whistle plug F, an exterior waste steam duct G, having a valve H, and discharging under the bottom C, a removable perforated shelf P, having feet *c*, and adjustable arms *d*, supporting a shelf N, and a cylindrical steamer section or extension K, fitting the top of the pot, and having a removable shelf M, or shelves supported on bearings within the steamer, as set forth.

No. 42,066. Ventilator. (*Ventilateur.*)

The Davidson Ventilating Fan Company, assignee of William Henry Adams Davidson, all of Boston, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a ventilating fan or wheel, a blade bent diagonally into two planes, and bounded on two edges with converging curved lines the other two edges bounded by converging substantially straight lines substantially as set forth. 2nd. In a ventilating fan or wheel, the combination, with a hub end peripheral ring, of blades bent diagonally into two planes and having two converging curved edges and two converging substantially straight edges, the straight edges secured to the hub and ring, the attachment at the ring being in rear of that at the hub. 3rd. A ventilating fan or wheel composed of a series of blades each bent diagonally into two planes, two edges converging on curved lines and two in substantially straight lines, substantially as set forth. 4th. In a ventilating fan or wheel, the combination, with a hub and ring of blades composed of blanks of sheet metal bent diagonally into two leaves, one edge of each blade secured to the ring, and one edge extending from the ring more or less directly to the hub, said edges being in the same plane with the ring, substantially as set forth.

No. 42,067. Grate for Steam Boiler Furnaces.

(*Grille pour foyers de chaudière à vapeur.*)

Paul Louis Crowe, Kansas City, Missouri, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. An improved travelling grate, comprising a series of bars provided with alternately transverse arms and rods passing through eyes in certain of said arms, substantially as set forth. 2nd. An improved travelling grate, comprising a wheeled frame, a number of sprocket wheels journalled thereon, and an endless movable grate running over said sprocket wheels, and composed of a series of bars provided with alternating transverse arms and rods passing through eyes in certain of said arms, substantially as set forth. 3rd. An improved travelling grate comprising a wheeled frame, a number of sprocket wheels journalled on said frame, a driving wheel or pulley connected with one of said sprocket wheels, and an endless movable grate running over said pulleys, and composed of a number of bars having transverse alternating arms and rods extending through eyes in certain of said arms, substantially as set forth. 4th. An improved attachment for boiler furnaces, comprising a wheeled frame, a number of water receptacles mounted thereon, and tubes connecting said receptacles, and extending longitudinally of the frame, substantially as set forth. 5th. An improved attachment for boiler furnaces, comprising a movable frame, a number of water receptacles mounted thereon, a number of tubes connecting said receptacle, and a number of removable caps set in openings in the walls of said receptacles, and disposed oppositely to the end of said tubes, substantially as set forth. 6th. An improved attachment for boiler furnaces, comprising a movable frame, a number of water receptacles mounted said frame, a number of tubes connecting said receptacles, a drum or reservoir communicating with one of said receptacles, and pipes connecting said drum with the water space of a boiler, substantially as set forth. 7th. An improved attachment for boiler, comprising a movable frame, a receptacle or approximately U-shape mounted upon the front end of said frame, a horizontal receptacle located about midway of the frame, two oppositely disposed vertical receptacles located at the rear end of said frame, and tubular receptacles located at the rear end of said frame, and tubular connections communicating with the interior of said receptacles, substantially as set forth. 8th. An improved attachment for boiler furnaces, comprising a number of water receptacles having tubular connections establishing communication between their interiors, one of said receptacles being approximately U-shape, and having a horizontal partition in its lower portion, provided with an opening between its ends, substantially as set forth. 9th. An improved travelling grate, comprising a series of bars provided with alternate and interlocking hooks and eyes or staples for detachably connecting said bars together, substantially as set forth. 10th. An improved travelling grate, comprising a wheeled frame, a number of sprocket wheels journalled thereon, and an endless movable grate running over said sprocket wheels, and composed of a number of bars having alternating and interlocking hooks and eyes for detachably connecting said bars together, substantially as set forth. 11th. An improved travelling grate, comprising a wheeled frame, a number of sprocket wheels journalled on said frames, a driving wheel or pulley connected to one of said sprocket wheels, and an endless movable grate running over said sprocket wheels, and composed of a number of bars, provided with alternating and interlocking hooks and eyes or staples, substantially as set forth.

No. 42,068. Oil Lamp. (*Lampe à huile.*)

Francis Thomas Vine, Eastington Rectory, near Stonehouse, England, 20th February, 1893; 6 years.

Claim.—1st. In an oil burning lamp, the combination with the main wick or wicks, of an auxiliary wick adapted to be raised and lowered with regard to the main wick or wicks, and to be lighted when the main wick or wicks are extinguished, and extinguished when the latter are lighted, substantially as and for the purpose set forth. 2nd. In an oil burning lamp, the combination with the main wick or wicks, of an auxiliary wick adapted to be raised and lowered with regard to the main wick or wicks, for the purposes set forth, and a movable flame spreading hood *b*, adapted to be moved into operative position for the main wick or wicks, or for the auxiliary wick. 3rd. In a duplex oil lamp, the combination with the main wick tubes *c*, *c*, of the auxiliary wick tube *f*, movable up and down between said main wick tubes, the central vertical line of said wick tube *f*, being at the same distance from the central vertical axis of the lamp as the central vertical line of either of the main wick tubes *c*, *c*, and a movable hood *b*, adapted to be raised and revolved through a quarter turn for the purpose set forth. 4th. In a duplex oil lamp, having the three wick tubes *c*, *c*, *f*, relatively located as described, the combination with the hood *b*, of the ring *m*, carrying the said hood lugs m^2, on said ring slots m^6, therein, the spiral ways m^3, and rotary gallery m^4, having screws or equivalents m^5, engaging in said slots m^6, for the purpose set forth. 5th. In an oil burning lamp or movable wick tube *f*, having a rack f^1, connected therewith in combination with an endwise movable spindle K^2, having a wheel *l*, and adapted to be moved by bringing said wheel into engagement with the rack f^1, for raising or lowering the wick tube *f*,

or into engagement with the wick in said tube *f*, for the raising or lowering of the said wick. 6th. In a duplex oil burning lamp, having the fixed main wick tubes *c*, *c*, and the movable auxiliary wick tube *f*, relatively located as set forth, the combination of the wick tube *f*, having the rack f^1, thereon, with a spindle K^2, movable in slots K^1, in bearings K, having the wheel *l*, for engagement with said rack or with said wick tube *f*, and recessed portions K^3, K^4, K^6, K^7, for engagement with the edges of the wick tubes *c*, *c*, and the spring K^5, substantially as and for the purpose set forth. 7th. In a single burner oil lamp, the combination with the main wick tube of an auxiliary wick tube *f*, movable vertically in close proximity with said main wick tube, a burner casing *i*, having an inclined cylindrical sleeve i^4, and a hood *b*, having an inclined cylindrical part i^5, whereby said hood is rendered movable, as and for the purpose set forth.

No. 42,069. Rod Coiling Apparatus.

(*Appareil à lover les barres.*)

Henry Roberts, of Pittsburgh, Pa., U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In rod coiling apparatus, the combination, with a rotatory coiling cone, having a downwardly extending distributing rib, of a lip set removably in a recess at the end of said rib and projecting below the same, and a drum which is vertically movable within the limit of rotation of the lip to cause removal of the last end of the rod, substantially as and for the purposes described. 2nd. In a rod coiler, the combination, with a rotatory coiling channel through which the rod passes and by which it is delivered in a coil, of a roller situate at the delivery end of the channel, substantially as and for the purposes described.

No. 42,070. Car Coupler. (*Attelage de chars.*)

John P. Kirwan and James E. Kirwan, Jr., both of Pittsfield, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a car coupler, the combination, with a pivoted knuckle, the body portion of which is provided with a downwardly inclined or bevelled surface, of a coupling pin having at its lower end an inclined or bevelled surface corresponding to that of the knuckle, whereby when the pin is raised the knuckle will be forced outward to the uncoupled position, substantially as described. 2nd. In a car coupler, the combination, with a knuckle provided at its rear with a transversely located wing, and having its body portion provided with a bevelled surface, of a coupling pin comprising two connected members, one shorter than the other, both members being adapted for engagement with the wing, and one member being also provided with a bevelled surface to act upon the bevelled surface of the knuckle when the pin is elevated, as and for the purpose set forth. 3rd. In a car coupler of the type described, the combination, with a knuckle comprising a hook section, a body section and a wing section located transversely of the body section, the body section of the knuckle being provided upon its outer side face with a bevelled surface, of a coupling pin comprising two connected vertical members, one shorter than the other and both adapted for engagement with the wing of the knuckle, the longer member being provided at its lower end upon its inner edge with a bevelled surface engaging with the bevelled surface of the knuckle, and a stop located upon the knuckle, and adapted for engagement with the drawhead when the knuckle is in its outer position, as and for the purpose specified. 4th. In a car coupler of the type described, a knuckle provided with a wing at its upper rear portion, extending transversely of the body, and having one face of its body section bevelled, as and for the purpose specified. 5th. In a car coupler of the type described, a coupling pin comprising two vertical connected members, one longer than the other, the longer member being widest at its lower end and provided at said end with a bevelled surface, as and for the purpose set forth.

No. 42,071. Semaphore. (*Sémaphore.*)

George H. Johnson, Fitchburg, Massachusetts, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. In a railway signal device, a standard, signal arms mounted on the same pivot therein, a rod fitted to slide on said standard and provided with a cam groove in which pins on said arms work, and a lever for actuating said rod, combined substantially as set forth. 2nd. In a semaphore signal device, the combination of a standard provided with a vertical chamber, semaphore arms pivoted in said chamber, a rod fitted to slide vertically in said standard, a plate mounted on said rod and provided with a cam track in which pins on said arms work, and levers for actuating said rod, all being arranged to operate, substantially as described. 3rd. In a semaphore signal device, the combination of a standard, two signal arms pivoted in said standard and provided with glazed openings, a rod fitted to slide vertically on standard, a plate mounted on said rod and provided with a cam track in which pins on said arms work, levers for actuating said rod, and a lantern mounted on a bracket on said standard in position to register with the openings in the arms when said arms are projected, substantially as set forth. 4th. In a semaphore signal device, the combination of a standard provided with a vertical chamber, signal arms pivoted in said chamber, a rod fitted to slide vertically on said standard and provided with a plate having a cam track in which pins on said arms work, a bell crank lever having an arm working in a link on said rod, and its opposite end connected with a hand lever, substantially as described. 5th. In a semaphore signal device, the standard A, provided with the chamber *b*, in combination with the pivoted arms B, C, the sliding rod *f*, provided with the plate H, having the cam track *r*, substantially as set forth. 6th. In a semaphore signal device, the standard and pivoted arms, in combination with the rod *f*, provided with the plate H, having the cam track *r*, in which pins on said arms work, levers for actuating said rod, and a counterbalance for regulating the movement thereof, substantially as described. 7th. The combination of the standard A, pivoted arms B, C, provided with pins *t*, *v*, openings *y*, the rod *f*, provided with the plate H, having the track *r*, the lantern *w*, and mechanism for actuating said rod, substantially as and for the purpose set forth.

No. 42,072. Machine for Making Beam Hangers.

(*Machine pour faire des crochets de poutre.*)

John Grant, Chicago, Illinois, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. The combination, with a form block and stationary bending rollers operating in connection therewith to make a central bend or loop in the blank, of forming dies mounted on the form block and extending laterally from opposite sides thereof, cam arms operating in connection with said forming dies to give a twisted form to the blank, bending levers pivoted to the ends of said cam arms, other stationary bending rollers located at opposite sides of the form block at a distance therefrom equal to the width of the blank, bending arms pivoted to the said bending levers, and stationary surfaces or dies opposed to said bending levers, substantially as described. 2nd. The combination, with a form block, bending rollers operating in connection therewith to make a central bend or loop in the blank, forming dies mounted on the form block and extending laterally from opposite sides thereof, cam arms operating in connection with said forming dies to give a twisted form to the blank, bending levers pivoted to the ends of said cam arms, and a revolving cam or wiper for actuating said bending levers, substantially as described. 3rd. The combination, with a reciprocating carriage, a form block mounted thereon, stationary bending rollers operating in connection with the form block to make a central loop in the blank, forming dies mounted upon the form block and extending laterally at opposite sides thereof, cam arms mounted upon the carriage, and operating in connection with said forming dies to give a twisted form to the blank, stationary parts or rollers for actuating said cam arms, bending levers pivoted to the end of said cam arms, a revolving cam or wiper actuating said bending levers, bending arms pivoted to the outer parts of said bending levers, actuating levers pivoted upon the bending levers and connected with the said bending arms, and a stationary part or bar upon the machine frame adapted for contact with said actuating levers, whereby the said bending arms are moved, substantially as described. 4th. The combination, with a reciprocating form block, and bending rollers operating in connection therewith to form a central loop in the blank, of a clamping device for holding the blank against the end of the form block, a lever for actuating said clamping device, a stationary part of or upon the machine frame adapted for engagement of the block, whereby the clamp is automatically actuated, forming dies mounted upon the form block and extending laterally from opposite sides thereof, cam arm pivoted to the carriage and operating in connection with said forming dies to give a twisted form to the blank, other stationary bending rollers located at opposite sides of the form block at a distance therefrom equal to the width of the blank, and bending levers pivoted to the ends of the cam arms, substantially as described. 5th. The combination, with a reciprocating form block, bending rollers operating in conection therewith, forming dies mounted on and extending laterally from opposite sides of the form block, and cam arms operating in connection with said forming dies, said forming dies being movably connected with the form block, and a stationary part of or upon the machine frame engaging said forming dies, or a part connected therewith during the reciprocation of the form block, whereby said forming dies are moved or shifted into operative position, substantially as described.

No. 42,073. Cot. (*Lit pliant.*)

Charles William Trenholme and Madena Moran Vaughan, both of Montreal, Quebec, Canada, and Almira Anna Parker, Poughkeepsie, New York, U.S.A., 20th February, 1893; 6 years.

Claim.—1st. A cot, having sides foldable longitudinally and transversely of their length, whereby, when folded or closed, the length of the cot will be equal to its width when opened. 2nd. A cot, having sides foldable longitudinally and transversely of their length, and legs adapted to be closed against the said side. 3rd. A cot having sides foldable longitudinally and transversely of their length, and a series of pivoted legs carried by the sides, a number of which legs are adapted to be locked together to prevent the sides from collapsing when the cot is in use. 4th. In a cot, the combination of the ends, the sides pivotally connected therewith, each of which sides is formed of sections, links connecting the said sections, and a spreader brace engaging the said links. 5th. In a cot, the combination of the ends, the sides pivoted thereto, each of which sides is formed of sections, links connecting the sections, a spreader

brace engaging the links and pivoted legs carried by the sides, a number of which are secured together. 6th. In a cot, the combination of the ends, the sides pivoted thereto, each of which sides is formed of sections, links connecting the sections, a spreader brace, adapted to engage the links, and pivoted legs carried by the sides, a number of which are adapted to be secured together. 7. A cot, having sides foldable longitudinally and transversely of their length, a series of pivoted legs carried by the sides, a number of which legs are adapted to be secured together to prevent the sides from collapsing in the direction of their length, and a spreader brace adapted to engage the sides to prevent them collapsing laterally.

No. 42,074. Device for Coating Photographic Paper.

(*Appareil pour enduire le papier photographique.*)

Judson A. Rose and S. Wesley Gage, both of Rose, New York, U.S.A., 20th February, 1893; 6 years.

Claim.—The bed or support A, for holding paper, having a longitudinally straight or flat, and a transversely concave working surface, in connection with abutments B, B, substantially as and for the purpose hereinbefore set forth.

No. 42,075. Electric Motor. (*Moteur électrique.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U. S. A., 20th February, 1893; 6 years.

Claim.—1st. The method of operating electric motors, consisting in the employment of differentially acting motors, and utilizing one motor to receive the thrust of the other motor, thus converting the first motor into a dynamo, and conserving the energy expended upon it by the second motor, substantially as set forth. 2nd. The method of operating electric motors, consisting in the employment of differentially acting motors, and utilizing one motor to receive the thrust of the other motor, thus converting the first motor into a dynamo, and conserving the energy expended upon it by the second motor, and varying the speed of the driven machinery by varying the relative speed of the two machines, substantially as set forth. 3rd. The method of operating electric motors, consisting in the employment of differentially acting motors, and utilizing one motor to receive the thrust of the other motor, thus converting the first motor into a dynamo, and conserving the energy expended upon it by the second motor, and reversing the direction of rotation of the driven machinery without reversing either of the motors by changing the dynamic relations of the two motors, substantially as set forth. 4th. The combination, with a driven shaft, of two electro dynamic or dynamo electric machines, a differential gearing connecting such machines with the shaft to be driven, and means for changing the dynamic relations of such machines, substantially as set forth. 5th. The combination, with a driven shaft, of two electro dynamic or dynamo electric machines, a differential gearing connecting such machines with the shaft to be driven, and means for varying the strength of the field magnets of such machines, substantially as set forth. 6th. The combination, with a driven shaft, of two electro dynamic or dynamo electric machines, differential gearing connecting such machines with the shaft, and means for simultaneously increasing the strength of the field magnet of one machine, and decreasing the strength of the field magnet of the other machine, substantially as set forth.

No. 42,076. Rotary Engine. (*Machine rotatoire.*)

Archibald H. Brintnell, Toronto, Ontario, Canada, 20th February, 1893; 6 years.

Claim.—1st. As in improved rotary engine, the cylindrical casing having a central disc secured on the main shaft and caused to rotate by a plurality of pistons fitting into recesses in the central disc, and radially adjustable in the recesses in the central disc during its revolution by friction rollers secured on the inner ends of the pistons, and travelling in cam grooves made in the ends of the cylindrical casing, as and for the purpose specified. 2nd. The central disc D, secured on the shaft F, within the cylindrical casing A, and having ports L and M, and a plurality of pistons C, radially adjustable in the recess *c*, in the disc D, by friction rollers *g*, supported on a rod extending through the inner end of the pistons, the said rod when the disc D revolves being caused to move in the radial slots H, H', so as to draw the piston backwardly and forwardly by the friction rollers *g*, moving in the cam grooves I, as and for the purpose specified. 3rd. The central disc D, secured on the shaft F, within the cylindrical casing A, and having ports L and M, and a plurality of pistons C, radially adjustable in the recesses *c*, in the disc D, by friction rollers *g*, supported on a rod extending from the inner end of the pistons, the said rod when the disc D revolves being caused to move in the radial slots H, H', so as to draw the pistons backwardly and forwardly by the friction rollers *g*, moving in the cam grooves I, in combination with the curved block J, having open ends *j*, arranged as and for purpose specified. 4th. The central disc D, secured on the shaft F, within the cylindrical casing A, and having ports L and M, and plurality of pistons C, radially adjustable in the recesses *c*, in the disc D, by friction rollers *g*, supported on a rod extending through the inner end of the pistons, the said rod when the disc D revolves being caused to move in the radial slots H, H', so as to draw the piston backwardly and forwardly by friction rollers *g*, moving in the cam grooves I, in combination with the curved block J, having open ends *j*, the inner ends of which are opposite to the ports L and M, and the four way cock connected by the pipes *l* and *m* to the ports, and operated, as and for the purpose specified. 5th. The combination with the central disc having pistons C, radially adjustable therein, of the curved block J, having open ends *j*, and the packing block K, having spiral springs K located above it, and a screw bolt L, to adjust the packing block K vertically, as and for the purpose specified. 6th. The combination with the central disc having pistons C, radially adjustable therein, by the friction rollers *g*, travelling in the groove I, of the adjustable plates R and R', arranged as and for the purpose specified.

No. 42,077. Bench Floor for Hot-Houses.

(*Plancher pour bancs de serre.*)

William Platt Wight, Madison, New Jersey, U. S. A., 23rd February, 1893; 6 years.

Claim. 1st. A bench floor for hot-houses, consisting of a series of porous perforated tiles, and parallel angle irons which support the tiles, substantially as described. 2nd. A bench floor, comprising a series of perforated tiles made concave on the under side, and supports for the tiles, substantially as described. 3rd. In a bench floor, the tile having grooves on the under side, and a series of perforations extending through the tile from the bottom of the grooves, substantially as described.

No. 42,078. Conductor for Electricity.

(*Conducteur électrique.*)

George Edward Heyl, 101, 102 Leipziger Strasse, Berlin, Prussia, 23rd February, 1893; 6 years.

Claim.—1st. An isolating channel for electric conductors, in combination with metal covers arranged at a short distance above the conductors and adapted to be pressed down elastically on the conductor by the rolling stock, as for the purpose set forth. 2nd. An isolating channel for electric conductors, made of an elastic waterproof material, and the edges thereof projecting somewhat above the conductor, in combination with metal covers placed on said edges, in order to give unto the metal covers elastic supports, and to tightly close up the conductor containing channel, for the purpose set forth.

No. 42,079. Lamp Extinguisher. (*Eteignoir de lampe.*)

James McCobb Selden, Cincinnati, Ohio, U.S.A., 23rd February, 1893; 6 years.

Claim.—1st. The automatically moving plate I', located in conjunction with the wick G, substantially as and for the purposes specified. 2nd. The inclined plate I', automatically moving, and located in conjunction with the wick G, substantially as and for the purposes specified. 3rd. The inclined plate I', one edge of which is in contact with the wick G, and provided with end pieces I, I, pivotally supported, and whose oscillation tends to press the extinguishing plate I', against the wick G, and over the latter when lowered, substantially as and for the purpose specified. 4th. The inclined plate I', one edge of which is in contact with the wick G, and provided with end pieces I, I, pivotally supported, these pieces I, having extensions I², inclined with reference to the remainder of the portion I, so as to utilize the force of gravity in carrying the extinguishing plate I', against and over the wick, substantially as and for the purposes specified. 5th. The inclined plate I', one edge of which is in contact with the wick G, and provided with end pieces I, I, pivotally supported, these pieces I having extensions I², inclined with reference to the remainder of the portion I, so as to utilize the force of gravity in carrying the extinguishing plate I' against and over the wick G, and connected with the bar J, substantially as and for the purposes specified. 6th. The combination of the extinguishing plate I', and the adjacent wick G, the piece H', respectively connected to the ends of the extinguishing plate, and having slots I³, each receiving a pivot H', the piece I' being so constructed as to have a tendency to press the extinguishing plate forward and over the wick G, the pivots H, H', being connected to and supported on the collar grasping the wick tube, substantially as and for the purposes specified. 7th. The collar H grasping the wick tube, and having the offspringing pivotal studs H', H', integral therewith, and the end pieces I, each having slots I³, receiving its respective adjacent pivot H', this end piece carrying the extinguishing plate I', and tending to press the said plate toward and over the wick G, substantially as and for the purpose specified. 8th. The collar H grasping the wick tube, and having the off springing pivotal studs H', H', integral therewith, and the end pieces I, each having slots I³, receiving its respective adjacent pivot H', this end piece carrying the extinguishing plate I', and tending to press the said plate toward and over the wick G, the pieces T being provided with the angulated extensions I², carrying the bar J, substantially as and for the purposes specified. 9th. The plate I', inclined from front to rear, its front edge adjacent to the front edge of the wick tube, and having the end pieces I², I², connected to the bar J, and collar H grasping the wick tube, and provided at its side with the stop piece K extending under the bar J, the collar being provided with pivots as H', H', upon which the said pieces I, I, respectively oscillate, substantially as and for the purposes specified. 10th. A wick tube provided with two opposing extinguishing devices, having extinguishing plates I', I',

and end plates I, I, pivotally supported and combined with mechanism, substantially as described, for causing the plates I^1, I^1, to always tend to approach each other, substantially as and for the purposes specified. 11th. A wick tube provided with two opposing extinguishing devices, having extinguishing plates I^1, I^1, and end plates I, I, each pivotally supported on pivots H^1, H^1, on its own pivot independently of the other, the extinguishing plates I^1, I^1, automatically tending to approach each other, substantially as and for the purposes specified. 12th. In a lamp extinguishing device, the extinguishing plate I^1, pivotally supported and provided with mechanism, substantially as described, for causing the extinguishing plate to continually tend to pass over the wick, the edge of the extinguishing plate next to the wick being provided with the curved flange or extension, I^5, substantially as and for the purposes specified. 13th. In a lamp extinguishing devices, the two opposing extinguishing devices I^1, I^1, pivotally supported and provided with mechanism, substantially as described, for causing the plate I^1, I^1, to continually tend to approach each other, the curved extensions or flanges I^5 respectively attached to the extinguishing plates I^1, substantially as and for the purposes specified. 14th. The combination of the wick tube, an extinguishing device having the extinguishing plate I^1, supporting pieces I, I, provided with mechanism whereby the plate I^1, automatically tends to approach the wick G, the sides I, I, being respectively provided with inclined slots I^4, each slot I^4 receiving one of the pivots H^1, the latter being smaller than the slot, substantially as and for the purposes specified.

No. 42,080. Valve. (*Soupape.*)

John La Burt, New York, State of New York, and William H. Aggricola, Brooklyn, New York, U.S.A., 23rd February, 1893; 6 years.

Claim.—1st. A valve of the character described, comprising a cylinder having an inlet in its lower portion and an outlet tube in the top, a piston rod extending through the tube and held to move freely therein, a piston secured to the rod within the cylinder, and a packing on the upper part of the piston, substantially as described. 2nd. A valve of the character described, comprising a cylinder having an inlet in its lower portion, a pipe secured to the top of the cylinder and provided with an outlet, a tube arranged within the pipe and opening within the cylinder, said tube having a vent as shown, a piston extending through the tube and held to move freely therein, and a piston secured to the lower end of the rod, said piston having a packing upon its upper side, substantially as described.

No. 42,081. Check and Cash Register.

(*Registre de monnaie et chèque.*)

Willard Herbert Gilman, Emery Osgood Bicknell, and Charles Follen Adams, all of Boston, Massachusetts, U.S.A., 23rd February, 1893; 6 years.

Claim.—1st. A check and cash register comprising in its construction a case, a movable check receptacle, a check depository, a movable money depository, and devices intermediate of the latter, and the check receptacle whereby by the movement of the money depository the check receptacle will be first moved to display the check, and subsequently moved to deposit the check in the check depository, as set forth. 2nd. A check and cash register comprising in its construction a case provided with glass covered apertures and check introducing slots, a check depository, a rotary shaft, provided with a plurality of check receiving devices, and mechanism for imparting an intermitting rotary motion to the said shaft to display the checks at said glass covered apertures and deposit the same in the check depository, as set forth. 3rd. A check and cash register comprising in its construction a case provided with glass covered apertures at both front and rear, and check introducing slots, a check depository, a rotary shaft provided with four check receiving devices opposite each check receiving slot and glass covered aperture, the said .....check receiving devices radiating from the four quadrants or quarters of the circumference of the said shaft, and mechanism for moving the shaft intermittingly to the extent of a quarter rotation at each of said movements, as set forth. 4th. A check and cash register comprising in its construction, a case provided with glass covered apertures and check introducing slots, a check depository, a rotary shaft provided with pairs of grooved check receiving spokes arranged opposite the check introducing slots, and mechanism to impart an intermitting rotary movement to the said shaft, as set forth.

No. 42,082. Machinery for Making Corrugated Sheet Metal Pipes. (*Appareil pour la fabrication de tuyaux de métal en feuille plissée.*)

William J. Plecker, Peoria, Illinois, U.S.A., 23rd February, 1893; 18 years.

Claim.—1st. The herein described improvement in the art of manufacturing corrugated sheet metal pipes, it consisting in first forming a tube with loosely engaged joined edges, then compressing the metal into corrugations on longitudinal lines of the pipe while it is held under tension transversely, and finally tightening the seam or joint by bending the overlapping edges down upon the pipe, substantially as set forth. 2nd. In a machine for forming closed corrugated tubes, the combination of the stationary frame, the corrugation forming rolls mounted on the stationary frame, the seam locking roll in a transverse plane behind that of the corrugation rolls but in close proximity thereto, and situated substantially as set forth, whereby while one part of the tube is having the seam locked and the other part is being simultaneously corrugated. 3rd. The combination, with the stationary frame, a carriage sliding on said frame, means for actuating said carriage, and a mandrel detachably secured to the end of said carriage of pressing rolls mounted on said stationary frame in a transverse plane other than those of the sliding carriage, and adapted to have the mandrel pass between them substantially as set forth. 4th. The combination, with the longitudinally movable mandrel, of the ring like plate, pressing rolls secured to said plate, and adjustable toward and from the mandrel, and laterally adjustable, substantially as set forth. 5th. The combination, with the longitudinally movable mandrel, of the plate and pressing rolls secured to the plate and adjustable laterally, substantially as set forth. 6th. The combination of the frame, the plate secured to said frame, the curvilinear guides in said plate, the arms carrying rolls, and clamps for fastening said arms in said guides, substantially as set forth. 7th. The combination, with the frame and the longitudinally movable mandrel, of the ring like plate secured to the frame, and having concentric guides, bifurcated arms secured to said plate, and laterally adjustable and pressing rolls mounted in said bifurcated arms, as substantially as set forth. 8th. The combination, with the frame comprising the rearwardly extending portion and the upright portion, the ring like plate mounted on said upright portion, and having concentric guides, the arms clamped in said guides and pressing rolls mounted in said arms, of a carriage sliding on said rearwardly extending portion, and a mandrel secured to said carriage and passing between said pressing rolls, substantially as set forth. 9th. The combination of the frame, the longitudinally movable corrugated mandrel, the pressing rolls mounted on the frame, and a vertically swinging detent lever mounted on the frame, and adapted to engage with the pipe on the mandrel, substantially as and for the purpose set forth. 10th. In a machine for corrugating sheet metal pipe, the combination of the pinion and rack, the bar or carriage secured to the rack, the longitudinally reciprocating mandrel projecting beyond the transverse planes of the rack, and adapted to be entirely surrounded by a sheet metal tube, the frame supporting the said parts, the corrugating rolls mounted on said frame, in a transverse plane other than those of the rack, and placed substantially as set forth, around the path of the mandrel, whereby they mutually act to relieve the mandrel of side pressure, when the mandrel is caused by the rack and pinion to pass between them, substantially as set forth.

No. 42,083. Roller and Ball Bearings.

(*Rouleau et coussinet à boule.*)

Frederick Purdon and Harry Ernest Walters, both of Westminister, in Middlesex, and William Hugh Woodcock, West Norwood, in Surrey, all in England, 23rd February, 1893; 6 years.

Claim.—1st. In ball and roller bearings the combination of a shaft, either with or without a fixed sleeve, with cylinders separated from each other by rollers or balls for the purpose of preventing anything but rolling friction between the respective moving surfaces, substantially as hereinbefore described and illustrated in the accompanying drawings. 2nd. In ball or roller bearings the combination of a stationary box or casing provided with removable covers upon which are formed a path or paths upon which antifriction cylinders, balls, or rollers move, substantially as hereinbefore described and illustrated in the accompanying drawings. 3rd. In ball or roller bearings the combination with a rotating shaft and stationary casing of cylinders having grooves or projections in order to take up end pressure, substantially as hereinbefore described and illustrated in the accompanying drawings. 4th. In ball or roller bearings the combination with a rotating shaft and stationary casing of a part m^1 figures 5, 6, 7, and 9, so arranged as to allow of wear being taken up. substantially as hereinbefore described and illustrated on the accompanying drawings. 5th. In ball or roller bearings the combination with a rotating shaft and stationary casing of single balls for taking up the end pressure, the said balls running in special grooves arranged in the stationary casing, substantially as hereinbefore described and illustrated in the accompanying drawings. 6th. In ball and roller bearings the combination with a rotating shaft and stationary casing of one or more balls each running in a separate groove for the purpose of taking up the end pressure, substantially as hereinbefore described and illustrated in the accompanying drawings. 7th. In ball or roller bearings the combination of the before mentioned cylinders, rollers, or balls for bearings or journals in which the shaft rotates within a journal which is itself stationary or the journal forms part of mechanism which has a rotary motion round the stationary shaft, substantially as hereinbefore described and illustrated in the accompanying drawings. 8th. In ball and roller bearings the combination of a series of cylinders kept apart by two series of rollers or balls which rollers or balls are provided from moving outwardly by line rings of sections, substantially as hereinbefore described and illustrated in the accompanying drawings.

No. 42,084. Tobacco Pipe. (*Pipe.*)

Albany Washington Carr, Brentford, Middlesex, England, 23rd February, 1893; 6 years.

Claim.—1st. In a tobacco pipe, the upper and lower portions *a*, *b*,

of the constituting respectively a combustion chambers and a bowl magazine with intermediate stem opening *d*, and ring space *c*, as and for the purpose herein set forth and shown in the drawings. 2nd. In a tobacco pipe bowl, as herein set forth, the chamber *a*, and magazine holder *b*, b^1, and plugs *e*, and feeding plate *f*, as set forth. 3rd. In a tobacco pipe bowl having the magazine chamber *b* and b^1, the fluted chamber *a*, in combination with the ring channel *c*, and the stem outlet *d*, as and for the purpose set forth.

No. 42,085. Car Coupler. (*Attelage de chars.*)

John Lawrence Smith, Ogden, Utah, U.S.A., 23rd February, 1893; 6 years.

Claim.—1st. The combination, with a drawhead having a vertical through recess therein, of an L-shaped gravity bar movable vertically in said recess, and having a depending coupling pin pivoted to its horizontal member, and means for operating the gravity bar from the sides and top of the car, substantially as shown and described. 2nd. The combination, with a drawhead having a vertical through recess therein, of an L-shaped gravity bar movable vertically in said recess, and having a depending coupling pin pivoted to its horizontal member, a curved guard latch pivoted to the drawhead and extening over the recess therein, and means for operating the gravity bar and guard latch, from the sides and top of the car, substantially as shown and described. 3rd. The combination, with a drawhead having a loop-shaped link pivoted thereto, of a transverse shaft journalled on the car in rear of the drawhead, provided at its ends with handles and formed between its ends with a loop adapted to engage the coupling link, substantially as shown and described 4th. The combination, with a drawhead having a loop-shaped link pivoted thereto, of a transverse shaft journalled on the car in the rear of the drawhead, provided at its ends with handles and formed between its ends with a loop adapted to engage said link, and also formed with a crank next said loop, and means for operating the crank from the top of the car, substantially as shown and described.

No, 42,086. Method of Electric Welding.

(*Methode de soudure électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The herein described improvement in welding metals electrically, consisting in making contact with both pieces to be united, and passing a current of greater strength through one piece than the other. 2nd. The herein described process of welding metals electrically, consisting in making contact with both pieces independently of each other, passing a current of greater strength through one piece than the other until the pieces are sufficiently heated, and then pressing the pieces together as desired. 3rd. The herein described improvement in welding together electrically pieces of metal of different conductivity, consisting in making contact with both pieces to be united, and passing a current of greater strength through the piece having the lowest resistance than through the other. 4th. The herein described improvement in welding together electrically pieces of metal of different conductivity, consisting in making contact with both pieces to be united, passing currents through both pieces, and proportioning the strength of the currents to the conductivity of the pieces to produce the same welding temperature in both pieces simultaneously. 5th. The herein described improvement in welding together electrically pieces of metal of different conductivity, consisting in dividing a current and passing the same through a plurality of branches, making contact between the branches and the pieces to be united, and passing currents of unequal strength through said branches, according to the conductivity of the pieces to produce the same welding temperature in the plurality of pieces simultaneously. 6th. The herein described process of welding metals electrically, consisting in making contact with both pieces independently of each other, passing a current of greater strength through one pieces than the other until the pieces are sufficiently heated, moving one of said contacts, and then pressing the pieces together as desired. 7th. The method of manufacturing angle joints of pieces of metal, consisting in clasping the pieces to be welded together at the desired angle to each other, passing a current through said pieces until they are sufficiently softened, and then pressing the pieces together to unite them while maintaining them at the angle at which they were clamped. 8th. The method of manufacturing angle joints of pieces of metal, consisting in clamping the pieces to be welded together at the desired angle to each other, passing a current through each of said pieces until they are sufficiently softened, proportioning the strength of the currents to the conductivity of the pieces, and then pressing the pieces together to unite them while maintaining them at the angle at which they are clamped.

No. 42,087. Method of Electric Welding.

(*Méthode de soudure électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The improvements in electric welding, consisting in twisting the material at the welding junction, while said junction is electrically heated. 2nd. The improvement in electric welding, consisting in electrically heating the parts to be united, and then applying pressure or force tending to move together the pieces to be welded, and to twist them at the junction. 3rd. The method or process of metal working, consisting in electrically heating and softening the junction of pieces of metal by traversing it with a heavy electric current, and then applying a force to twist the metal at the junction. 4th. the herein described method of electric welding, consisting in passing an electric current through the metal from one side to the other of the joint, and then applying lateral pressure on the metal at the part where the joint is to be formed, together with a force tending to twist said part. 5th. The herein described method of electric welding, consisting in suitably shaping and lapping the ends of the pieces of metal to be united, passing an electric current through the pieces from one side to the other of the joint, and then applying pressure or force tending to move together the pieces to be welded and to twist them at the point of union. 6th. The method of electric welding, consisting in applying to suitably guided and clamped pieces to be joined a heavy electric current at the junction to soften them, and a force to twist and compress the pieces. 7th. The method of electric welding, consisting in applying to suitably guided and clamped pieces to be joined, a heavy electric current at the junction simultaneously with a force to twist the pieces.

No. 42,088. Electric Railway Car.

(*Char de chemin de fer électrique.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A., 24th February, 1893; 6 years.

Claim.—1st. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, a current collector extending from the vehicle to the conductor, an electric connection between said motor and collector, one or more signal bells, and a plurality of circuit makers and breakers in said electric connection, and a shunt including a resistance around said signal bell or bells and circuit makers and breakers. 2nd. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, a current collector extending from the vehicle to the conductor, an electric connection between said motor and collector, one or more signal bells, and a plurality of circuit makers and breakers in said electric connection, a shunt including a resistance around said signal bell or bells and circuit makers and breakers, and means for automatically varying said resistance to maintain a uniform flow of current through the signal devices independent of the flow of current through the motor. 3rd. The combination of a suspended working conductor, an electrically propelled vehicle, a current collector extending from the vehicle to the suspended conductor, an electric motor, and electric audible signal device, a plurality of current controllers distributed through the interior of the vehicle, and a circuit including said motor said signal device and controllers and receiving current from the current collector 4th. The combination of a suspended working-conductor, an electrically propelled vehicle, a current collector extending from the vehicle to the suspended conductor, an electric motor, an electric signal device, a plurality of current controllers distributed through the interior of the vehicle, and a circuit, including said motor, signal device and controller and receiving current from the current-collector. 5th. The combination of a suspended working conductor, an electrically-propelled vehicle, a current collector extending from the vehicle to the suspended conductor, an electric connection between the propelling motor and the current collector, an electric audible signal device, a plurality of current controllers distributed through the interior of the vehicle, and a normally-closed circuit including said signal device and controllers and receiving current from the current-collector. 6th. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel the said vehicle, an electric connection between the said motor and working conductor, an electric signal device on the vehicle, and a plurality of current controlling devices distributed through the interior of the vehicle and included in circuit in series with the motor. 7th. In an electric railway a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, an electric bell on the vehicle, and a plurality of circuit breakers distributed through the interior of the vehicle and included in circuit in series with the motor. 8th. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, an electric bell on the vehicle, and a plurality of circuit breakers distributed at intervals through the interior of the vehicle and included in circuit in series with the motor. 9th. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, a current collector extending from the vehicle to the conductor, an electric connection between said motor and collector, one or more signal bells, and a plurality of circuit makers and breakers in said electric connection, distributed through the interior of the vehicle, and a shunt including a resistance around said signal bell or bells and circuit makers or breakers. 10th. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, a current collector extending from the vehicle to the conductor, an electric connection between said motor and collector, two electric signal

devices, and a plurality of circuit makers and breakers in said electric connection, a shunt including a resistance around said signal devices, and a means for preventing the operation of each of said signal devices without short circuiting the same. 11th. The combination of a suspended conductor, an electrically propelled vehicle, a movable current collector extending from the vehicle to the suspended conductor, two electric signal bells and a plurality of circuit makers and breakers distributed through the interior of the vehicle, a circuit connected with said signal bells and makers and breakers and receiving current from the current collector, and means for preventing the operation of each of said signal bells without short-circuiting the same. 12th. The combination of a line working conductor extending along the path of the vehicle, an electrically propelled vehicle, a current collector on the vehicle for collecting current from the working conductor, an electric motor to propel the vehicle, an electric signal device, a plurality of current controllers distributed at intervals through the interior of the vehicle, and electrical connections on the vehicle connecting the said motor, signal device and controllers with the said collector.

No. 42,089. Method of Utilizing Electricity in the Formation of Sheet Metal Articles. (*Méthode d'utiliser l'électricité dans la formation du métal en feuille.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The method of utilizing electricity in the formation of sheet metal articles, consisting in electricity heating a sheet of metal, applying a suitable force to form the sheet as desired, and maintaining said sheet of metal in the heated condition while it is thus formed. 2nd. The method of utilizing electricity in the formation of sheet metal articles, consisting in passing a current of electricity through a sheet of metal to soften the same, and then gradually forming said sheet by pressure over a die or mold. 3rd. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal while in position upon a die or mold, and applying pressure to gradually form the sheet to correspond to the form of the surface of the die or mold. 4th. The method of utilizing electricity in the formation of sheet metal articles, consisting in passing a current of electricity through a sheet of metal between two points to soften the same, and then gradually applying pressure to form the sheet over a suitable circular die or mold. 5th. The method of utilizing electricity in the formation of sheet metal articles, consisting in passing a current of electricity through a sheet of metal between two points, one at or near the center, and the other nearer the edge or periphery of the sheet to soften the same, and then applying pressure to the sheet to form the same over a suitable die or mold surface. 6th. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal while it is rotated and gradually formed or spun over or upon a suitable die or mold. 7th. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal by passing a current of electricity through the same while it is rotated, and formed or spun upon a suitable die or mold surface. 8th. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal by passing a current of electricity through the same while it is rotated, and formed or spun upon suitable die or mold surface. 8th. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal by passing a current of electricity through the same while it is rotated and formed or spun upon a suitable die or mold surface, and passing said current between two points, one at or near where the sheet is held by the rotating device and the other where the pressure instrument is applied. 9th. The method of utilizing electricity in the formation of sheet metal articles, consisting in communicating a rapid circular motion to a sheet of metal held against a mold, passing a heating current of electricity through the sheet to soften the same, and then by means of a suitable instrument applying pressure to successive points upon the sheet to form said sheet to correspond to the form of the surface of the mold. 10th. The method of utilizing electricity in the forming of sheet metal articles, consisting in communicating a rapid circular motion to a sheet of metal and a mold held against it, passing a heating current of electricity through the sheet to soften the same, and then applying pressure with a movable instrument upon successive parts of sheet and toward the said to conform said sheet to the form of the surface of the mold. 11th. The method of utilizing electricity in the forming of sheet metal articles, consisting in communicating a rapid circular motion to a flat disc-shaped sheet of metal, and a mold held against it, passing a heating current of electricity through the sheet to soften the same, and then applying pressure with a movable instrument upon successive parts of the sheet and toward the mold to conform said sheet to the form of the surface of the mold. 12th. The method of utilizing electricity in the forming of sheet metal articles, consisting in communicating a rapid circular motion to a sheet of metal and a mold held against it, electrically heating the sheet while in motion to soften the same, and then applying pressure with an instrument upon successive parts of the sheet beginning at or near the center and gradually approaching the edge and toward the mold, to conform said sheet to the form of the surface of the said. 13th. The method of utilizing electricity in the formation of sheet metal articles, consisting in electrically heating a sheet of metal to soften the same, and then gradually applying pressure to form the sheet over a suitable die or mold.

No. 42,090. Apparatus for Shaping Sheet Metal Electrically. (*Appareil pour façonner le métal en feuille par l'électricité.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A.; 24th February, 1893; 6 years.

Claim.—1st. In an apparatus for forming sheet-metal articles, the combination with the drawing die and punch, of connections to pass an electric current through the sheet while it is operated upon or formed, or means for imparting pressure with the said die and punch upon the sheet to conform the latter to the surfaces of the die and punch. 2nd. In an electric apparatus for forming sheet-metal articles, the combination, with a drawing die and punch, of electric connections connected with the blank-holders to pass an electric current through the sheet while it is operated upon or formed and means for imparting pressure with the said die and punch upon the sheet to conform the latter to the surfaces of the die and punch. 3rd. In an electric apparatus for forming sheet-metal articles, the combination, with a circular drawing die and punch, of connections to pass an electric current through the sheet while it is operated upon or formed and means for imparting pressure with the said die and punch upon the sheet to conform the latter to the surfaces of the die and punch. 4th. In an electric apparatus for forming sheet-metal articles, the combination, with an insulated drawing die and punch, of connections to pass an electric current through the sheet while it is operated upon or formed and means for imparting pressure with the said die and punch upon the sheet to conform the latter to the surfaces of the die and punch. 5th. In an electric apparatus for forming sheet-metal articles, the combination, with a drawing die and punch, of connections to pass an electric current through the sheet while it is operated upon or formed, means for imparting pressure with the said die and punch upon the sheet to conform the latter to the surfaces of the die and punch, and means for cutting the formed articles from the blank when it is nearly or entirely formed.

No. 42,091. Method of Utilizing Electricity in the Formation of Metallic Cartridge Cases. (*Méthode d'utiliser l'électricité dans la formation des cartouchières métalliques.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A., 24th February, 1893; 6 years.

Claim.—1st. The herein described improvement in processes of manufacturing cartridge cases, which consists in forming the case by drawing or stamping the same from thin metal and electrically heating the case during its formation, as, and for the purpose described. 2nd. The herein described improvement in processes of manufacturing cartridge cases, which consists in forming the case by drawing or stamping the same from a sheet of thin metal and electrically maintaining the case in a heated condition during its formation. 3rd. The herein described improvements in processes of manufacturing cartridge cases, which consists in forming the case by drawing or stamping the same from a sheet of thin metal and annealing the case during its formation or before its completion by passing a heating current of electricity through the same. 4th. The herein described improvement in processes of manufacturing cartridge cases, which consists in forming the case by drawing or stamping the same from a sheet of thin metal and electrically heating the case during its formation by passing a heating current of electricity through the same and from one die to the other, as and for the purpose described. 5th. The herein described improvement in processes of manufacturing cartridge cases, consisting in cutting a disc of metal from a sheet, then drawing or stamping the full length cup from the disc at one operation while the blank is electrically heated, and then heating and finishing the cup, as desired, to complete the case. 6th. The herein described improvement in processes of manufacturing cartridge cases, which consists in forming the case from a single piece of metal of uniform thickness by drawing, swaging, or otherwise shaping it, as desired, and electrically heating the metal during its formation or before the case is completed.

No. 42,092. Electric Lighting and Heating Apparatus for Electric Railways. (*Appareil de chauffage et d'éclairage par l'électricité pour chemins de fer électriques.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The combination, with an electrically propelled vehicle, working conductors supplied with direct current along the path of said vehicle, conductors on the vehicle in contact with the working conductors and the electric motor for propelling the vehicle, with controlling devices connected with the vehicle conductors, of a shunt circuit, of the vehicle conductor around the said motor and its controlling devices, a second electric motor and controlling device in said shunt circuit, a second shunt circuit around both motors and their controlling devices, a pulsator operated by the second motor,

and a primary coil of an inductional transformer in the second shunt circuit, a secondary circuit of low resistance, in circuit with the secondary coil of said transformer, a plurality of lamps in multiple arc connection with the secondary circuit, and means for switching each of said lamps out of circuit independently of the others. 2nd. The combination, with an electrically propelled vehicle, working conductors supplied with direct current along the path of said vehicle, conductors on the vehicle in contact with the working conductors and the electric motor for propelling the vehicle, and controlling devices connected with the vehicle conductors, of a shunt circuit of the vehicle conductors around the said motor and controlling devices, a second shunt circuit around both motors and their controlling devices, a pulsator operated by the second motor, and a primary coil of an inductional transformer in the second shunt circuit, a secondary circuit of low resistance, in circuit with the secondary coil of said transformer, a plurality of lamps in multiple arc connection with the secondary circuit, and means for cutting said lamps out of circuit. 3rd. The combination, with an electrically propelled vehicle, working conductors supplied with direct current along the path of said vehicle, conductors on the vehicle in contact with the working conductors, and the electric motor for propelling the vehicle, and controlling devices connected with the vehicle conductors, of a shunt circuit of the vehicle conductor around the said motor and its controlling devices, a second electric motor and its controlling devices in said shunt circuit, a second shunt circuit around both motors and controlling devices, a pulsator operated by the second motor, and a primary coil of an inductional transformer in the second shunt circuit, a secondary circuit of low resistance in circuit with the secondary coil of said transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 4th. The combination, with an electrically propelled vehicle, the supply conductors on the vehicle, and the electric motor for propelling the vehicle, and controlling devices connected with the said supply conductors, of a shunt circuit, said supply conductors, a second electric motor in said shunt circuit, a pulsator operated by the second motor, and a primary coil of a transformer in shunt circuit, a secondary circuit, including the secondary coil of said transformer and a plurality of lamps connected in the secondary circuit in multiple arc, 5th. The combination, with an electrically propelled vehicle, the supply conductors on the vehicle and the electric motor for propelling the vehicle, and controlling devices connected with the said supply conductors, of a shunt circuit of the said supply conductors, a second electric motor in said shunt circuit, a pulsator operated by the second motor, and a primary coil of a transformer in shunt circuit, a secondary circuit including the secondary coil of said transformer, a plurality of lamps in multiple arc connection with the secondary circuit, and means for cutting each of said lamps out of circuit. 6th. The combination, with a vehicle, the conductors of the vehicle connected with a source of direct current and a translating device and means for controlling the same, connected in circuit with the said conductors, of a shunt circuit around both the said translating and controlling devices, an electric motor in the shunt circuit, a pulsator operated by the motor, and a primary coil of a transformer in shunt circuit, a secondary circuit, including the secondary coil of the transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 7th. The combination, with a vehicle, the conductors on the vehicle connected with a source of direct current, and a translating device, and means for controlling the same in circuit with said conductors, of a shunt circuit around both the translating and controlling devices, an electric motor and resistance in the shunt circuit, a second shunt circuit around said motor and resistance, a pulsator operated by the motor, and a primary coil of a transformer in the second shunt circuit, a secondary circuit of low resistance, including the secondary coil of the transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 8th. The combination, with a vehicle, the conductors on the vehicle connected with a source of direct current, and a translating device, and controlling devices therefor in circuit with said conductors, of a shunt circuit around said devices, an electric motor and a rheostat in the shunt circuit, a second shunt circuit around said motor and rheostat, a pulsator operated by the motor, and a primary coil of a transformer in the second shunt circuit, a secondary circuit of low resistance, including a secondary coil of the transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 9th. The combination, with the vehicle, the conductors on the vehicle connected with a source of direct current, and a translating device and controlling devices therefor in circuit with said conductors, of a shunt circuit around said devices, an electric motor and a rheostat in the shunt circuit, a second shunt circuit around said motor and rheostat, a pulsator operated by the motor, and a primary coil of a transformer constructed to vary the current flowing through said primary coil in proportion to the number of lamps in circuit and in the second shunt circuit, a secondary circuit of low resistance, including the secondary coil of the transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 10th. The combination with an electrically propelled vehicle, working conductors supplied with direct current along the path of the said vehicle conductors on the vehicle, in movable contact with the working conductors, and the electric motor for propelling the vehicle and its controlling devices in circuit with the vehicle conductors, of a shunt circuit on said vehicle around the motor and its controlling devices, a second electric motor and adjustable resistance in said shunt circuit, a second shunt circuit around both motors and their controlling devices, a pulsator operated by the second motor, a primary coil of a transformer in the second shunt circuit, a secondary circuit of said transformer, and a plurality of lamps connected in the secondary circuit in multiple arc. 11th. The combination with a vehicle, working conductors supplied with direct current along the path of said vehicle, the conductors on the vehicle, and a translating device and controlling devices therefor in circuit with said vehicle conductors, of a shunt circuit around said devices, an electric motor in the shunt circuit, a second shunt circuit around said devices, a pulsator operated by the motor, and a primary coil of a tranformer in the second shunting circuit, a secondary circuit of low resistance, and a plurality of lamps connected in the secondary circuit in multiple arc. 12th. The combination with an electrically propelled vehicle, working conductors supplied with direct current along the path of the vehicle, a conductor on the vehicle having its terminals in movable connection with the working conductors, and an electric motor in the vehicle conductor for propelling the vehicle, of a shunt circuit around the motor, an electric pulsator in said shunting circuit, an inductional transformer having its primary in the shunt circuit, a secoindary circuit, and translating device connected in the secondary circuit in multiple arc. 13th. The combination with an electrically propelled vehicle, working conductors supplied with direct current along the path of said vehicle, a conductor on the vehicle having its terminals in movable connections with the working conductors, and an electric motor in the vehicle conductor for propelling the vehicle, of a shunt circuit around the motor, means for inductionally tranforming the current in the shunt circuit, two secondary circuits of different conductivity, and translating devices connected in each of said secondary circuits in multiple arc. 14th. In combination with an electrically propelled vehicle, working conductors supplied with direct current along the path of the vehicle, a conductor on the vehicle having its terminals in movable connection with the working conductors, and an electric motor in the vehicle conductor for propelling the vehicle, of a shunt circuit around the motor, an electric pulsator in said shunt circuit, two inductional transformers having their primaries connected in the shunt circuit in multiple arc relation, secondary circuits of different conductivity for the transformers, and translating devices connected in each of said secondary circuits in multiple arc. 15th. The combination with an electrically propelled vehicle, working conductors supplied with direct current along the path of said vehicle, a conductor of the vehicle having its terminals in movable connection with the working conductors, and an electric motor in the vehicle conductor for propelling the vehicle, of a shunt circuit around the motor, an electric pulsator in said shunt circuit, an inductional tranformer having its primary in the shunt circuit, a secondary circuit, translating devices connected in the secondary circuit in multiple arc, and means for cutting one or more of said translating devices out of circuit.

No. 42,093. Method of Electrically Heating Bars, etc., for Welding and Working Purposes. (*Méthode de chauffer par l'électricité les barres, etc., devant être travaillées au soudées.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in embedding the bars or blanks in a yielding bed of conducting material, passing a heavy electric current through said bed to heat the same, and then applying a force to weld or shape the said bars or blanks while heated. 2nd. The herein described method for electrically heating bars or blanks for welding or working purposes, consisting in passing an electric heating current through a yielding bed of conducting material. then embedding the bars or blanks therein to heat or soften them, and then applying a suitable force to weld or shape the said bars or blanks while in a softened condition. 3rd. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in embedding the bars or blanks in a yielding bed of low conducting material located between electric terminals and supported upon non-conducting material, passing an electric current through said bed between the terminals to heat or soften the bars or blanks embedded therein, and then applying a suitable force to weld or shape the bars or blanks as desired. 4th. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in embedding the bars or blanks in a suitable position in a yielding bed of low conducting material located between the electric terminals, passing an electric current through said bed between the terminals to heat or soften the bars or blanks embedded therein, and then applying a suitable force to perform the operation desired upon the bars or blanks while in position. 5th. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in embedding the bars or blanks in a bed of powdered or granulated conducting material located between electric terminals, passing an electric current through said bed to heat the same and the bars and blanks, and then applying a suitable force to perform the operation desired upon the bars or blanks while in position. 6th. The herein described method of electrically heating bars or blanks for welding and working purposes, consisting in

embedding a portion of the bar or blank in a yielding bed of conducting material located between electric terminals while the other portion is not embedded, and passing an electric current through said bed to heat the same and the portion of the bar or blank embedded. 7th. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in passing an electric current through a yielding bed of powdered or granulated semi-conducting material located between electric terminals, then embedding the bars or blanks therein until sufficiently heated, and removing them without interrupting the current through the bed. 8th. The herein described method for electrically heating blanks or bars for welding and working purposes, consisting in embedding the bars or blanks in a yielding bed of conducting material, shaping said bed to create an uniform resistance to the current supporting the bed in a non-conducting receptacle, and passing a heavy electric current through said bed to heat the same. 9th. The herein described method for electrically heating bars or blanks for welding and working purposes, consisting in first passing an electric current through a yielding bed of conducting material until it is heated, and then embedding the work in said bed until it has reached the desired temperature.

No. 42,094. Apparatus for Forming Sheet Metal Electrically. (*Appareil pour former le métal en feuille par l'électricité.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A.; 24th February, 1893; 6 years.

Claim.—1st. In an electric apparatus for forming sheet-metal articles, the combination, with a die or mold, of means of holding and rotating said die or mold with a sheet of metal to be operated upon, connections to pass an electric current through the sheet while it is rotated, and means for imparting pressure to the sheet to conform the same to the surface of said die or mold. 2nd. In an electric apparatus for forming sheet metal articles, the combination, with a suitable die or mold, of means for holding and rotating said die or mold with the sheet of metal to be operated upon, a pressure instrument to gradually conform the sheet to the form of the surface of the said mold, and terminals of an electric circuit in contact with the sheet, one at its center or axis and the other at a point nearer the edge or periphery of the sheet. 3rd. In an electric apparatus for forming sheet-metal articles, the combination, with a suitable die or mold, of means for holding and rotating said die or mold with the sheet of metal to be operated upon, a pressure instrument to gradually conform the sheet to the form of the surface of the said mold, and terminals of an electric circuit connected to the sheet, one terminal constituting the head stock of the rotating means and the other terminal the pressure instrument. 4th. In an electric apparatus for forming sheet-metal articles, the combination, with a suitable die or mold, of means for holding and rotating said die or mold with the sheet of metal to be operated upon, a pressure instrument having a revolving bearing to gradually conform the sheet to the form of the surface of the said mold, and terminals of an electric circuit in contact with the sheet. 5th. In an electric apparatus for forming sheet-metal articles, the combination, with a suitable die or mold, of means of holding and rotating said die or mold with the sheet of metal to be operated upon, a universally movable pressure instrument to gradually conform the sheet to the form of the surface of the said mold, and terminals of an electric circuit in contact with the sheet. 6th. In an apparatus for electrically forming sheet metal articles, the combination of a die or mold, means for holding the sheet against said die or mold, and a movable pressure instrument to conform the sheet to the shape of the surface of the mold, and electric terminals in contact with the sheet. 7th. In an apparatus for electrically forming sheet-metal articles, the combination of a die or mold, means for holding the sheet against said die or mold, and a movable pressure instrument to conform the sheet to the shape of the surface of the mold, and electric connections leading to said means for holding the sheet against the mold and to the movable pressure instrument.

No. 42,095. Electric Railway.

(*Chemin de fer électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. In an electric railway, a source of irregular or alternating currents, a line working conductor extended therefrom, a series of coils distributed apart along the way and connected with the conductor in series, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and means carried by the vehicle to cause the generation of counter electro-motive force in one or more of the said coils near the vehicle. 2nd. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, a paramagnetic core or body for each of said coils, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and means carried by the vehicle to cause the generation of counter electro-motive force in one or more of the said coils near the vehicle and between the connections. 3rd. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, a paramagnetic core or body for each of said coils, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and a paramagnetic body carried by the vehicle to cause the generation of counter electro-motive force in one or more of the said coils near the vehicle and between the connections. 4th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils, pole pieces for said cores extending along the way, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the said connections. 5th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils, pole pieces for said cores extending along the way and beyond or in proximity to the surface of the road bed, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle, and arranged to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the said connections. 6th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils, pole pieces for said cores extending along the way and on opposite sides of the centre of the road bed, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the said connections. 7th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way, and connected with the conductor in series, an iron core for each of said coils, pole pieces for said cores extending along the way and on opposite sides of the centre of the road bed, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged in suitable inductional relation to said poles to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the said connections. 8th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way, and connected with the conductor, an iron core for each of said coils and having exposed poles, a vehicle, an electric motor to propel said vehicle, electric connections leading to the motor, and an iron body carried by the vehicle and arranged to make contact with said poles to maintain one or more closed magnetic circuits at or near the vehicle during its movement. 9th. In an electric railway, a source of irregular or alternate currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils, and having exposed poles extending along the way, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged to make contact with said poles to maintain one or more closed magnetic circuits at or near the vehicle during its movement to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the connections. 10th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way, and connected with the conductor in series, a laminated iron bore for each of said coils, and having exposed poles extending along the way, a vehicle, an electric motor to propel said vehicles, electric connections between the said motor and working conductor, and a laminated iron body carried by the vehicle and arranged to make contact with said poles to maintain one or more closed magnetic circuits at or near the vehicle during its movement to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the connections. 11th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils, and having exposed poles extending along the way, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged to make a yielding or flexible contact with said poles to maintain one or more closed magnetic circuits at or near the vehicle during its movement to cause the generation of counter electro-motive force in one or more of said coils at or near the vehicle and between the connections. 12th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom along the railway, a series of coils connected to the conductor and distributed at intervals along the way. cores for the coils having their poles in contact with the rails, a rail along the railway constructed of sections of iron and

alternate sections of non-magnetic metal, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and paramagnetic or iron wheels and axles for the vehicle. 13th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom along the railway, a series of coils connected to the conductor and distributed at intervals along the way, cores for the coils having their poles in contact with the rails, rails along the railway parallel with each other, each constructed of sections of iron and alternate sections of non-magnetic metal, a car, an electric motor to propel said car, electric connections between said motor and working conductor, and an iron body moved with the car and making contact with said rails. 14th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a slotted conduit containing the conductor, a series of coils distributed apart along the way and connected with the conductor in series, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and means carried by the vehicle to cause the generation of counter electromotive force in one or more of the said coils near the vehicle. 15th. In an electric railway, a source of irregular or alternating currents, a line working conductor extending therefrom, a slotted conduit containing the conductor, a series of coils distributed apart along the way and connected with the conductor in series, an iron core for each of said coils and having exposed poles extending along the way, a vehicle, an electric motor to propel said vehicle, electric connections between said motor and working conductor, and an iron body carried by the vehicle and arranged to make contact with said poles, to maintain one or more closed magnetic circuits at or near the vehicle during its movement to cause the generation of counter electro-motive force in one or more of the said coils at or near the vehicle and between the connections.

No. 42,096. Method of Electrically Soldering and Cementing Cans. (*Méthode de souder et cimenter par l'électricité les boîtes en fer blanc.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A., 24th February, 1893; 6 years.

Claim.—1st. The herein described method of electrically soldering or cementing together the parts of cans, consisting in suitably applying the solder or cement to the junction of the parts, passing a heating electric current through and between the parts, bringing a tool in contact with the solder or can, and then moving the tool along the said junction, as and for the purpose described. 2nd. The herein described method of electrically soldering or cementing together the parts of cans, consisting in suitably applying the solder or cement to the junction of the parts, passing a heating electric current through and between the parts, applying force to press the said parts together, bringing a tool in contact with the solder or can, moving the tool along the said junction, removing the said tool after the solder is distributed, cutting off the current, and maintaining the pressure upon the parts while they are cooling. 3rd. The herein described method of electrically soldering the caps on metal cans, consisting in suitably applying solder to the junction of cap and can, passing a heating electric current through and between the said parts, applying force to press the said parts together, bringing an iron or tool in contact with the solder or can moving the said tool after the solder is sufficiently melted and distributed, simultaneously therewith cutting off the current, and maintaining the pressure upon the parts while they are cooling. 4th. The herein described method of electrically soldering the caps on metal cans, consisting in suitably applying solder to the junction of the cap and can, passing a heating electric current through and between the said parts, applying force to press said parts together, bringing a circular iron or tool in contact with the solder or can, moving the said tool along the junction, removing the tool after the solder is sufficiently melted and distributed, simultaneously therewith cutting off the current, and maintaining the pressure upon the parts while they are cooling. 5th. The herein described method of electrically soldering the caps on metal cans, consisting in placing the caps in position upon the can, suitably applying solder to the junction of the parts, applying force to press the parts together, bringing one terminal of an electric circuit in contact with the cap and the other terminal in contact with the solder or can, and passing an electric heating current through the junction and solder between the said terminals. 6th. The herein described method of electrically soldering the caps on metal cans, consisting in placing the cap in position upon the can, suitably applying solder to the junction of the parts, applying force to press the parts together, bringing the terminal of an electric circuit in contact with the cap and the other terminal in contact with the solder or can, passing an electric heating current through the junction and solder between the said terminals, and moving the terminal in contact with the solder along the joint. 7th. The herein described method of electrically soldering the caps on metal cans, consisting in placing the cap in position upon the can, suitably applying solder to the junction of the parts, applying force to press the parts together, bringing one terminal of an electric circuit in contact with cap and the other terminal in contact with the solder or can, passing an electric heating current through the junction and solder between the said terminals, moving the terminal in contact with the solder along the joint until the solder is sufficiently melted and distributed, and then removing said terminal and allowing the work to cool under pressure. 8th. The herein described method of electrically soldering the caps on metal cans, consisting in placing the cap in position upon the can, suitably applying solder to the junction of the parts, applying force to press the parts together, bringing one terminal of an electric circuit in contact with the cap and the other terminal in contact with the solder or can, passing an electric heating current through the junction and solder between the said terminals, moving the terminal in contact with solder along the joint until the solder is sufficiently melted and distributed, and then removing said terminal and allowing the work to cool under pressure of the terminal on the cap.

No. 42,097. Apparatus for Soldering and Cementing Cans by Electricity. (*Appareil pour souder et cimenter par l'électricité les boîtes en fer blanc.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. In an electric soldering or cementing apparatus for cans, terminals of an electric circuit to be applied to the work, and a movable tool for distributing or sweating in the solder or cement at the junction. 2nd. In an electric soldering or cementing apparatus for cans, terminals of an electric circuit to make contact with the work, a movable tool for distributing or sweating in the solder or cement at the junction, and means for pressing the pieces together, and maintaining the pressure after the removal of one of the terminals. 3rd. In an apparatus for electrically soldering the caps on cans, a pressure instrument to be applied to the cap and connected to one terminal of an electric circuit, a rotatable soldering tool connected to the other terminal of the circuit, and means for removing the soldering tool from the work before pressure instrument is removed, as and for the purpose described. 4th. In an apparatus for electrically soldering the caps on cans, a suitable source of electricity, a series of pressure instruments to press the caps upon the cans and connected to one terminal of said source, a series of rotatable soldering tools connected to the other terminal of the source and adapted to be brought simultaneously to the joints, and means for removing the said soldering tools simultaneously from the work before the pressure instrument are removed, as and for the purpose described. 5th. In an apparatus for electrically soldering the caps on cans, means for electrically heating the pieces at the junction, and a rotatable iron or tool to make contact with the solder. 6th. In an apparatus for electrically soldering the caps on cans, means for electrically heating the pieces at the junction, a movable iron or tool to make contact with the solder at the junction and to move while in contact with the same, and means for applying pressure to press the pieces together when the said iron or tool is removed. 7th. In an apparatus for electrically soldering the caps on cans, means for electrically heating the pieces at the junction, a movable iron or tool to make contact with the solder at the junction and to move while in contact with the same, and means for applying pressure to press the pieces together. 8th. In an apparatus for electrically soldering the caps on cans, a pressure instrument to be applied to the cap and connected to one terminal of an electric circuit, a rotatable soldering tool connected to the other terminal of the circuit, and mounted loosely upon the shaft of the pressure instrument, insulation for separating the latter from the soldering tool, and means for removing the soldering tool from the work before the pressure instrument is removed, as and for the purpose described.

No. 42,098. Electric Welding Apparatus.

(*Appareil de soudure électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. In an electric welding apparatus, the combination of a clamp adapted to compress the work laterally and having one jaw insulated from the other, terminals of an electric circuit connected to said jaws, grooves in the inner faces of said jaws transverse to the line of movement of the movable jaw, and suitable means to apply lateral pressure to the work with said clamp. 2nd. In an electric welding apparatus, the combination of a clamp adapted to compress the work laterally and having one jaw insulated from the other, a table or support for the work between but beneath the jaws, terminals of an electric circuit connected to said jaws, and suitable means to apply lateral pressure to the work with said clamp. 3rd. In an electric welding apparatus, the combination of a clamp adapted to compress the work laterally and having one jaw insulated from the other, terminals of an electric circuit connected to said jaws, suitable means to apply lateral pressure to the work with said clamp, grooves in the inner faces of said jaws transverse to the line of movement of the movable jaw, and a stop to limit the movement of one of the jaws. 4th. In an electric welding apparatus, the combination of a clamp adapted to compress the work laterally and having one jaw insulated from the other, terminals of an electric circuit connected to said jaws, suitable means to apply lateral pressure to the work with said clamp, and an adjustable stop to limit the movement of one of the jaws. 5th. In an electric welding apparatus, the combination of a clamp adapted to compress the work laterally and having one jaw insulated from the other, terminals of an electric circuit connected to said jaws, suitable means to apply lateral pressure to the work with said clamp, and an automatic adjustable cut out or short circuiting device, for

the purpose described. 6th. The combination, with an electric lap joint welding apparatus, of stops for limiting the length of the lap. 7th. The combination, with an electric lap joint welding apparatus, of adjustable stops for limiting the length of the lap. 8th. In a ring or hoop welding apparatus, a counter electro-motive force device supported on the frame of the welding apparatus and adapted to be moved toward and from the pressure devices to accommodate different sizes or diameters or hoops. 9th. In a ring or hoop welding apparatus, a counter electro-motive force device supported on the frame of the welding apparatus, and means to automatically operate or open and close said device. 10th. In a ring or hoop welding apparatus, a counter electro-motive force device supported on the frame of the welding apparatus, and means to automatically operate or open and close said device simultaneously with the movement of the pressure devices. 11th. In a ring or hoop welding apparatus, a counter electro-motive force device supported on the frame of the welding apparatus, and a treadle to operate or open and close apparatus, and a treadle to operate or open and close said device.

No. 42,099. Method of Electric Welding and Metal Working. (*Méthode de soudre et travailler le métal par l'électricité.*

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with one terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, and passing a suitable heating current through the bar or blank, or a portion thereof, and the yielding bed. 2nd. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with one terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, passing a suitable heating current through the bar or blank, or a portion thereof, and the yielding bed, and subjecting a portion of the bar or blank to magnetism. 3rd. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with a universally movable terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, and passing a suitable heating current through the bar or blank, or a portion thereof, and the yielding bed. 4th. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with one terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, passing a suitable heating current through the bar or blank, or a portion thereof, and the yielding bed, until sufficiently heated, and then removing the bar or blank from the bed and performing the operation desired upon the same. 5th. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with one terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, passing a suitable heating current through the bar or blank, or a portion thereof, and the yielding bed, until sufficiently heated, and then removing the bar or blank from the bed and performing the operation desired upon the same while upon a magnet. 6th. The herein described method for electrically heating a bar or blank for welding or working purposes, consisting in connecting the said bar or blank with one terminal of an electric generator, embedding the portion of the bar or blank to be worked in a yielding bed of conducting material in connection with the other terminal, passing a suitable heating current through the bar or blank or a portion thereof, and the yielding bed until sufficiently heated, and then removing the bar or blank from the the bed and applying pressure or force to work the same while under the influence of magnetism, or upon a magnetic anvil. 7th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting the said bar or blank with one terminal of an electric generator, bringing an end or other portion of the bar or blank to be worked in contact with a pole of a magnet, passing a heating current through and between the bar or blank and the magnet, and then applying pressure or force to work the same while under the influence of the magnet. 8th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting a bar or blank with one terminal of an electric generator, bringing an end or other portion of the bar or blank to be worked in contact with a pole, of a magnetic anvil in connection with the other terminal of the generator, passing a heating current through and between the bar or blank and the magnetic anvil, and applying pressure or force to weld or work the bar or blank while upon the said anvil. 9th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting a bar or blank with the terminals of an electric generator, passing a heating current through the bar or blank, bringing the latter in contact with a magnetic anvil, and then applying force to weld or otherwise work the said bar or blank. 10th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting a bar or blank with the terminals of an electric generator, passing a heating current through the bar or blank, bringing the latter in contact with a magnetic anvil, and then applying force to weld or otherwise work the said bar or blank while handling and moving the latter, as desired. 11th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting the bars or blanks to be welded together to one terminal of an electric generator, bringing the ends or other desired portions of the bars or blanks to be welded together in contact with a yielding bed of conducting material connected to the other terminal of the generator, placing the ends or parts to be welded together in contact with each other, and then applying force to unite the parts. 12th. The method of electrically heating and welding or working metal bars or blanks, consisting in connecting the bars or blanks to be welded together to one terminal of an electric generator, bringing the ends or other desired portions of the bars or blanks to be welded together in contact with a yielding bed of conducting material connected to the other terminal of the generator, placing the ends or parts to be welded together in contact with each other, and then applying force to unite the parts while under the influence of a magnet.

No. 42,100. Transmitter for Electric Motion.

(*Transmetteur pour mouvement électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The combination of a shaft to be driven, an electric motor having its armature mounted loosely upon said shaft, and axially concentric with the same, electric speed reducing mechanism for transmitting motion from the armature to the shaft and connected to the said armature and shaft, consisting of one or more magnets in circuit with a source of electricity, and a conductor in proximity to said magnets. 2nd. The combination, with an electric motor and a shaft or wheel to be driven, of a speed reducing mechanism directly connected to the armature or the rotating part of the motor, and to the said shaft or wheel to be driven, and consisting of one or more magnets in circuit with a source of electricity, and a conductor in proximity to said magnets. 3rd. The combination, with an electric motor and a shaft or wheel to be driven, of an electric speed reducing mechanism directly connected to the moving part of the motor and to the said shaft or wheel to be driven, and consisting of two parts in close proximity to and adapted to electrically attract each other. 4th. The combination, with an electric motor and a shaft or wheel to be driven, of an electric speed reducing mechanism for transmitting motion from the motor to the shaft or wheel, consisting essentially of two parts one or more magnets and a conductor arranged to move in proximity to the poles of said magnet or magnets one part being connected to the motor and the other connected to the shaft or wheel. 5th. The combination, in a mechanism for transmitting a reduced speed to a shaft or wheel to be driven of a series of magnets connected with an electric circuit and arranged to be moved, a conductor arranged to move in proximity to the poles of said magnets and mechanically connected to the said shaft or wheel, and a motor to move the magnets. 6th. The combination, in a mechanism for transmitting a reduced speed to a shaft or wheel to be driven, of two parts, one consisting of one or more movable plates or discs of conducting material and the other of a series of magnets arranged to be moved with their poles in proximity to both sides of the one or more plates or discs, and means connected to one of the said parts to rotate the same, as and for the purpose described. 7th. The combination, in a mechanism for transmitting a reduced speed to a shaft or wheel to be driven, of two parts, one consisting of one or more movable plates or discs of conducting material, and the other of a series of magnets arranged to be moved with their poles in proximity to both sides of the one or more plates or discs, a circuit including said magnets, means to control the energy of the same, and a motor connected to one of the said parts to rotate the same. 8th. The combination of a car axle to be driven, an electric motor having its armature mounted loosely upon said car axle and axially concentric with the same, and electric speed reducing mechanism for transmitting motion from the armature to the car axle, consisting of one or more magnets in circuit with a source of electricity, and a conductor in proximity to said magnets. 9th. The combination, with an electric motor and a car axle or wheel to be driven, of a speed reducing mechanism directly connected to the armature or the rotating part of the motor and to the said car axle or wheel to be driven, and consisting of two electric conductors in inductional relation to each other, and a source of electricity connected to one of the electric conductors. 10th. The combination, with an electric motor and a car axle or wheel to be driven, of an electric speed reducing mechanism for transmitting motion from the motor to the car axle or wheel, consisting essentially of two parts one or more magnets, and a conductor arranged to move in proximity to the poles of said magnet or magnets, one part being connected to the motor, and the other connected to the car axle or wheel.

No. 42,101. Method of Electric Soldering and Cementing Cans. (*Méthode de soudre et cimenter par l'électricité les boîtes en ferblanc.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The herein described improvement in soldering or cementing operations in which heat is employed to heat the soldering or cementing material, consisting in heating the soldering tool by passing a heating electric current through a conductor in close proximity or contiguous to the tool while it is remote from the work and then moving the tool from said conductor and bringing the tool in contact with the work or the junction of pieces supplied with solder. 2nd. The herein described improvement in soldering or cementing operations in which heat is employed to heat the soldering or cementing material, consisting in heating the soldering tool by passing a heating electric current through a conductor in contact with or in close proximity to the tool while it is remote from the work, then moving the tool from said conductor, bringing the tool in contact with the work or the junction of pieces supplied with solder, and moving said tool along the junction. 3rd. The herein described improvement in soldering or cementing operations in which heat is employed to heat the soldering or cementing material, consisting in heating the soldering tool by passing a heating electric current through a conductor in contact with or in close proximity to the tool while it is remote from the work, then moving the tool from said conductor, bringing the tool in contact with the work or the junction of the pieces supplied with solder, moving said tool along the junction, removing the tool from the junction, and maintaining pressure upon the parts while they are cooling. 4th. The herein described improvement in soldering or cementing operations in which heat is employed to soften the soldering or cementing material, consisting in suitably electrically heating a rotatable or revolving soldering tool while it is remote from the work, then bringing the tool and work in contact with each other, and then separating the tool and work from each other and permitting the latter to cool. 5th. The herein described improvement in soldering or cementing operations in which heat is employed to soften the soldering or cementing material, consisting in suitably electrically heating a rotatable or revolving soldering tool while it is remote from the work, applying pressure to the work to press the parts towards each other, then bringing the tool and work in contact with each other, and then separating the tool and work from each other and permitting the latter to cool under pressure. 6th. The herein described improvement in soldering or cementing operations in which heat is employed to soften the soldering or cementing material, consisting in electrically heating a rotatable or revolving soldering tool while it is remote from the work by passing an electric current through a heating conductor, then bringing the tool and work in contact with each other, and then separating the tool and work from each other and permitting the latter to cool.

No. 42,102. Apparatus for Soldering and Cementing Cans by Electricity. (*Appareil pour soudre et cimenter par électricité les boîtes en fer-blanc.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A., 24th February, 1893; 6 years.

Claim.—1st. In an electric soldering or cementing apparatus for cans, a movable or rotatable soldering tool and an electric heating conductor in close proximity or contiguous to the tool. 2nd. In an electric soldering or cementing apparatus for cans, a series of separate or independent movable or rotatable soldering tools and one or more electric heating conductors in close proximity or contiguous to the tools. 3rd. In an electric soldering or cementing apparatus for cans, a movable or rotatable soldering tool, an electric heating conductor in close proximity or contiguous to the tool, and an independent press iron, as and for the purpose described. 4th. In an electric soldering or cementing apparatus for cans, a movable or rotatable vertically reciprocating soldering tool, an electric heating conductor in close proximity or contiguous to the tool, and an independent pressure iron, as and for the purpose described. 5th. In an electric soldering or cementing apparatus for cans, a series of separate or independent rotatable vertically reciprocating soldering tools, one or more electric heating conductors in close proximity or contiguous to the tools, and a series of independent presser irons, as and for the purpose described.

No. 42,103. Electric Heating Apparatus. (*Appareil de chauffage électrique.*)

Mark Wesley Dewey, Syracuse, New York, U. S. A., 24th February, 1893; 6 years.

Claim.—1st. In an electric heating apparatus, a suitable metallic case, one or more resistances or heat developing electric conductors within said case and formed in layers, metallic plates between the layers, a fibrous refractory material in contact with and enveloping or covering the conductor or conductors, and means to maintain said material in close and constant contact with the said conductor or conductors. 2nd. In an electric heating apparatus, a corrugated or ribbed metallic case, one or more resistances or heat developing electric conductors supported in said case, and a fibrous refractory material enveloping or covering the conductors and in continuous contact with the same.

No. 42,104. Electric Heating Apparatus.

(*Appareil de chauffage électrique.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. The combination of an exposed electric heater and a ventilating fan mounted upon the same support or frame. 2nd. The combination of a ventilating fan and an electric heater mounted upon and carried by said fan. 3rd. The combination of an electric heater and a motor connected therewith to move the same. 4th. The combination of an electrically heated conductor and a blade of a ventilating fan to carry said conductor. 5th. The combination, with a ventilating fan and a motor to operate the same, of an electrically heated conductor mounted upon the blades of said fan. 6th. The combination, with a rotary ventilating fan and a motor to operate the same, of an electrically heated conductor mounted upon said fan. 7th. In an electric heating apparatus, one or more exposed heat developing electric conductors suitably supported to be moved and a motor connected to said conductors to move the same. 8th. In an electric heating apparatus, one or more heat developing electric conductors suitably supported to be rotated and connected in circuit with a source of electricity and a motor connected to and arranged to rotate said conductors, for the purpose described. 9th. The combination, of a perforated or open work fan blade, a heating conductor, and an electric conductor connected with the same. 10th. The combination of a fan blade constructed of perforated or open work electric conducting material, and electric conductors connecting said blade with a suitable source of electricity. 11th. The combination, with a ventilating fan, a motor to operate the same, and an electric heater mounted thereon, of an inductional transformer, a secondary circuit of said transformer connected with the heater, a pulsator in the primary circuit, operated by the motor operating the fan, and a source of direct current for the primay circuit. 12th. The combination, with a ventilating fan, a motor to operate the same, and an electric heater mounted thereon, of an inductional transformer, a secondary circuit of said transformer connected with the heater, and a source of electricity for the primary circuit. 13th. In an electric heating apparatus, one or more heat developing electric conductors and a movable means to displace or remove the heated air from said conductor or conductors. 14th. In an electric heating apparatus, one or more exposed heat developing electric conductors, means to displace or remove the heated air from said conductor or conductors, and means for controlling the current passing through said conductor or conductors and the removal of air therefrom independently of each other. 15th. The combination of an electric heater, an electric motor supplied with means for removing the heat from said heater, and electric conductors connected to both the heater and motor to supply electricity thereto.

No. 42,105. Electric Water Heater.

(*Calorifère électrique à eau.*)

Mark Wesley, Dewey Syracuse, New York, U.S.A., 24th February, 1893; 6 years..

Claim.—1st. The method of supplying hot water for consumption or heating purposes, consisting in subjecting water contained in a pipe to a heating effect produced by an electric current in a portion of an electric circuit composed of said pipe, and circulating the water in the pipe leading to and through one or more localities, whereat the water may be released from the pipe or utilzed for heating purposes. 2nd. The method of supplying hot water for consumption purposes, consisting in subjecting water contained in a pipe and under pressure to a heating effect produced by an electric current in a portion of an electric circuit composed of said pipe, circulating the water in the pipe leading to and through one or more localities, whereat the water may be released from the pipe, and supplying the pipe with water at a certain point while it is released at said locality or localities. 3rd. The method of supplying hot water for consumption or heating purposes, consisting in subjecting water contained in a pipe to a heating effect produced by an electric current in a portion of an electric circuit composed of said pipe, and circulating the water in the pipe leading to and through one or more localities, whereat the water may be released from the pipe or utilized for heating purposes, and controlling the electric current flowing in the pipe by the variation in pressure of the heated water to maintain the water at a constant temperature. 4th. The herein described method of electrically heating water for consumption purposes, which consists in circulating water through a distributing pipe and passing an electric heating current through said, or a portion thereof, to maintain the pipe in a heated condition. 5th. The method of supplying hot water for consumption or heating purposes, consisting in subjecting water contained in a pipe to a heating effect produced by an electric current in a portion of an electric circuit composed of said pipe, and circulating the water in the pipe leading to and through one or more localities, whereat the water may be released from the pipe or utilized for heating purposes, and interrupting the electric current when the pressure of the water becomes higher than desired, and passing the current when the pressure of the water is lower than desired. 6th. In a system for supplying hot water for consumption or heating purposes, a suitable source of electricity, a distributing pipe containing water and leading to one or more localities, where it may be released from the pipe, and electric conductors connecting a portion of the pipe in circuit with the source. 7th. In a system for supplying hot water for consumption or heating pur-

poses, a suitable source of electricity, a distributing pipe containing water and leading to one or more localities, a supply pipe, and electric conductors connecting a portion of the distributing pipe in circuit with the source, for the purpose described. 8th. In a system for supplying hot water for consumption or heating purposes, a suitable source of electricity, a distributing pipe containing water and leading to one or more localities, a supply pipe, and electric conductors connecting a portion of the distributing pipe in circuit with the source, and an automatic electric current controller in circuit with the source of electricity, and operated by the expansion and contraction due to the heating and cooling of the water, for the purpose described. 9th. In a system for supplying hot water for consumption or heating purposes, a suitable source of electricity, a distributing pipe containing water and leading to one or more localities, a supply pipe, and electric conductors, connecting a portion of the distributing pipe in circuit with the source, and means for releasing the water from the distributing pipe at said localities when desired. 10th. In a system for supplying hot water for consumption or heating purposes, a suitable source of electricity, a distributing pipe containing water and leading to one or more localities, a supply pipe, and electric conductors connecting a portion of the distributing pipe in circuit with the source, and an automatic electric current controller in circuit to interrupt the current when the pressure of the water is too high and to pass the current when the pressure is too low.

No. 42,106. Car Coupler. (*Attelage de chars.*)

John E. Mullaney and Louis R. Thean, both of Minneapolis, Minnesota, U.S.A., 24th February, 1893; 6 years.

Claim.—1st. A movable chain draw bar and safety chain coupler, for railway cars, comprising a chain having hooks at its extremities, and a link at its centre similar in shape and size to an ordinary coupling link, whereby the said chain may be used as a substitute for the ordinary draw bar and coupling link, or as a safety device to reinforce the ordinary couplings, substantially as described. 2nd. The chain having end hooks, a central link capable of use as an ordinary coupling link, and a pair of hooks for taking up slack, located one on each of the end portions of the chain, whereby the said chain may be used, either as a substitute for the ordinary draw bar and link or to reinforce the ordinary couplings, and effect a taut connection between the cars, substantially as described.

No. 42,107. Device for Preventing the Swarming of Bees. (*Appareil pour empêcher les abeilles d'essaimer.*)

Herbert Page Langdon, East Constable, New York, U.S.A., 28th February, 1893; 6 years.

Claim.—1st. In a device for the purpose set forth, the combination of the hives, each having an entrance, the trap establishing communication between the entrance of said hives, and means for successively opening and closing the entrances of said hives in alternate order. 2nd. In combination with the hives, the device or trap, whereby the combined working forces of said hives are caused to alternately work in each hive in reciprocal succession. 3rd. In combination with the hives, the trap having entrances communicating with said hives, and provided with a gallery connecting said entrances, and means for closing the hive entrances of the trap, whereby the field forces of one hive may be turned into another. 4th. A bee-hive provided with an entrance, a slide to control said entrance, and a conical screen exit to permit the escape of the flying bees when the hive is closed. 5th. In combination with the hive, the trap provided with an entrance and escape aperture, each having independent communication with the hive, said escape aperture having a conical screen covering with an opening at its apex, the slide for closing the hive entrance of the trap, substantially as set forth. 6th. In combination with the hives, the trap having inner and outer entrances that communicate with the hives, and having a gallery or passage way running longitudinally thereof connecting said entrances, said trap being also provided with escape apertures that communicates with the respective hives independently of the entrance openings, said escape apertures being covered with a conical screen having an opening at its apex.

No. 42,108. Signal for Railway Crossings.

(*Signal pour passages de chemin de fer.*)

George Samuel Boyler, Havelock, Ontario, Canada, 28th February, 1893; 6 years.

Claim.—1st. In a railway crossing signal, the combination, with mechanism adapted to be operated by the wheels of passing trains of the wire W, connected and operated by said mechanism, the bell B, on the support A, the vertical shaft C, journaled in brackets c,c, the lever G, having flange *g*, the spring operated arm D, and the arm D, carrying the hammer *d*, substantially as set forth. 2nd. In a railway crossing signal, the combination, with a gong or bell having suitable striking mechanism, placed at the crossing of the rocking shaft H, journalled in suitable bearings, the lever I, spring *i*, the depression lever J, hinged at *j*, spring K, the said lever being bevelled at *k*, substantially as set forth.

No. 42,109. Machine for Confectioners' Use.

(*Machine à l'usage des confiseurs.*)

Alfred W. Paris, Minneapolis, Minnesota, and Neil A. Clacker, Chicago, Illinois, all in the U.S.A., 28th February, 1893; 6 years.

Claim.—1st. A mechanical device or devices arranged to empty moulding trays of their contents. 2nd. A mechanical devive or devices arranged to charge moulding trays with moulding material. 3rd. An organization of mechanical devices arranged to empty moulding trays of their contents, separate the confections from the moulding material, and recharge the trays with the separated moulding material. 4th. The combination, with a charging receptacle, having an outlet to permit the flow of moulding material therefrom, of a feeding device for conducting empty trays thereto, to receive their charge of moulding material. 5th. The combination, with a charging receptacle, having an outflow opening, of a feed device adapted to direct the empty trays under said outflow to receive their charge, and a striker for levelling the charge in the trays. 6th. The combination, with a charging receptacle, having an outflow opening of a tray feeding device adapted to direct the empty trays to the charging position under said outflow, and an elevating conveyor for catching the waste from the outflow, and restoring the same to the top of the receptacle. 7th. In an apparatus for use in the manufacture of confectionery, the combination, with a receiver for receiving the contents of moulding trays, of a tray emptying device for emptying the trays into the said receiver. 8th. The combination, with a receiver of a tray feeding device adapted to deliver the trays above the receiver, and a reversely arranged inclined guide under the feed device, adapted to catch the trays and cause them to turn bottom side up over the receiver. 9th. In an apparatus of the class described, reversely arranged inclined guides for the trays, whereby the same are made to first dump their contents and then right themselves by gravity. 10th. The combination, with the inclined guide tray reversing device, of a buffer spring for cushioning the fall of the trays, substantially as described. 11th. The combination, with a receiver of devices for directing moulding trays thereto and emptying the same of their contents, and a separator for dividing the confections from the moulding material. 12th. An apparatus for use in manufacturing confectionery, comprising a receptacle provided with a separator and having an outflow for the separated moulding material, an infeed device for conducting the trays to their emptying position over said receptacle, an outfeed device for conducting the empty trays to their charging position under said outflow, a reversing device between the two feed devices for dumping the trays and righting them again, a striker for levelling the charge in the trays, and an elevating conveyor for catching the waste from said outflow, and redelivering the same to the top of the receptacle, substantially as described.

No. 42,110. Apparatus for Lowering Coffins into Graves. (*Appareil pour descendre les cercueils dans les fosses.*)

Charles W. Young and John M. Stevens, assignees of Charles E. Gilmore, all of St. Stephen, New Brunswick, Canada, 28th February, 1893; 6 years.

Claim.—1st. In a burial apparatus, side bars, braces to keep them separated for the proper distance when in use, and sheaves located on said bars near their ends, combined with flexible lowering devices extended across the space between said bars and from sheave to sheave, substantially as described. 2nd. In a burial apparatus, side bars, sheaves located near the ends of said bars, a cross bar, and guide rolls supported thereby combined with lowering devices, such as ropes extended around opposite sheaves, to first support and then let down a coffin or casket between the side bars, substantially as described. 3rd. In a burial apparatus comprising side bars, sheave carriers adjustable longitudinally thereon, connections between the ends of said bars, and fixed sheaves at one end of the side bars, combined with flexible lowering rope extended around opposite adjustable sheaves to form extensible rests for the coffin or casket between the side bar, the free ends of said cords or ropes being extended around said fixed sheaves, and a windlass to release the cords equally at each side, substantially as described. 4th. A burial apparatus comprising side bars, braces between the ends of and to keep the said bars apart, sheaves longitudinally adjustable on each side bar and fixed sheaves at one end thereof, combined with a windlass guide rolls therefor, locking and brake mechanism, and lowering cords or ropes extended between the side bar from the adjustable sheaves to form supports for the coffin, the ends of said cords or ropes passing around said fixed sheaves, and guide rolls to the windlass, substantially as described.

No. 42,111. Railway Car. (*Char de chemin de fer.*)

Samuel J. Rosenfeld and Joseph L. Levy, both of New York, State of New York, U.S.A., 28th February, 1893; 6 years.

Claim.—1st. A car having an interior free floor space, and racks for exhibiting articles arranged within said space, substantially as described. 2nd. A car having an interior free floor space, and a series of adjustable racks for exhibiting articles arranged within the said space, substantially as described. 3rd. A car having an interior free floor space and a series of racks adjustable up and down arranged within the said space, substantially as described. 4th. A

car having an interior free floor space, and a series of racks 7, secured to upright stanchions 4, and arranged within the said space, substantially as described. 5th. A car having an interior free floor space, and a series of racks 7, adjustably secured to upright stanchions 4, the said racks being arranged to leave side aisles 8, and a centre aisle 9, between the ends of the racks 7, substantially as described. 6th. A car having a free floor space, a series of racks for exhibiting articles arranged within said free space, and a compartment C, having a berth D, basin E, and disk F, on the outside of the compartment, substantially as described. 7th. A car having an interior free floor space and racks for exhibiting articles arranged within the said space, said windows K, transparent openings N in the roof M, like openings in the deck plates O, and like openings in the upper deck Q, substantially as described. 8th. A car having an interior free space, and the racks 7 extending in an unbroken line substantially the entire length of the car and located close to the side thereof, and arranged to leave the central aisle 10 between them, substantially as described. 9th. A car having an interior free floor space, side windows K and racks 7 arranged between any two of the windows, substantially as described. 10th. A car having an interior free floor space, side windows K, upright stanchions 4, with adjustably secured racks 7, located between any two of the windows, substantially as described. 11th. A car having an interior free floor space, side windows K, racks 7 adjustably secured to upright stanchions at the centre of said racks, both the racks and stanchions being located between any two of the windows, substantially as described. 12th. A car having an interior free floor space and a series of racks 7, arranged transversely of the car in such a way as to leave the longitudinal aisles 11 and 12 between the ends of the racks and side of the car, and a transverse aisle 13, between any two of the racks, substantially as described. 13th. A car having an interior free floor space and a rack transversely disposed within the car, one end of the rack being placed against the side of the car, a window opposite the other end of the rack, and an aisle between one end of the rack and the windows, substantially as described. 14th. A car having an interior free floor space and a series of racks 7, arranged so as to have windows K opposite one end thereof, and a sinuous aisle about all of them, substantially as described. 15th. A car having free floor space and a series of racks abutting against the sides thereof, windows K, between the racks on each side, a free space between one end of a rack and a window, said free space and window alternating in the location on each side of the car, substantially as described.

No. 42,112. Improvements in Method of Regulating Electrically Driven Mechanism. (*Méthode de régler par l'électricité les mécanismes conducteurs.*)

Walter H. Knight, of Newton, Massachusetts, and William B. Potter, of Lynn, Massachusetts, U.S.A., 28th February, 1893; 6 years.

Claim.—1st. The method of regulating the power and speed of mechanism driven by two electric motors, which consists in placing the two motors in series for slow speeds and changing them to multiple connection for higher speeds by the methods described, by first completing a circuit around one motor while its field magnet is still energized, and then shifting the connection as set forth. 2nd. The method of regulating the power and speed of mechanism driven by two electric motors, which consists in placing the two motors in series for slow speed and changing them to multiple connection for higher speed, and securing additional rates of speed by modifying the action of the motors both before and after the changes in connection, substantially as described. 3rd. The apparatus for regulating the power and speed of mechanism driven by two electric motors, consisting of a series of contact plates and connections therefrom to the motors, with means, as connections and switch device, for establishing and interrupting the electrical connection therewith, so as to change the motors from series to multiple arc, and means in magnet form for establishing a magnetic field adjacent to the contact plates, so as to interrupt any arc that may be formed on the rupture of the circuit. 4th. The apparatus substantially as herein described, consisting of a series of switch levers and a cylinder having a series of cams arranged to operate the switching levers in a predetermined order, the said apparatus being so connected by wiring and said switch levers and cam cylinder in the circuit of two electric motors as to successively change them from series to multiple arc connection.

No. 42,113. Hot Water Heating Apparatus for Cooking Ranges. (*Calorifère à eau pour poêles de cuisine.*)

Gilbert T. Brewer, Hoboken, New Jersey, U.S.A., 28th February, 1893; 6 years.

Claim.—1st. In a hot water cooking apparatus for stoves, the combination with the stove having the usual cooking top, of the water back, the elevated hot closet above an open space between it and said cooking top, the boiler enclosed in the hot closet subject to the heat of the waste products from the fire, and two circulating pipes connecting the water back and boiler. 2nd. In a hot water apparatus for cooking stoves, the combination with the stove having the usual cooking top, of the water back, the elevated hot closet above an open space between it and said cooking top, the boiler enclosed in the hot closet subject to the heat of the waste products from the fire, two circulating pipes connecting the water back and the boiler and the feed pipe connected with the water back. 3rd. In a hot water apparatus for cooking stoves, the combination with the stove having the usual cooking top, of the water back the elevated hot closet above an open space between it and said cooking top, the boiler enclosed in the hot closet subject to the waste products from the fire, two circulating pipes connecting the water back and boiler, the outflow pipe connected with the boiler and the return pipe connectedwith the water back substantially as described. 4th. In a hot water apparatus for cooking stoves, the combination of the water heater, the circulating pipes, the elevated tank for the supply of the water to the heater open to the atmosphere and connected with the water circulating system by a supply pipe, the stand pipe of the outflow connected directly with the circulating pipes independently of and below the supply tank, and the vent of the stand pipe opening to the atmosphere above the water in the supply tank substantially as described. 5th. In a hot water apparatus for cooking stoves, the combination with the stove, of the water back, the elevated hot closet located over, and the usual distance of the elevated oven above the stove, the boiler enclosed in the part of said closet over the water back, the vertical circulating pipes connecting the boiler and water back, the supply pipe connected with the water back, the overflow stand pipe connected with the top of the boiler, the circulating pipes connected with the stand pipe above the boiler, the supply tank located above the circulating pipes, and the vent pipe connected to the circulating pipe and discharging above the surface of the water in said tank all substantially as described.

No. 42,114. Car Coupler. (*Attelage de chars.*)

William James Brush and Henry Charles Fayette, both of Oakville, Ontario, Canada, 28th February, 1893; 6 years.

Claim.—1st. A draw head having a hook C, pivoted within it, and provided with a recessed block D, pivoted to the tail E, formed on the end of the hook C, and operated by a pivoted lever F, a spring I, being arranged to hold the parts in the normal position, substantially as and for the purpose specified. 2nd. A draw head having a hook C, pivoted within it, and provided with a recessed block D, pivoted to the tail E, formed on the end of the hook C, and operated by a pivoted lever F, arranged substantially as and for the purpose specified.

No. 42,115. Sliding Partition. (*Cloison à coulisse.*)

James Hayes, Cleveland, Ohio, U.S.A., 28th February, 1893; 6 years.

Claim.—1st. The combination, with a vertically sliding partition having panels, as *a*, a hinged door or doors, as B, a strip C, to which the upper ends of said panels are rigidly secured, and a thin flat strip D, to which the lower ends of said panels are secured, said strips C and D, stiffening the partition, and said strip D, serving also as an unnoticed threshold for the door or doors, of guiding posts receiving the edges of said partitions, pulleys, cords secured at one end to said partition, and counter weights secured to the opposite ends of said cords. 2nd. In a sliding partition, panels, a hinged door between the same, connecting strips at the top and bottom of said partition, vertically grooved posts at either side, and a stiffening beam on the upper end, all substantially as described and for the purposes specified. 3rd. In a sliding partition, panels as *a*, and a hinged door, as B, between the same, in combination with the bearing strips E, and connecting strips C and D, all arranged substantially as described and for the purposes specified. 4th. In a sliding partition, panels, hinged doors between said panels, metallic strips on the upper and lower edges of said partition, vertical bearing strips E, on said panels, vertical guiding grooves on either side of the partition, and an inclosure between divided studding in the wall above the sliding partition, in combination with bearing strips E^{11}, arranged opposite said bearing strips E, all as described and for the purpose specified. 5th. The combination, with a partition and guide posts having vertical grooves receiving the sides of said partition, of vertical bearing strips E, in said partition, additional bearing strips E^{11}, arranged opposite said bearing strips, and cords secured at one end to the top of said partition, pulleys over which said cords pass, and counter weights on the other end of said cord. 6th. In a sliding partition, a lower portion of separate panels rabbited together, an upper integral portion and a metallic bar, as L, received by grooves in the upper edge of the panels, substantially as described. 7th. In a sliding partition, a lower portion of separate panels rabbeted together, a hinged door between the same, an upper integral portion, as A^{11}, a metallic bar, as L, attached to the lower edge of the portion A^{11}, and inserted in grooves in the upper edge of the panels, with strengthening bars at the upper and lower edges of the partition, substantially as described, and strengthening bars at the side connecting the upper portion of the partition and the other doors. 8th. The combination, with a vertically sliding partition, cords attached to its upper ends, pulleys over which said cords pass, and counter weights on the opposite ends of said cords, of a lever pivoted at one side of said partition, and having its outer end formed as a dog, and its inner end connected with one of said cords, and a spring between said partition and the under side of the inner end of said lever, substantially as described, whereby said dog will automatically stop said partition in the event of a breakage of the cords, substantially as described.

CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO THE FOLLOWING PATENTS.

2887. JOHN A. LAWSON, 2nd five years of No. 28,460, from the 3rd day of February, 1893. Improvements in Machines for Road Making, 1st February, 1893.

2888. MAX VAN GULPEN, 2nd and 3rd six years of No. 41,325, from the 19th day of December, 1898. Improvements in the Method of and Apparatus for Making Fillers for Cigars, 3rd February, 1893.

2889. JOHN HENRY RICHARDSON DINSMORE, 2nd five years of No. 28,482, from the 6th day of February, 1893. Improvements in the Manufacture of Illuminating Gas and Apparatus therefor, 4th February, 1893.

2890. B. COLBORNE and R. C. PERCIVAL, 2nd five years of No. 28,593, from the 1st day of March, 1893. Improvement in Plows, 7th February, 1893.

2891. ANDREW T. SHERWOOD, 2nd five years of No. 28,535, from the 18th day of February, 1893. Improvements in Electric Belts and Trusses, 10th February, 1893.

2892. ANDREW EUGLE, 2nd five years of No. 28,524, from the 11th day of February, 1893. Process of Burning Wet and Offensive Substances, 10th February, 1893.

2893. GEORGE CUSHEN and ANDREW MARR LE BARRE, 2nd five years of No. 28,505, from the 10th day of February, 1893. Improvements in Car Couplings, 10th February, 1893.

2894. EDWARD ETHEL GOLD, 3rd five years of No. 16,359, from the 22nd day of February, 1893. Improvements on Steam Heaters, 16th February, 1893.

2895. PETER GENDRON, 3rd five years of No. 16,502, from the 15th day of March 1893. Improvements in Vehicle Wheels, 16th February, 1893.

2896. SAMUEL ORSON SHOREY, 3rd five years of No. 16,547, from the 20th day of March 1893. Improvement in Overcoats, 16th February, 1893.

2897. JOHN WILLIAM HARKOM, 2nd five years of No. 28,589, from the 1st day of March, 1893. Improvements in Railway Signals, 20th February, 1893.

2898. WILLIAM JAMES COULTER, 2nd five years of No. 37,654, from the 21st day of October, 1896. Improvements in Clothes Drying Reels, 20th February, 1893.

2899. FRANCIS GUSTAVUS SUSEMIHL, 2nd five years of No. 28,610, from the 3rd day of March, 1893. Improvements on Freight Car Doors, 20th February, 1893.

2900. JAMES HALE SEWALL, 2nd five years of No. 28,555, from the 24th day of February, 1893. Improvements in Car Heating Apparatus, 21st February, 1893.

2901. GEORGE WASHINGTON JOHNSTON, 3rd five years of No. 16,470, from the 8th day of March, 1893, Improvements on Steam Pumps, 21st February, 1893.

2902. JAMES HENRY RUSSELL, 2nd five years of No. 28,556, from the 24th day of February, 1893. Improvements in Railway Wing Snow Plows, 23rd February, 1893,

2903. PAUL LOUIS TOUSSAINT HEROULT, 2nd five years of No. 29,032, from the 28th day of April, 1893. Improved process of reducing Refractory Oxides and producing Metals or Metallic Alloys or Compounds by Electricity, and apparatus for the purpose, 23rd February, 1893.

2904. WILLIAM H. HEESON, 4th five years of No. 41,886, being a re-issue for a term of five years of Patent No. 28,579, from the 1st day of March, 1893. Improvements on Furnace Grates, 23rd February, 1893.

2905. CHARLES CLARENCE LONGARD, 2nd five years of No. 28,640, from the 6th day of March, 1893. Improvements in Ventilators in connection with Hot Water Heating Apparatus, 27th February, 1893.

2906. THE BURTON ELECTRIC COMPANY (assignee), 2nd and 3rd, five years of No. 28,737, from the 21st day of March, 1893. Improvements in Electric Heaters, 28th February, 1893.

2907. MARTHA E. LUNN, 2nd five years of No. 28,628, from the 5th day of March, 1893. Improvements on Corsets, 28th February, 1893.

2908. LAUREN M. FITCH and MOSES M. DAVIS, 2nd five years of No. 28,571, from the 1st day of March, 1893. Improvements in Spring Vehicles, 28th February, 1893.

2909. THE FLOETER FANNING MILL COMPANY (assignee) 2nd five years of No. 28,586, from the 1st day of March, 1893. Improvements on Fanning Mills, 28th February, 1893.

2910. THE WRITING TELEGRAPH COMPANY (assignee), 2nd five years of No. 28,596, from the 1st day of March, 1893. Improvements in Autographic Telegraphs, 28th February, 1893.

TRADE MARKS

Registered during the month of February, 1893, at the Department of Agriculture—Copyright and Trade Mark Branch.

4535. ALFRED WELLS CASE, of Highland Park, County of Hartford, Connecticut, U.S.A. Packing for joints in pipes or articles exposed to the action of heat and of fluids, and particularly Flange Packing for Valves and other Articles, 4th February, 1893.

4536. JOHN LIPSCOMB GROSSMITH, of 50 Newgate Street, London, England, trading as J. GROSSMITH, SON & CO., also as J. GROSSMITH & SON. Toilet Articles and Preparations and Perfumed Soap, 6th February, 1893.

4537.

4538. THE CANADIAN OILED CLOTHING COMPANY, Ld., of Port Hope, Ont. Oiled Clothing, 10th February, 1893.

4539. LOUIS S. LEVEE and JOHN JOSEPH NELSON, of Toronto, Ont. Cosmetics, 14th February, 1893.

4540. JAMES GILMOUR TEMPLETON, of Calgary, N.W.T. Medicine, 14th February, 1893.

4541. C. ALFRED CHOUILLOU, of Montreal, Que., acting for account and as representative of MR. MENIER, of Paris, France. Chocolate, 14th February, 1893.

4542. D. RITCHIE & CO., of Montreal, Que. Tobacco, Cigarettes and Cigars, 16th February, 1893.

4543. DAVID A. BOWKER, of Cowansville, District of Bedford, Que. Liniment, 16th February, 1893.

4544. THE CLINTON PHARMACEUTICAL COMPANY, of Syracuse, New York, U.S.A. Medical Preparations and particularly Antiseptics, 18th February, 1893.

4545. SAMSON, KENNEDY & COMPANY, of Toronto, Ont. General Trade Mark, 20th February, 1893.

4546. THE AMES & FROST COMPANY, of Chicago, Illinois, U. S. A. Velocipedes and parts thereof, and wheels suitable for use for Velocipedes and other light Vehicles, 22nd February, 1893.

4547. J. BTE. BEAULIEU, de Levis, Qué. Cigares, 22 février 1893.

4548. WILLIAM SNIDER and AARON KRAFT, of Waterloo, Ont. Trading as WM. SNIDER & CO. Flour, 23rd February, 1893.

4549. THE GEO. E. TUCKETT & SON COMPANY, Ld., of Hamilton, Ont. Cigars, 25th February, 1893.

4550.

4551. THE DISTILLERS COMPANY, Ld., of 12 Torphichen Street, Edinburgh, Scotland. Whiskey, 27th February, 1893.

4552. H. J. ROWNTREE & COMPANY, of the Cocoa Works, York England, trading also as ROWNTREE & Co. Cocoa, 27th February, 1893.

4553. ROBERT INGHAM CLARK, of West Ham Abbey, Essex, and 18 St. Helen's Place, London, England, trading as ROBERT INGHAM CLARK & CO. Varnishes, 28th February, 1893.

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6787. SEMI-CENTENNIAL REPORT OF THE MONTREAL BOARD OF TRADE. Sketches of the Growth of the City of Montreal from its Foundation. Statistics of Progress and Report of the Council for the year ending 31st December, 1892. The Montreal Board of Trade, Montreal, Que., 1st February, 1893.

6788. OUR HOME. Vol. I., No. 1., February, 1893, (periodical). The Wells and Richardson Co., Montreal, Que., 2nd February, 1893.

6789. THE HOUSEKEEPER'S NOTE BOOK AND DISCOUNT VOUCHER. Frank W. H. Pointer, Toronto, Ont., 2nd February, 1893.

6790. FAIREST OF ALL. Waltz by F. Boscovitz. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 4th February, 1893.

6791. RUDIMENTS OF MUSIC. By Peter Shupe. Wm. Briggs (Book-Steward of the Methodist Book and Publishing House), Toronto, Ont., 4th February, 1893.

6792. FOUR HUNDRED AND THIRTEEN QUESTIONS IN HISTORY AND GEOGRAPHY. Arranged Chronologically. Collected and Arranged by Peter McEachern, B.A. The Copp, Clark Co., Ld., Toronto, Ont., 6th February, 1893.

6793. VIRGIL'S AENEID. Book 2 With Notes and Vocabulary. By John Henderson, M. A. and E. W. Hagarty, B. A. The Copp, Clark Co., Ld., Toronto, Ont., 6th February, 1893.

6794. THE CANADIAN ENGINEERING NEWS. No. 1., Vol. I., January, 31st 1893. William Edward Gower, Montreal, Que., 6th February, 1893.

6795. BOOK OF AGREEMENTS AND GUARANTEES. Milton P. Lent and Williston F. W. Lent, Toronto, Ont., 8th February, 1893.

6796. SOME NEW NOTES ON MACBETH. In Vindication of the Reading of the Folio of 1623. By M. F. Libby, B. A., Toronto, Ont., 9th February, 1893.

6797. TATTERSALL'S MEDICAL AND SURGICAL TREATMENT OF DISEASED HORSES. By Stanley George Tattersall, of Nairn, Ont., 9th February, 1893.

6798. THE HYGIENIC MIRACLE OR HOW TO CURE DISEASE. How to fortify the System against diseases without drugs or medecine. By Rev. Wm. Simmons. W. B. J. Williams, Sarnia, Ont., 10th February, 1893.

6799. SIR JOHN THOMPSON GRAND MARCH. For Piano. By W. D. Shanks. The Anglo-Canadian Music Publishers' Association, Ld., London, England, 11th February, 1893.

6800. A QUARTETTE OF LOVERS. By John Allister Currie. The Williamson Book Co., Ld., Toronto, Ont., 13th February, 1893.

6801. TWO KNAPSACKS. A novel of Canadian Summer Life. By J. Cawdor Bell. The Williamson Book Co., Ld., Toronto, Ont., 13th February, 1893.

6802. MEMOIRS OF A REFORMER (1832-1892). By Alexander Milton Ross, M. D., Toronto, Ont., 14th February, 1893.

6803. THE PUBLIC SCHOOL DRAWING MANUAL FOR TEACHERS AND STUDENTS. By J. H. McFaul, M.D. The Canada Publishing Co., Ld., Toronto, Ont., 14th February, 1893.

6804. AVE. An Ode for the Centenary of the Birth of Percy Bysshe Shelley, August, 4th 1792. By Charles G. D. Roberts, Windsor, N.S., 16th February, 1893.

6805. BANKS AND BANKERS IN CANADA, FEBRUARY, 1893. Edited by J. S. Cook, Toronto, Ont., 16th February, 1893.

6806. SKETCHES. (Book). Frederick Roche Alley, Montreal, Que., 18th February, 1893.

6807. AT TWILIGHT. Words and Music by Henry B. Sully. A. & S. Nordheimer, Toronto, Ont., 18th February, 1893.

6808. GEMS FROM THE LIFE OF CATHERINE BOOTH. Herbert Henry Booth, Toronto, Ont., 20th February, 1893.

6809. SOLDIERS CHORUS. (Glory and Love to the Men of Old). From the Opera "Faust" by C. Gounod. Chappell & Co., London, England, 21st February, 1893.

6810. DODELINETTE. (Lullaby). Composé pour le piano par Ch. Gounod. Weekes & Co., London, England, 24th February, 1893.

6811. THE VILLAGE BLACKSMITH. Song. Words by Longfellow. Music by W. H. Weiss. Weekes & Co., London, England, 24th February, 1893.

6812. FUNERAL MARCH OF A MARIONETTE. By Ch. Gounod. Weekes & Co., London, England, 25th February, 1893.

6813. TABLES FOR ASCERTAINING EQUIVALENT VALUES OF SEED, containing 48, 56 or 60 pounds, PER BUSHEL, AT A RATE PER HUNDRED POUNDS. The Steele, Briggs, Marcon Seed Co., Ld., Toronto, Ont., 28th February, 1893.

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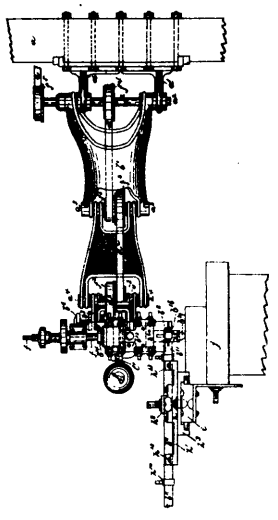

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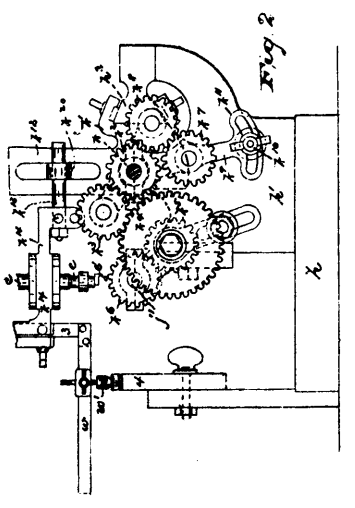

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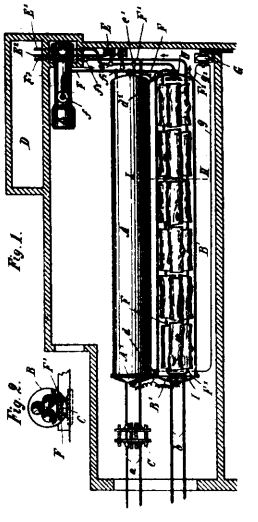

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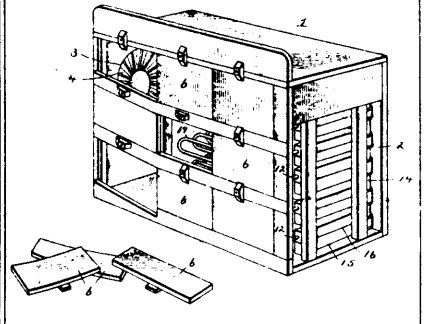

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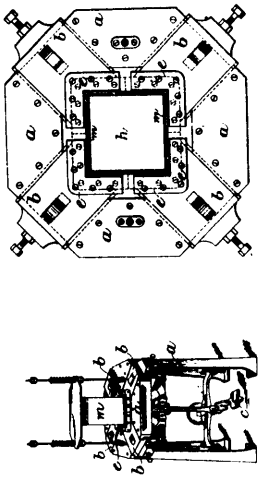

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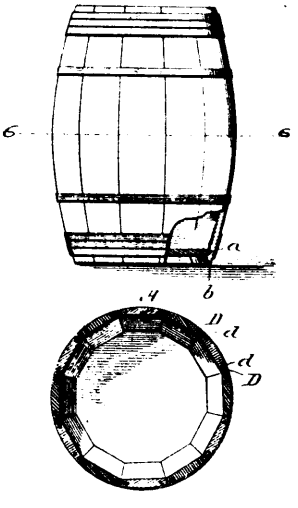

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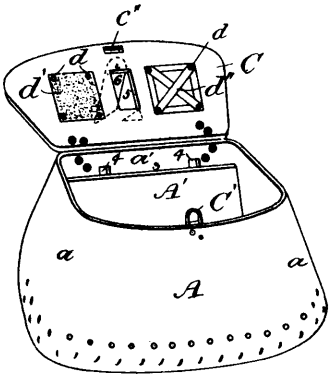

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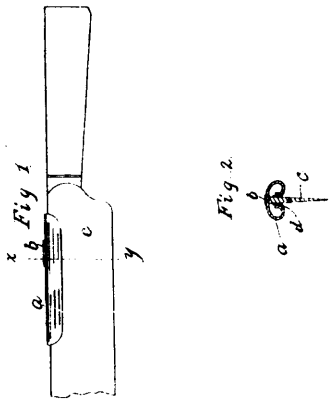

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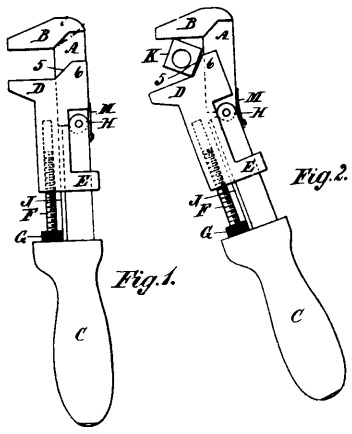

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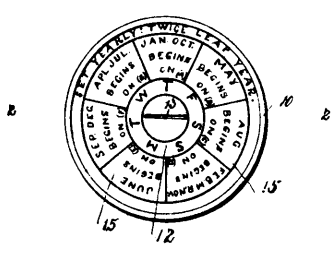

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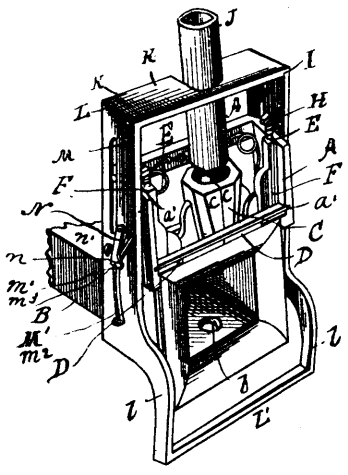

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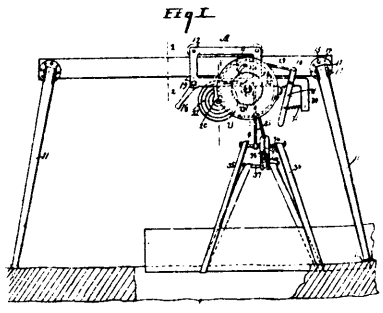

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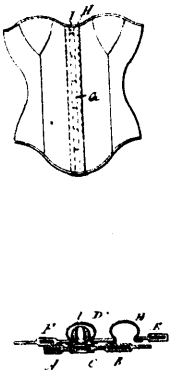

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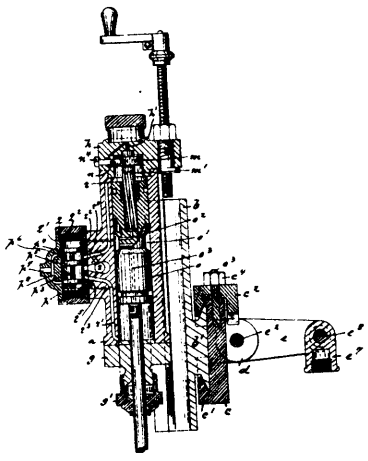

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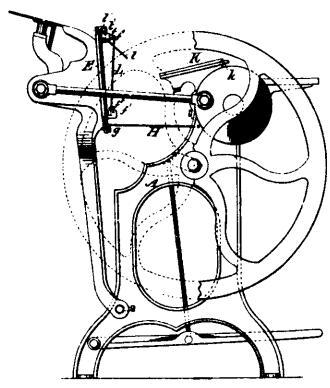

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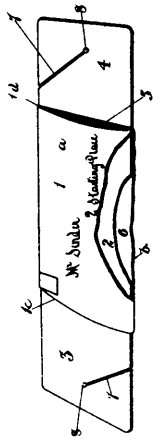

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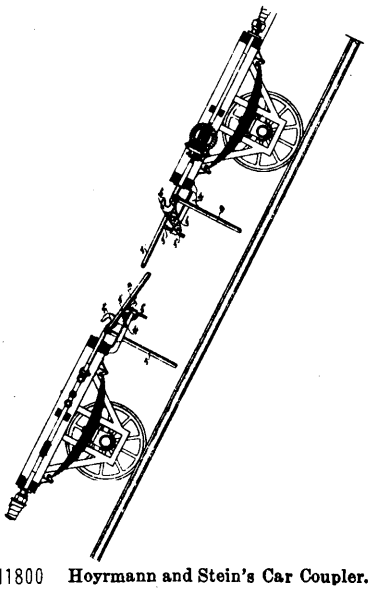

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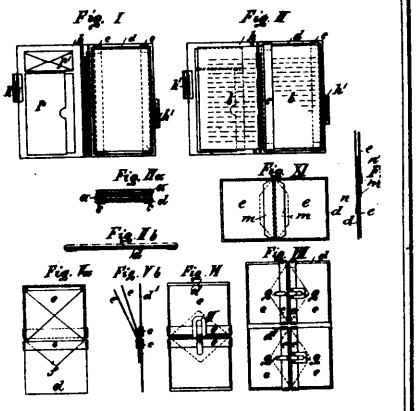

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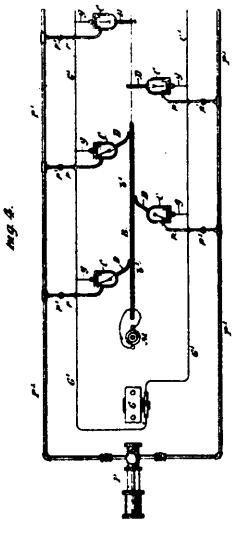

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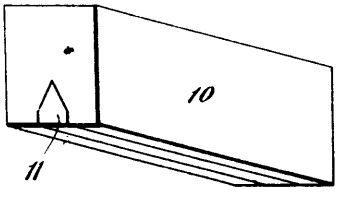

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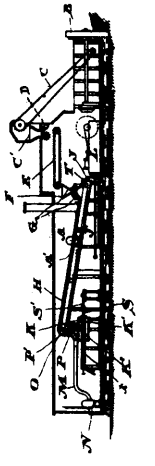

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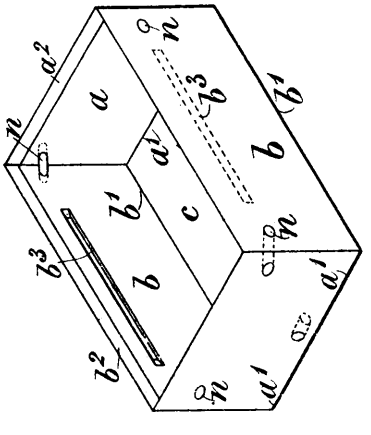

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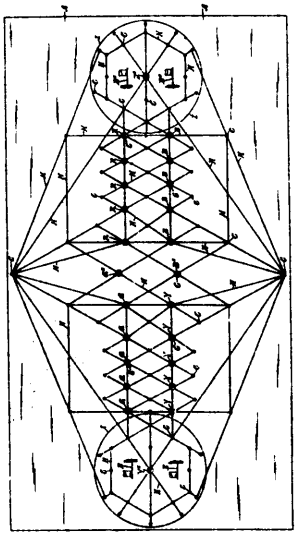

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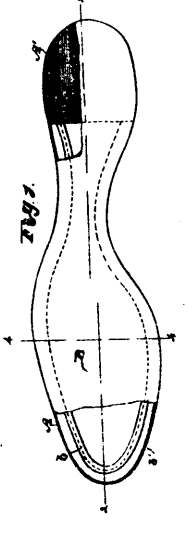

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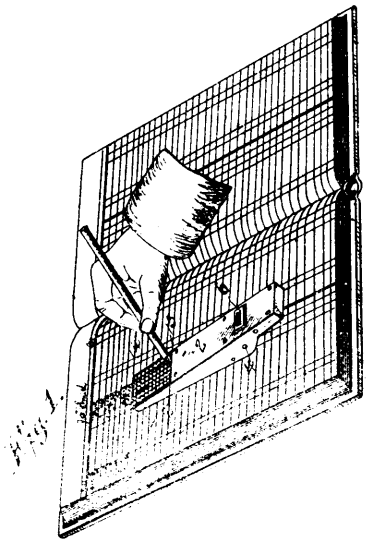

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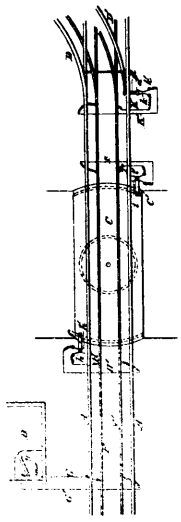

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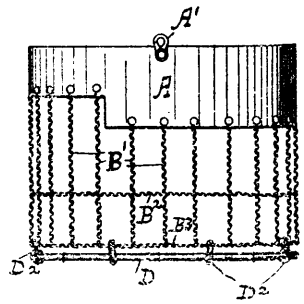

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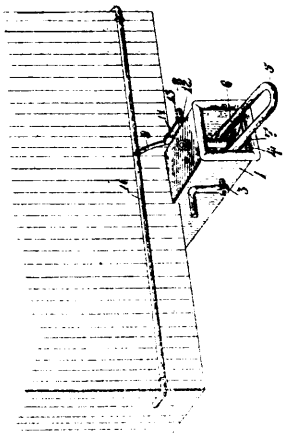

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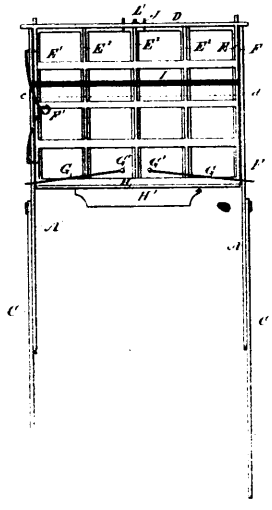

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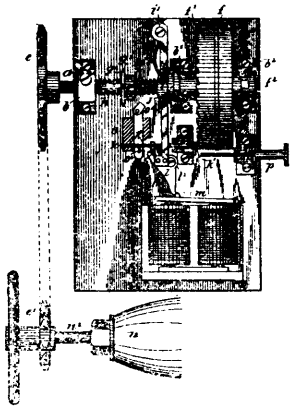

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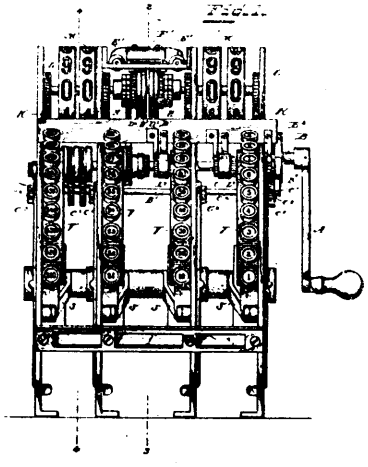

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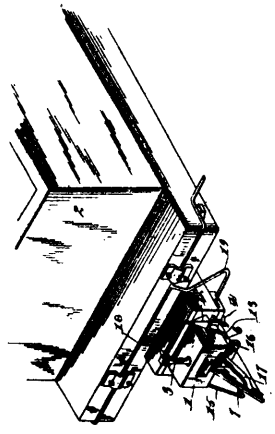

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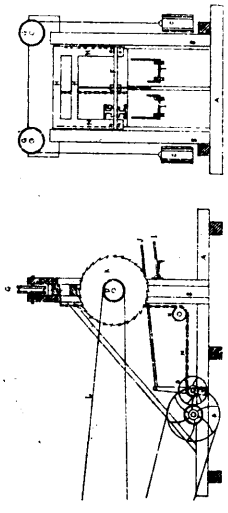

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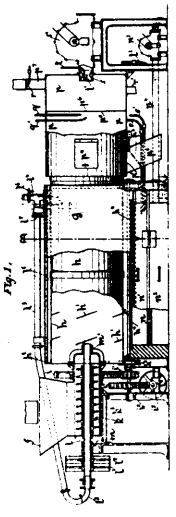

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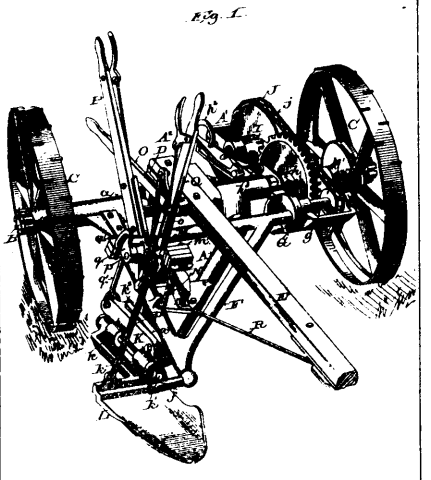
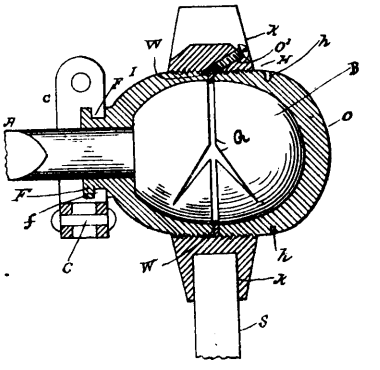
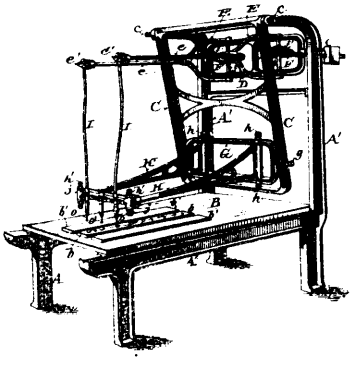


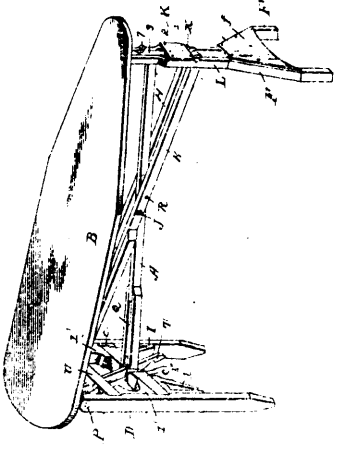
41819 Vilolet and Shaw's Mower.



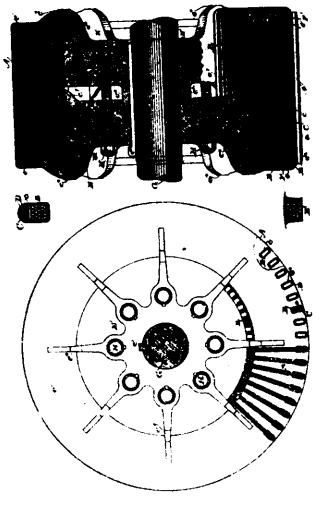
41820 Morden's Axle Box.



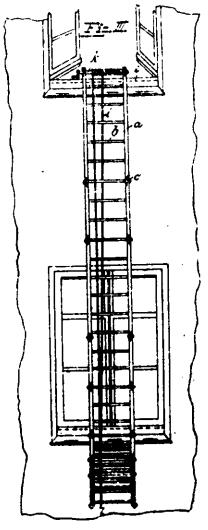
41821 Smith and Post's Carving Machine.



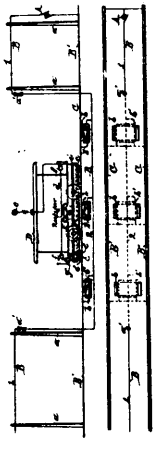
41822 Simmons' Ironing Board.



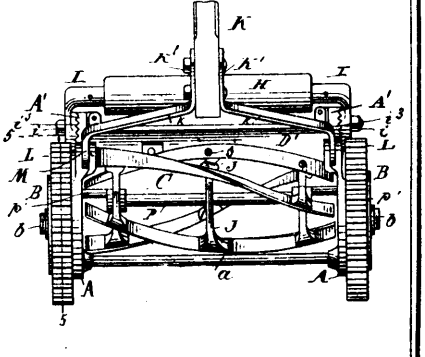
41823 Bassett's Armature for Motors and Generators.



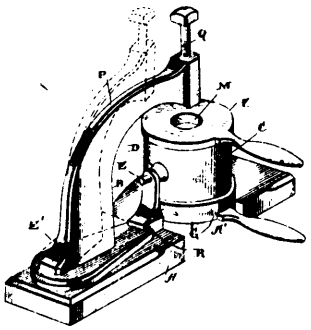
41824 Necker's Ladder.



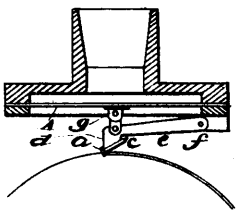
41826 Dewey's Electric Railway.



41827 Stearns, Craig and Seeley's Lawn Mower.

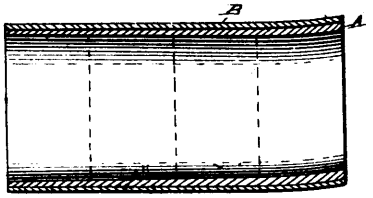


41829 Gearhart's Mold for Casting Knitting Machine Cylinders.

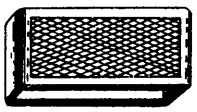


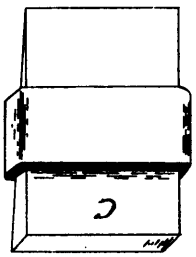
41831 Edison's Phonograph.

Fig. 2.



41832 Edison's Phonogram Blank.





41833 Bringham's Leather Loop for Harness.

Fig. 1. Fig. 2.

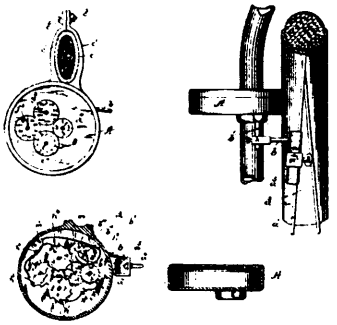
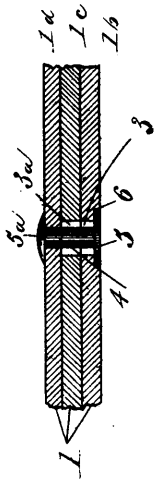
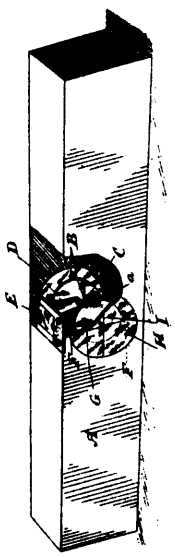


Fig. 3. Fig. 4.

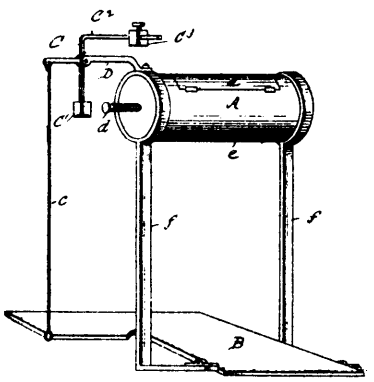
41834 Weston's Cyclometer.



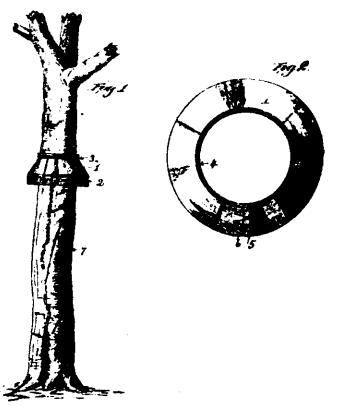
41835 Todd's Power Transmitter.



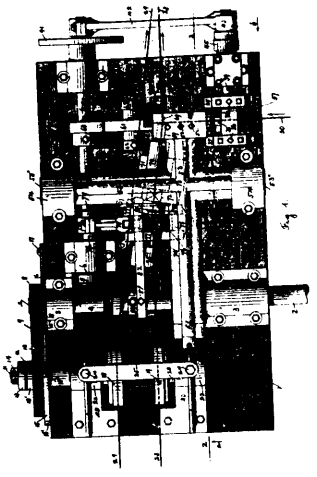
41836 Nisbett's Level.



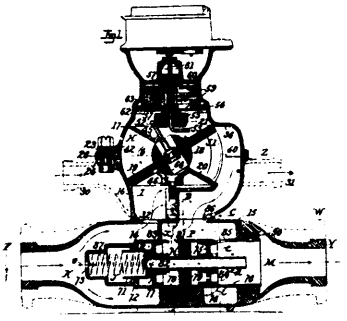
41837 Hawley's Apparatus for Applying Insecticide.



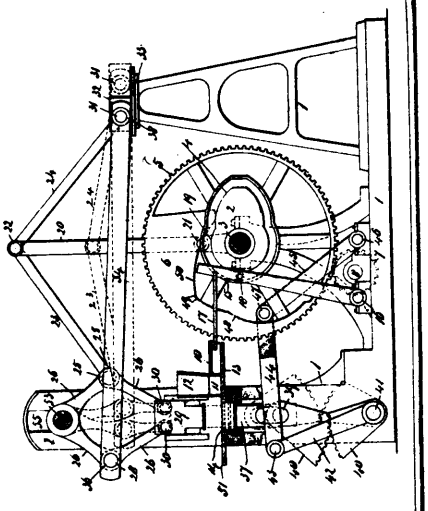
41838 Ryan and Ward's Tree Protector.



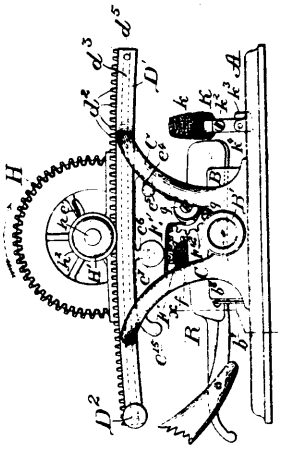
41839 Curtis' Method of making Barbed Wire.



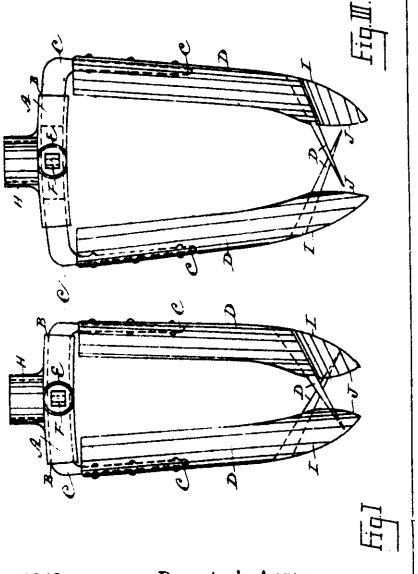
41840 Thomson's Water Meter.



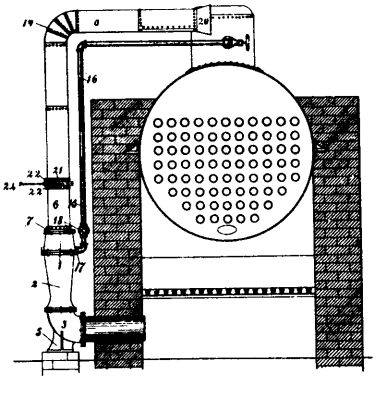
41841 Adams' Brick Machine.



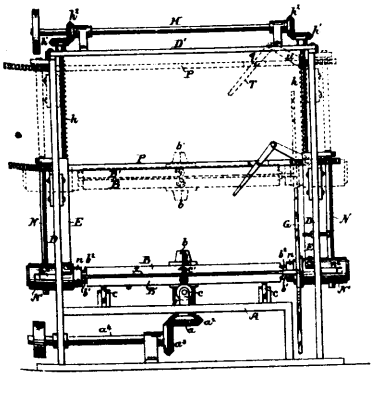
41842 Worden's Machine for Sharpening Razors, &c.



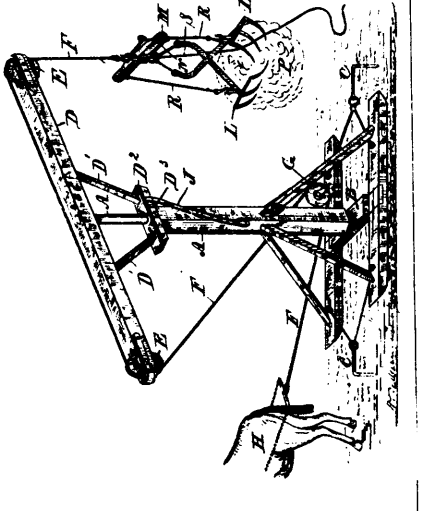
41843 Decantur's Auger.



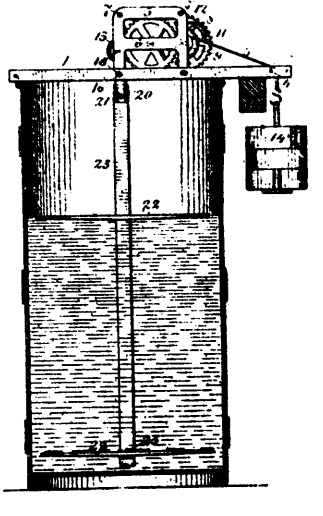
41844 Earle's Air Injector and Exhauster.



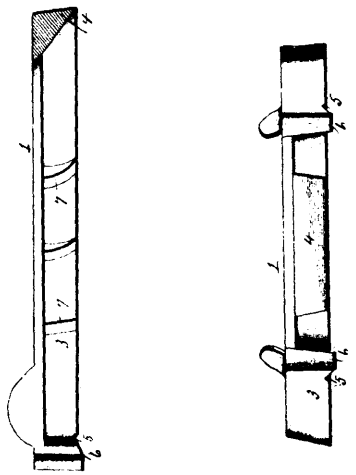
41845 Bonta's Machine for Grinding Glass.



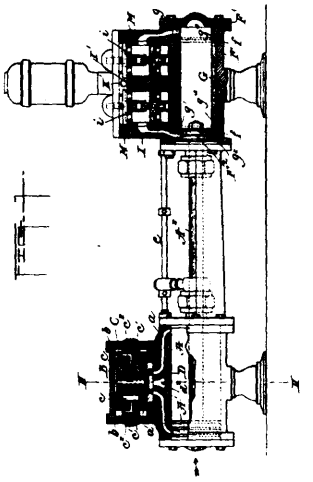
41846 Jones' Load Lifter.



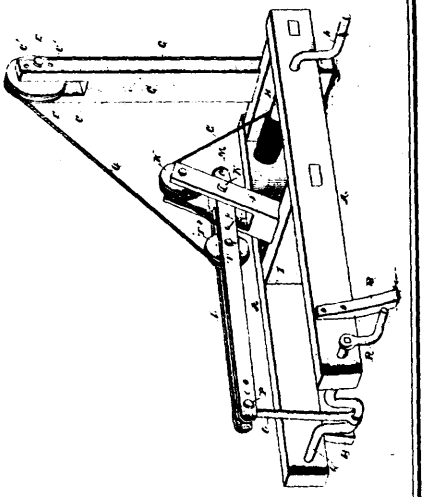
41847 Ewing's Milk Agitating Machine.



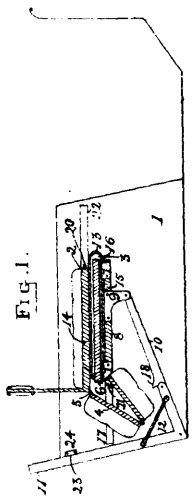
41848 Custer's Horse Shoe.



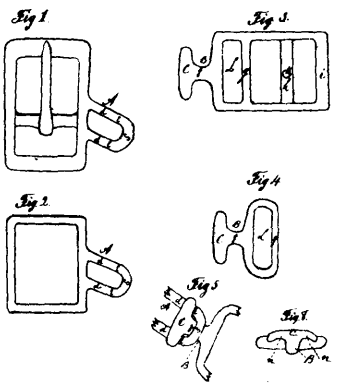
41849 Eicher's Steam Pump.



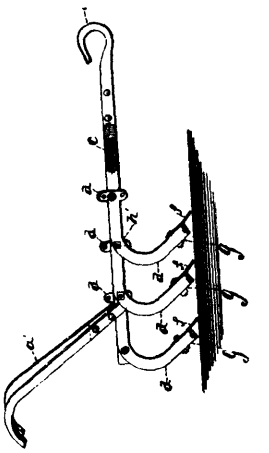
41850 De La Mare's Jetty Apparatus.



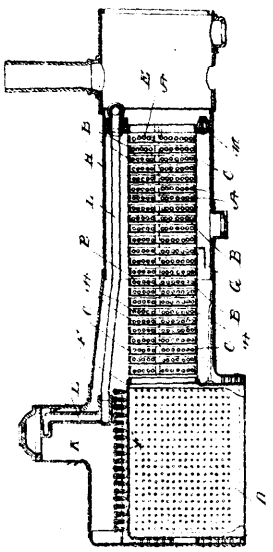
41851 McCann's Adjustable Seat for Vehicles.



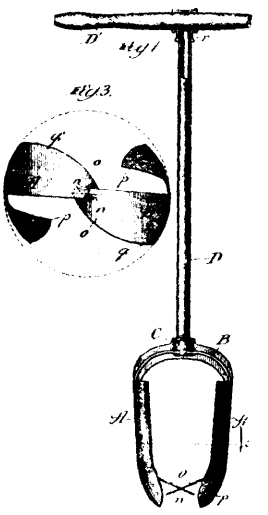
41852 Coleman's Lock.



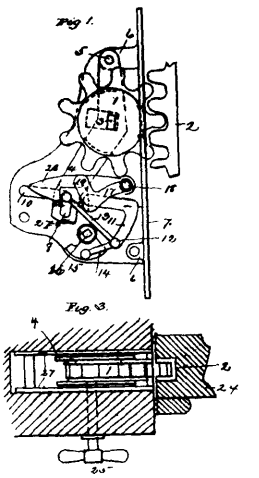
41853 Moore's Plow.



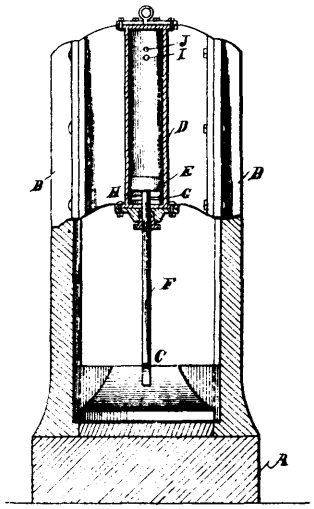
41854 Perkins' Water Tube Locomotive Boiler.



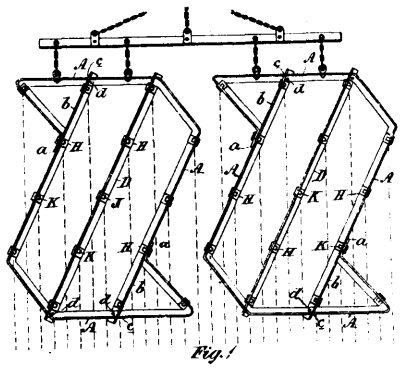
41855 Irvan's Earth Auger.



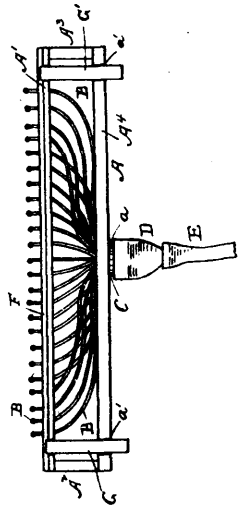
41856 McMillen's Sash Balance.



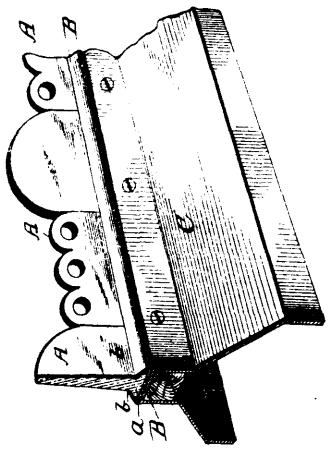
41857 Mason's Steam Drop Press.



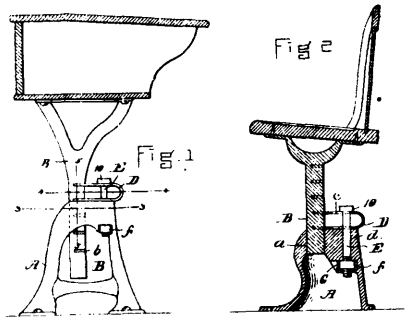
41858 Callander's Harrow.



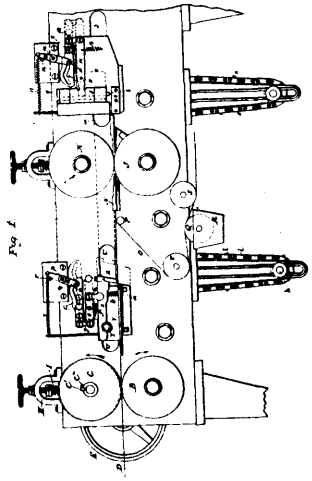
41859 Stearns' Apparatus for Holding and Dipping Pills.



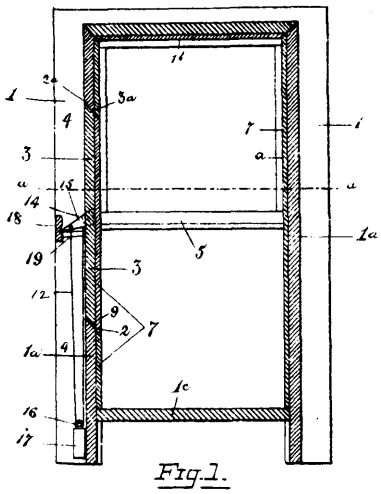
41860 Nelson's Cresting.



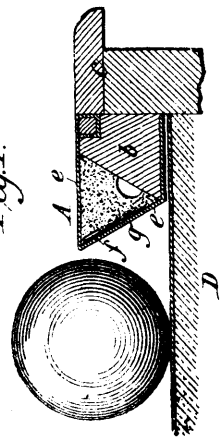
41861 Chandler's Adjustable Supporting Standard for School Desks and Seats.



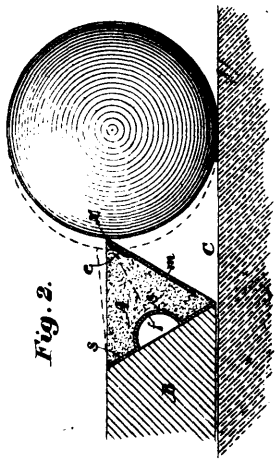
41862 Schneller's Machine for covering Dress Stays.



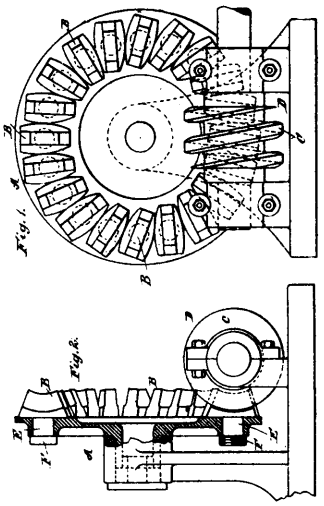
1863 Harvey's Window Frame and Sash Support.



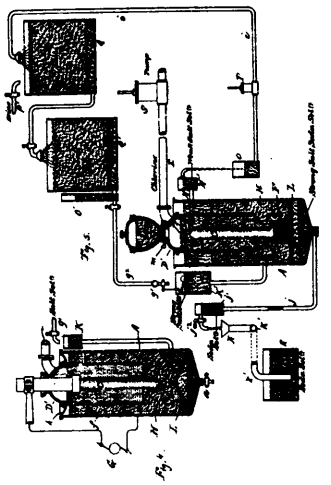
41864 Bensinger's Cushion for Billiard Tables.



41865 Bensinger's Cushion for Billiard Tables.

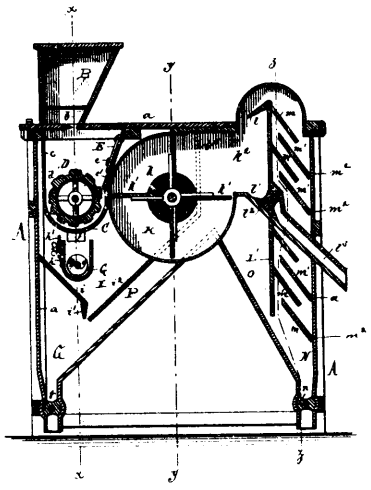


41866 **Campbell's Toothed Gearing.**

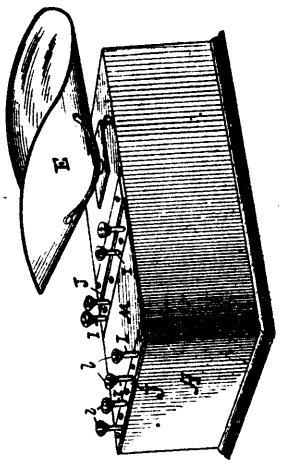


41867 **Cutten's Apparatus for electrically producing Soda and Chlorine.**

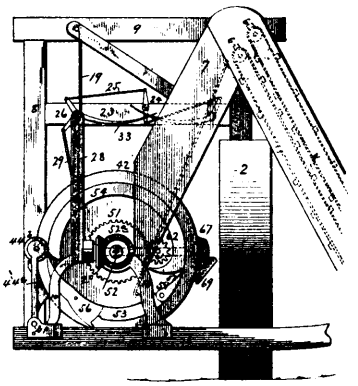
41868 **Underwood's Shears.**



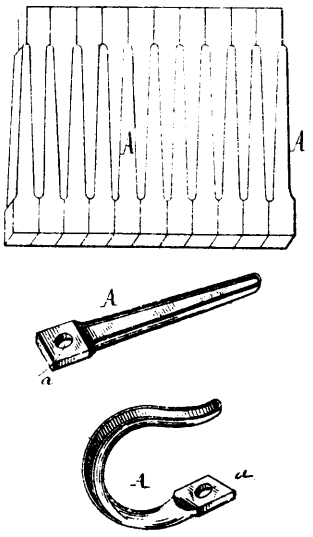
41869 **Heine's Grain Cleaner.**



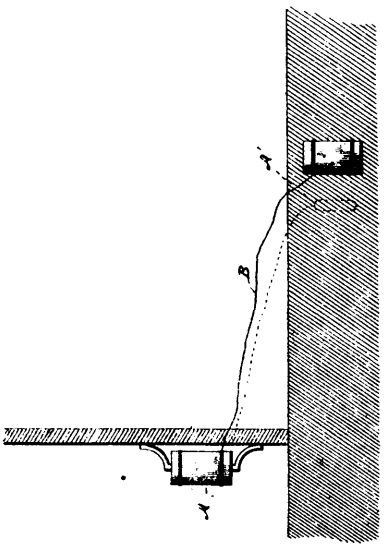
41870 **Shaffer's Balance Scale.**



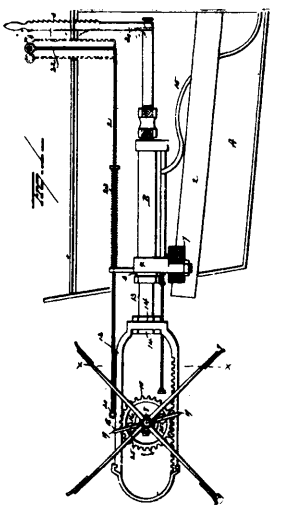
41871 **Grieser's Grain Binder.**



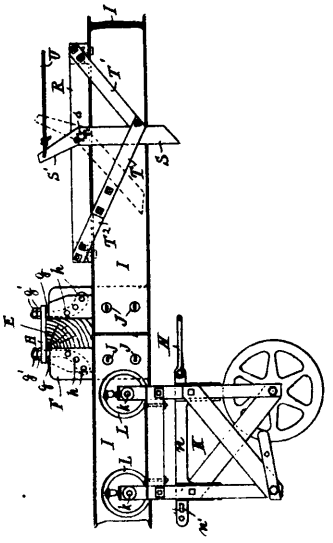
41872 **Kelley's Method of making Sheet Metal Check Hooks.**



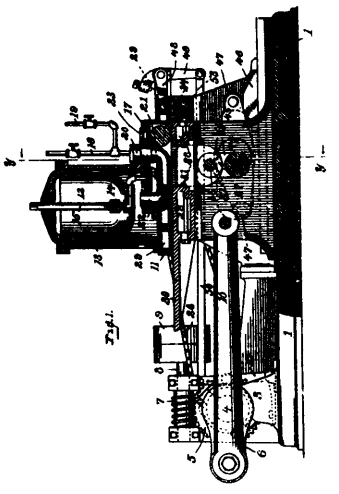
41873 **Webb's Electric Battery.**



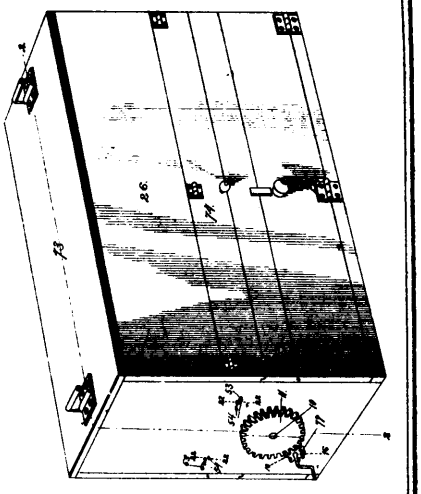
41874 **Reynolds' Steering, Propelling and Reversing Apparatus.**



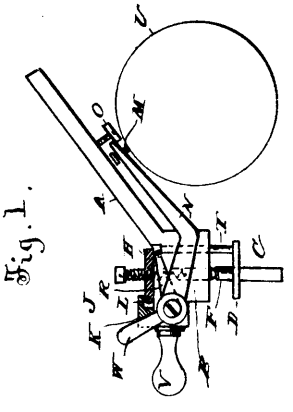
41875 **Drew's Apparatus for Raising and Moving Material.**



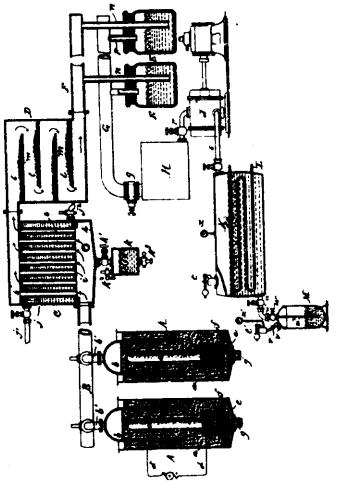
41876 **Madden's Machine for making Grids for Secondary Batteries.**



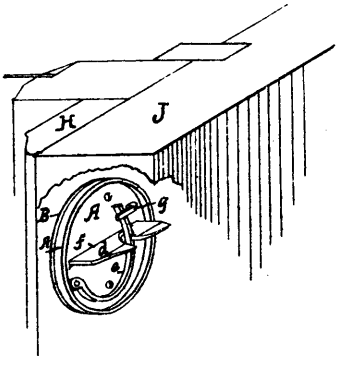
41877 **Barker's Apparatus for making Ice Cream.**



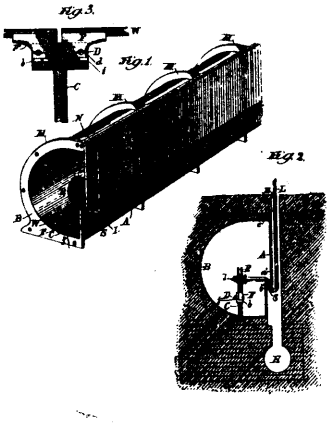
41878 **Edison's Determining Device for Phonographs.**



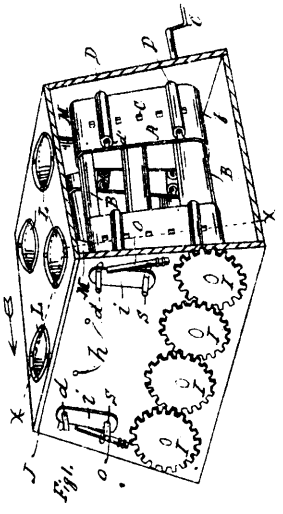
41879 **Cutten's Apparatus for Producing Chlorine in Liquid Form.**



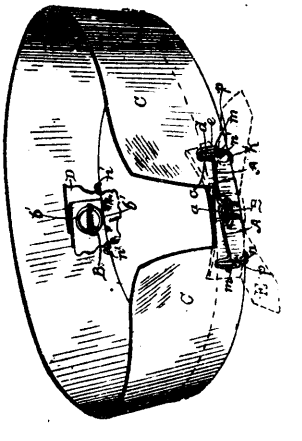
41880 **White's Window Stop Fastener.**



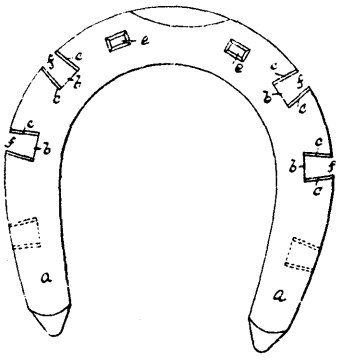
41881 **Bradley's Conduit for Electric Railways.**



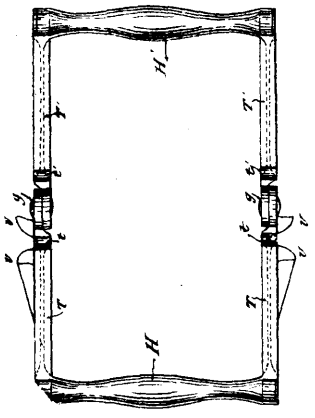
41882 **McCollum and Murphy's Milking Machine.**



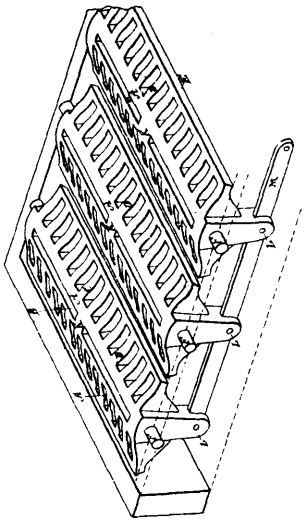
41883 **Bragger and Scofield's Necktie Fastener.**



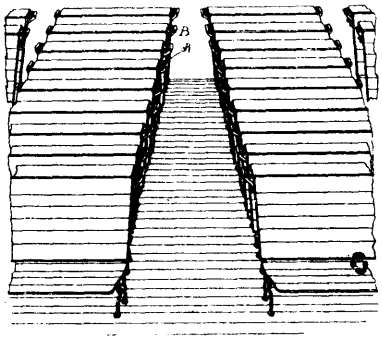
41884 McHarris' Horse Shoe.



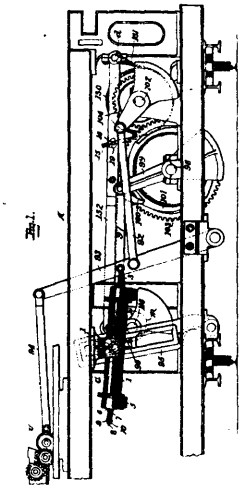
41885 Beaudry and Mireau's Fire Escape.



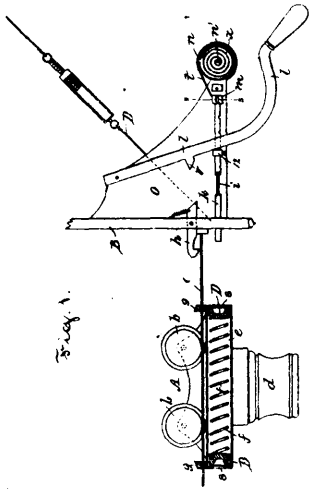
41886 Heeson's Furnace Grate.



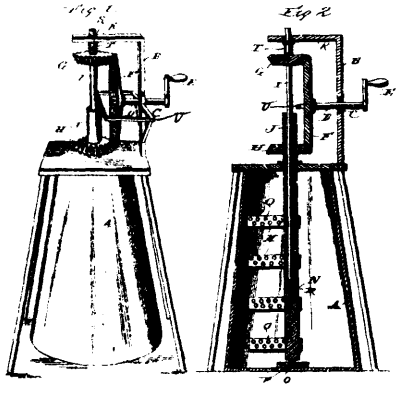
41887 Bessing and Way's School Room Gymnastic Apparatus.



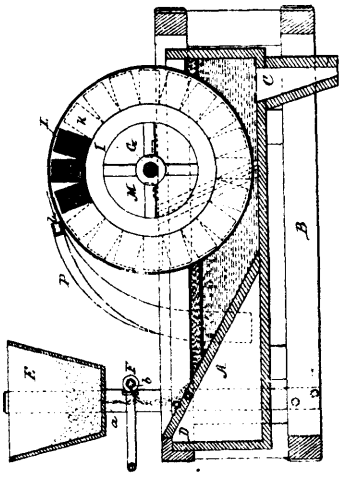
41888 Eisenhardt's Oilcloth Printing Machine.



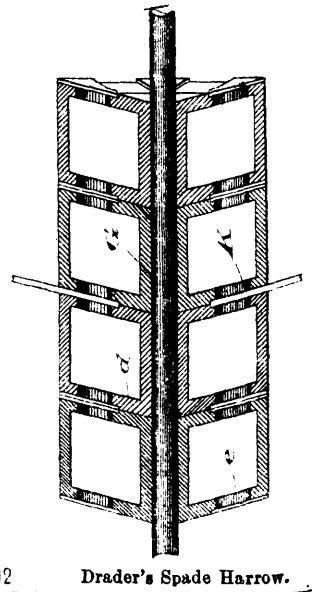
41889 Tucker's Cash and Parcel Carrier.



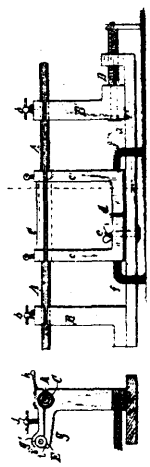
41890 Cooper's Churn.



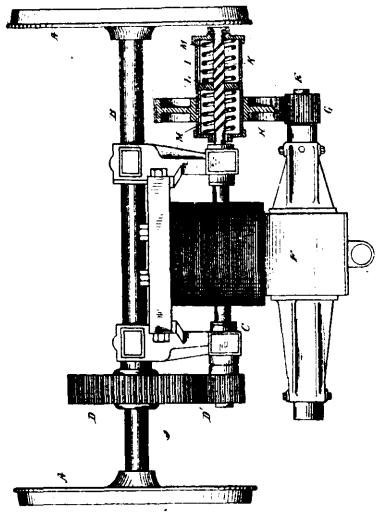
41891 Edison's Magnetic Separator.



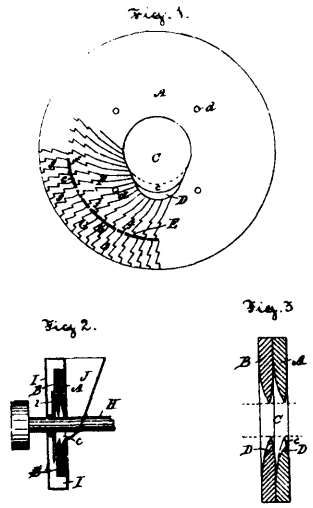
41892 Drader's Spade Harrow.



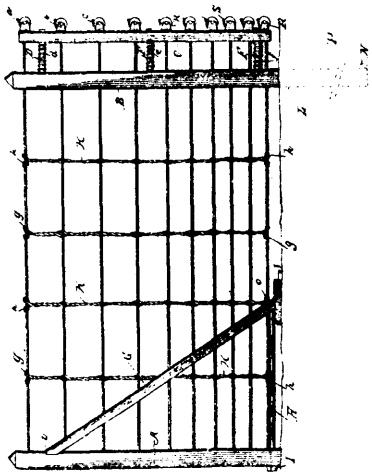
41893 Dewey's Apparatus for Working Metals by Electricity.



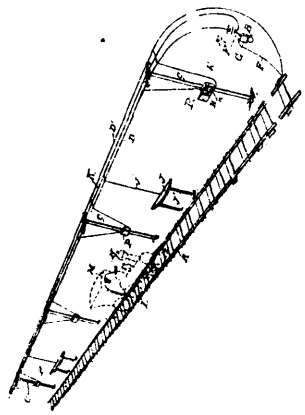
41894 Johnson's Power Transmitting Device.



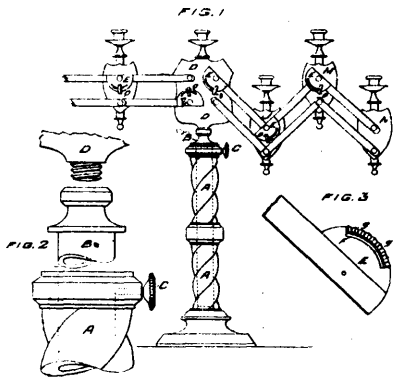
41895 Cloutier's Grinding Mill Stones.



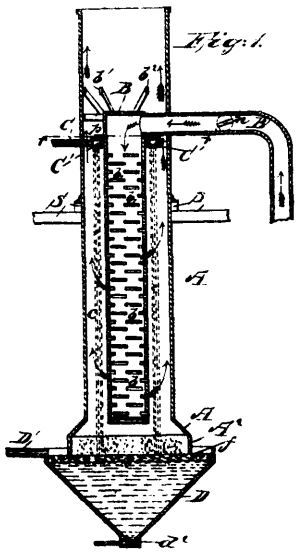
41896 Spillinger's Fence.



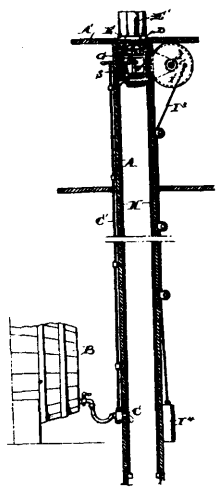
41897 McCartney's Signalling Apparatus.



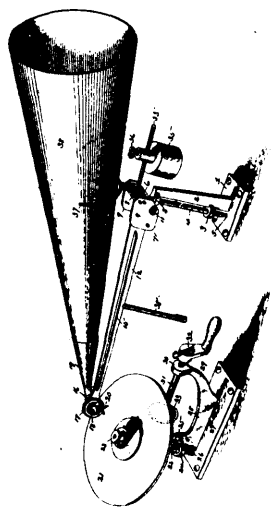
41898 Gauthier's Candelabrum.



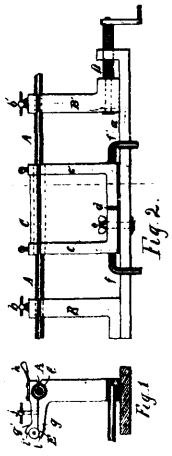
41899 Monsanto's Apparatus for Vapourizing Liquids.



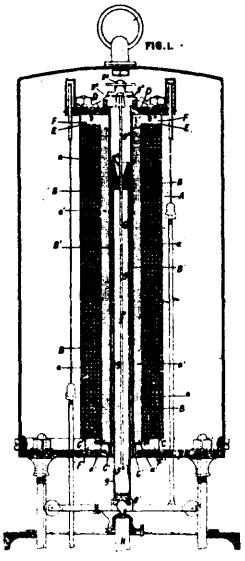
41900 Jenkins' Apparatus for Delivering Liquids.



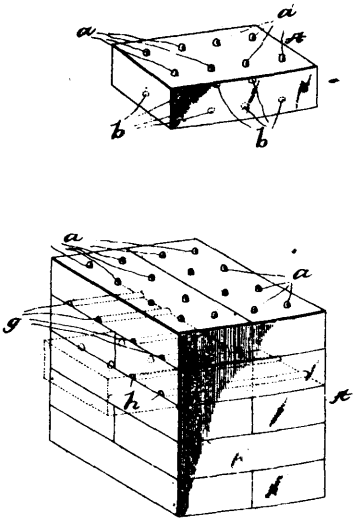
41901 Berliner's Gramaphone.



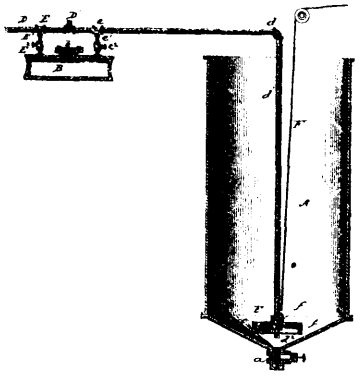
41902 Dewey's Method of Electric Welding or Metal Working.



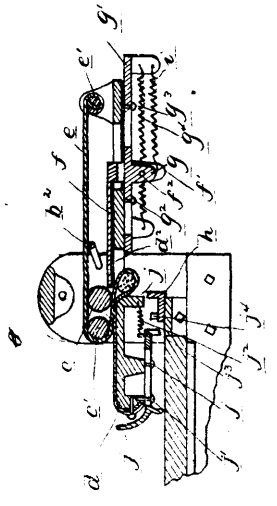
41903 Harper, Tryon and Poole's Arc Lamp.



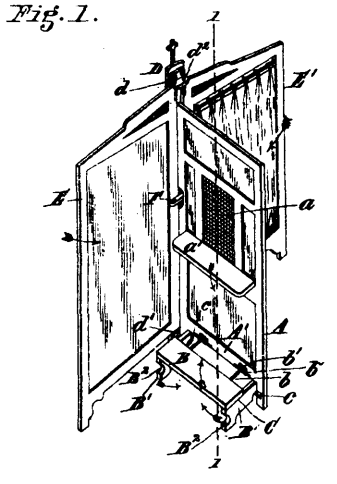
41904 Borgner's Brick.



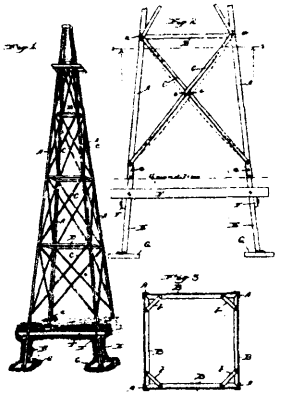
41905 Kendall's Process of Freeing Malodorous Hydrocarbon from Offensive Odors.



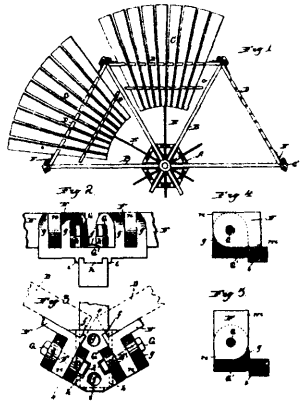
41906 Gordon's Cigar Bunching Machine.



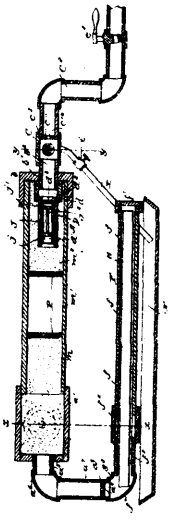
41907 Firnstein's Folding Confessional.



41908 Snow's Tower for Windmills.

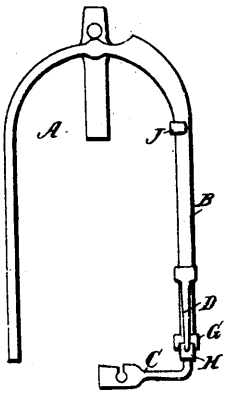


41909 Snow's Windmill.

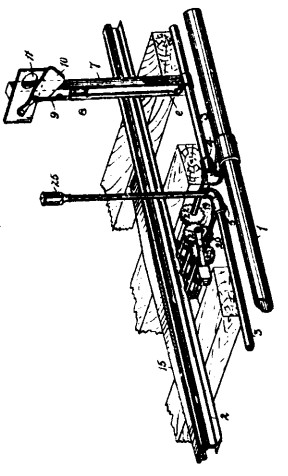


41910 Otis' Hydrocarbon Burner for Stoves, &c.

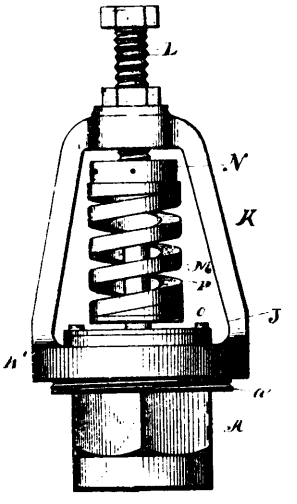
Fig. 1.



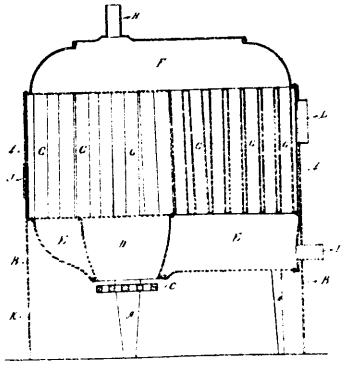
41911 Newton's Presser Flyer.



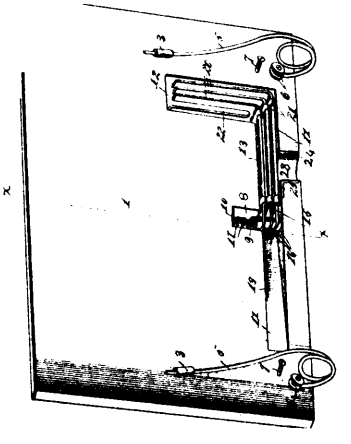
41912 McCartney's Railway Signal.



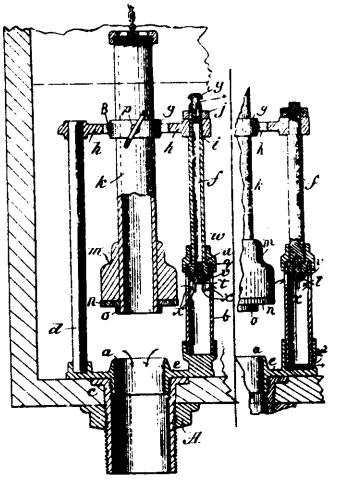
41913 Rivers and Gray's Safety Valve.



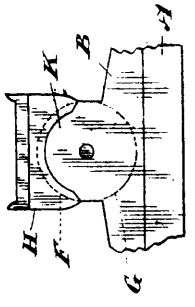
41914 Gregoire's Hot Water Furnace.

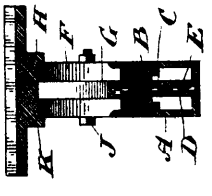


41915 Catlin's Music Leaf Turner.

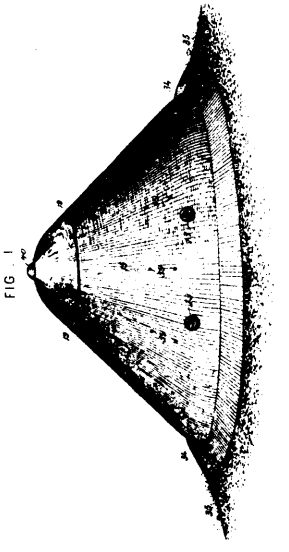


41916 Glover and Stevens' Slow Closing Valve for Water Closet Tanks.



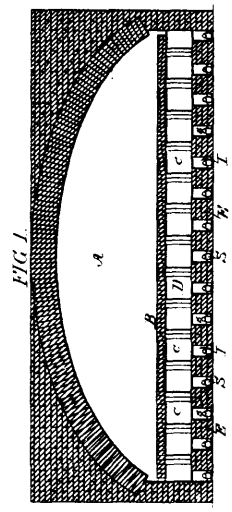


41917 Jackson's Bob Sleigh.

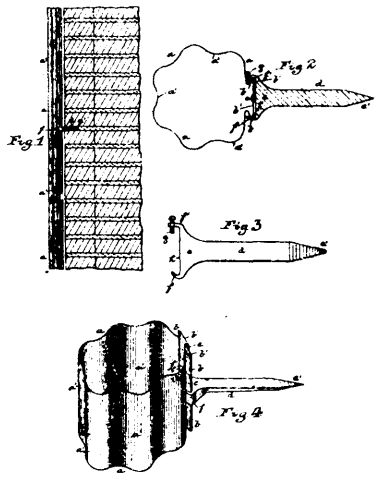


41918 Timby's Revolving Tower Fortification.

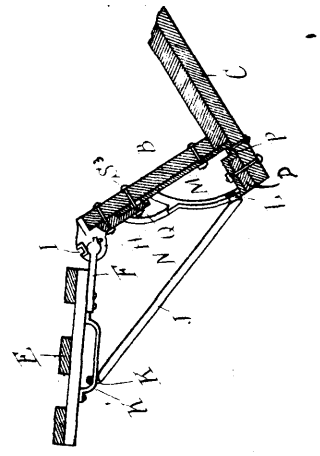
41919 Timby's Apparatus for Evaporating Brine.



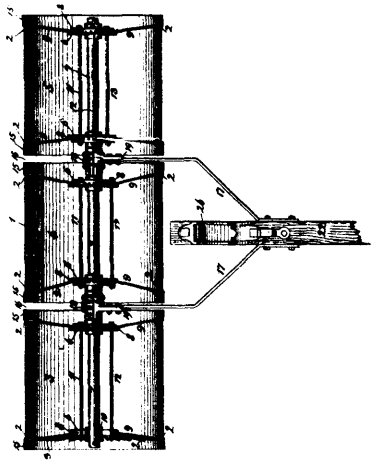
41920 Bonta's Annealing Furnace for Glass.



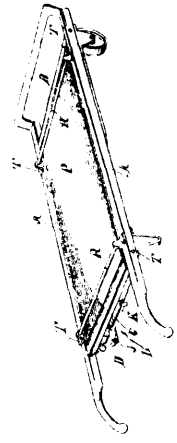
41921 Silberstein's Water Conductor.



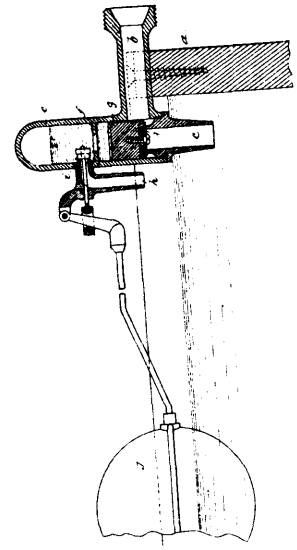
41922 Hewitt's Hay and Stock Rack.



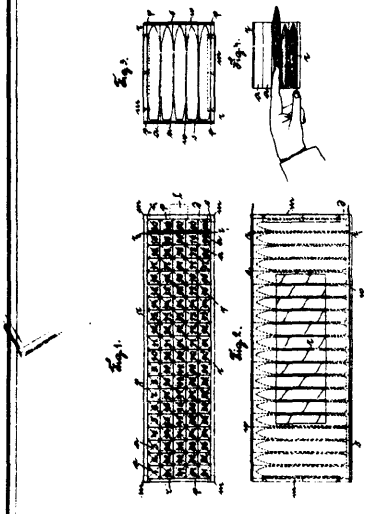
41923 Corbin's Land Roller.



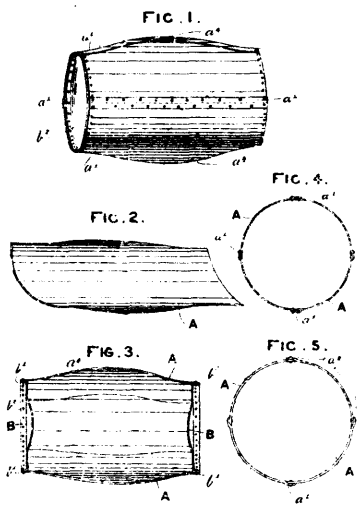
41924 Chandler's Weighing Truck.



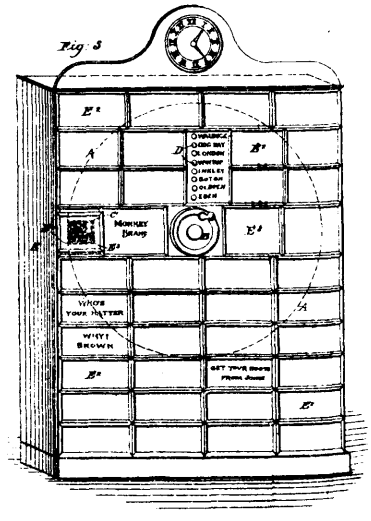
41925 Folger's Ball Cock.



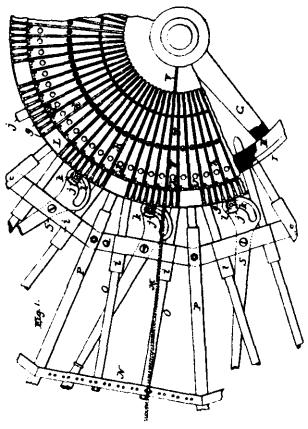
41926 Kunzell's Cigar Box.



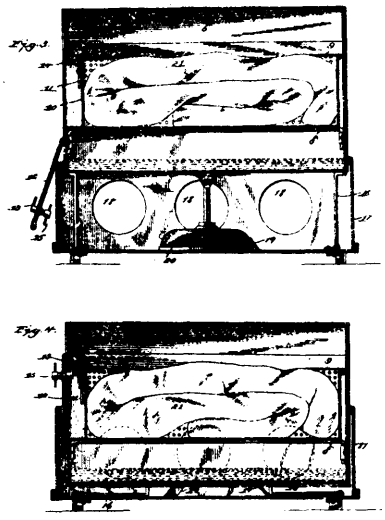
41927 Shenton's Cask.



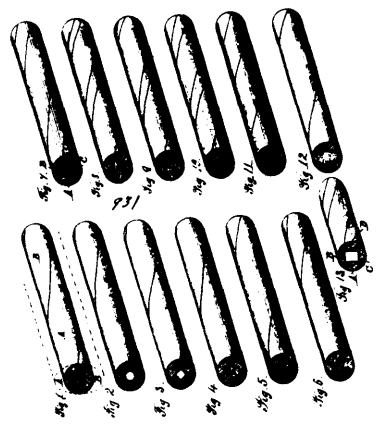
41928 Manton's Machine for Exhibiting Advertisements.



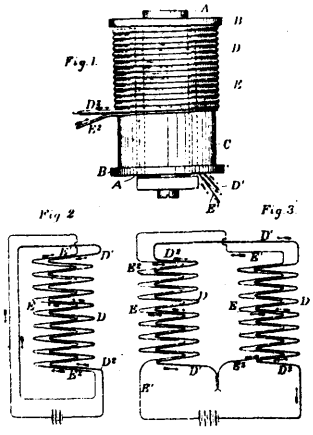
41929 McMillan and Joslyn's Type Distributing Machine.



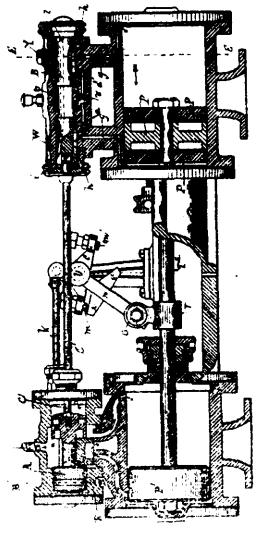
41930 Van Heusen's Apparatus for Heating and Sterilizing Surgical Bandages.



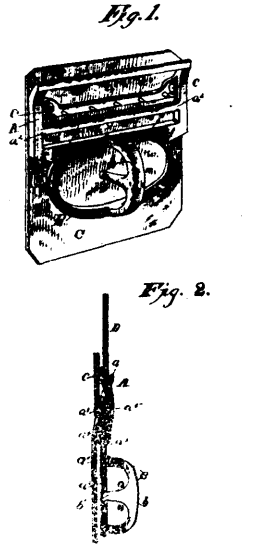
41931 Batchelor and Latch's Wire.



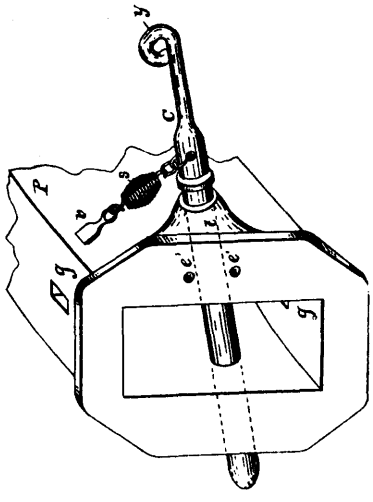
41932 Varley's Electric Magnet.



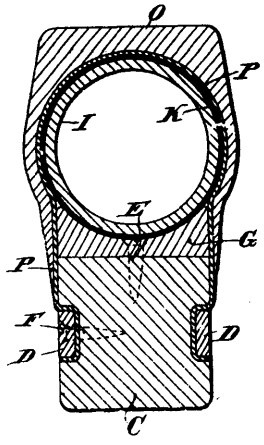
41933 Smedley's Steam Actuated Air Pump.



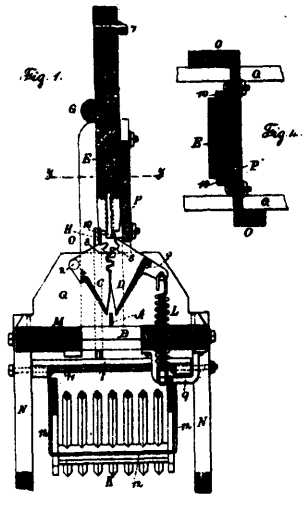
41934 Ward's Back Band Hook.



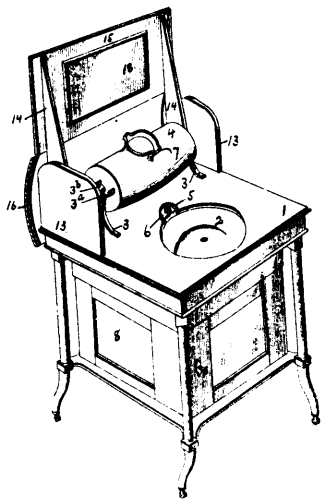
41935 Diederick's Car Coupler.



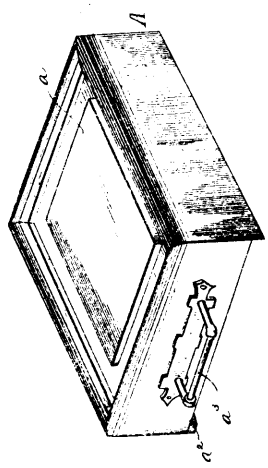
41936 Swain and Philipson's Vehicle Tyre.



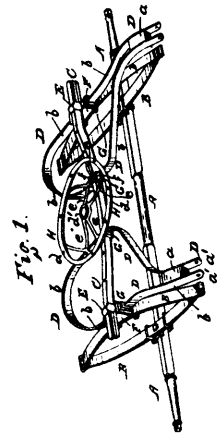
41937 Aspinwall's Potato Cutter.



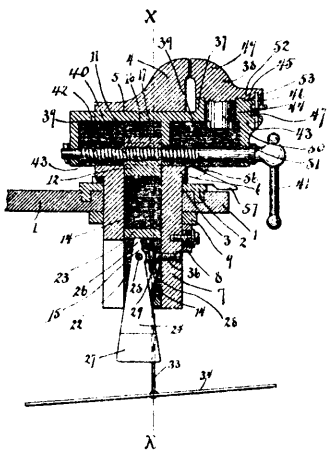
41938 **Bond's Washstand.**



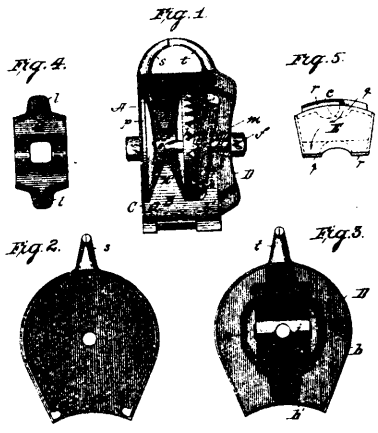
41939 **Culver's Coin Case.**



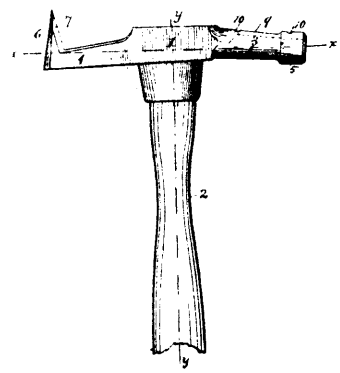
41940 **Morrell and Eddy's Front Gear for Vehicles.**



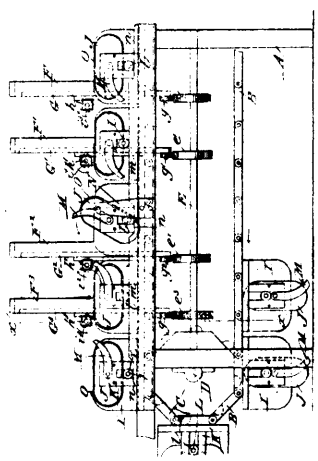
41941 **Ernest's Vise.**



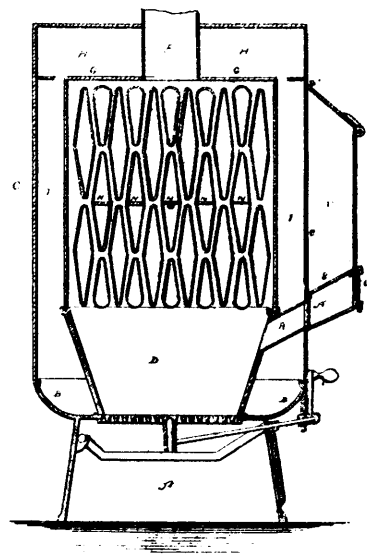
41942 **Shaw's Fire Escape.**



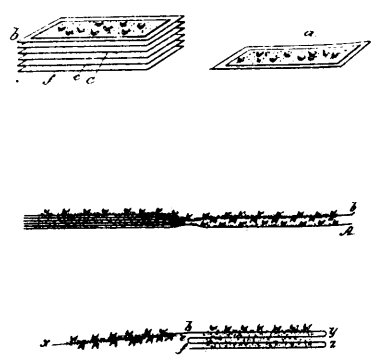
41943 **Richardson's Hammer.**



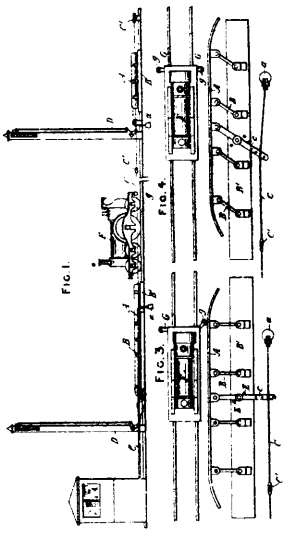
41944 **Reid's Self-feeding Machine for Shaping Irregular Forms.**



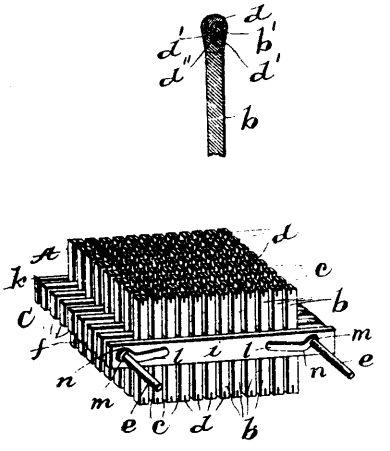
41945 **Hemingway's Hot Air Furnace.**



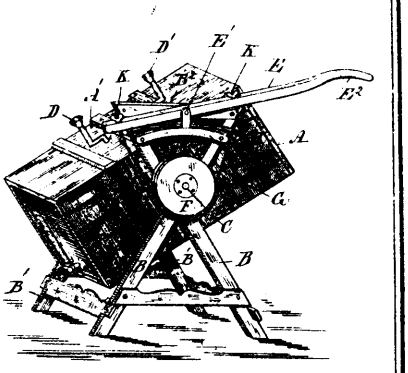
41946 **Thum's Fly Paper.**



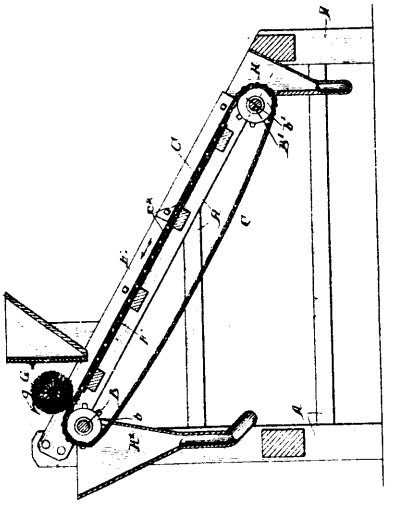
41947 Wiles' Railway Signal.



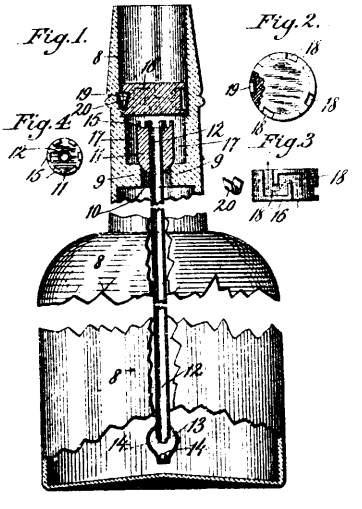
41948 Bowman's Match.



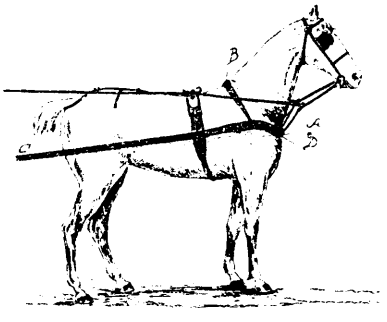
41949 Hamlin's Churn.



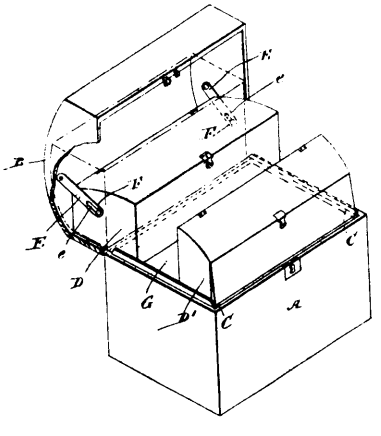
41950 Rich's Cleaner for Oats.



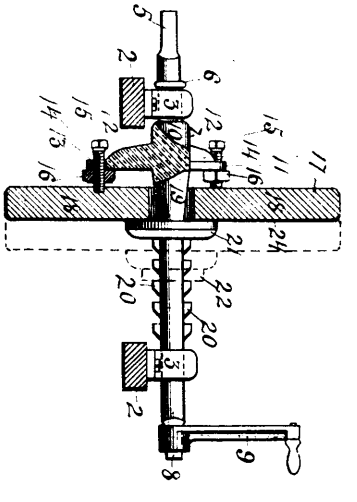
41951 Ferris' Bottle Stopper.



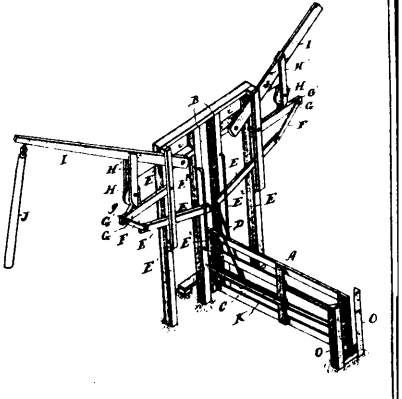
41952 Cain's Breast Collar.



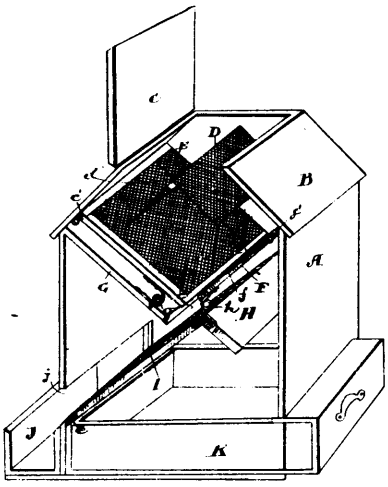
41953 Barrington's Trunk.



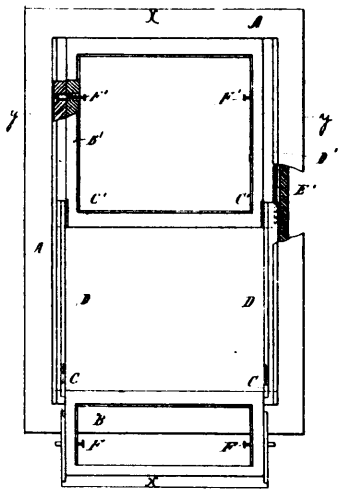
41954 Peterson's Grindstone Hanger.



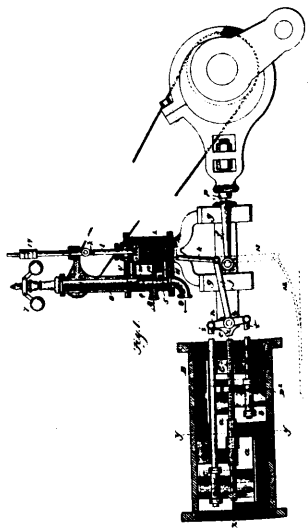
41955 Harbaugh's Gate.



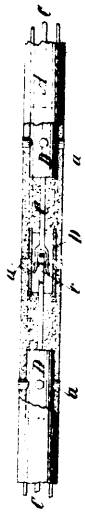
41956 **Vardon's Cinder or Gravel Sifter.**



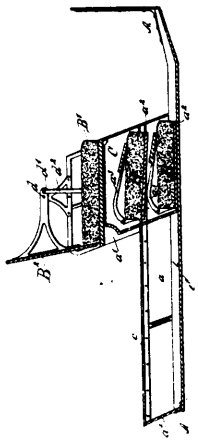
41957 **Cohen's Window Sash.**



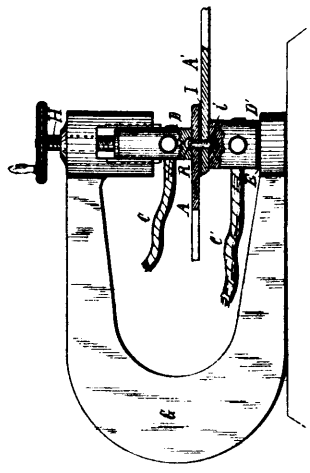
41958 **Bolthoff's Steam Engine and Motor for operating the Valves thereof.**



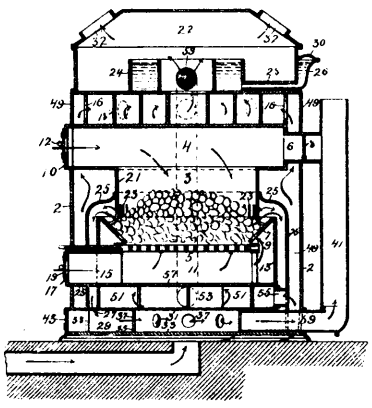
41959 **Mitchell's Conductor for Electric Railways.**



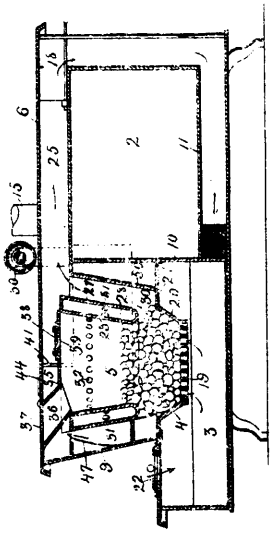
41960 **Adelsperger's Shifting Seat for Vehicles.**



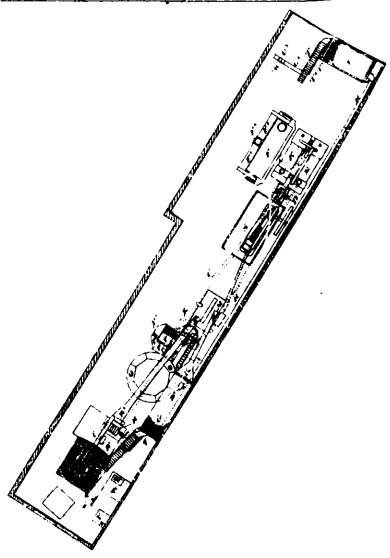
41961 **Dewey's Method of Electric Rivetting.**



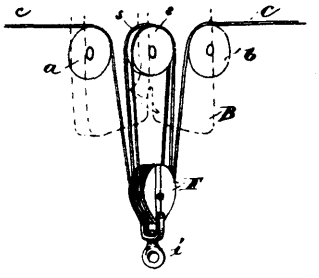
41962 **Harkins' Heater.**



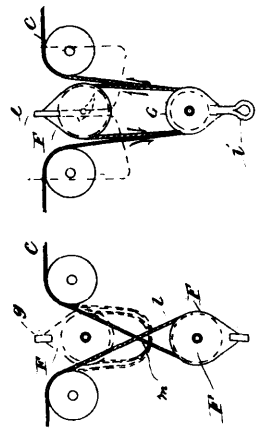
41963 **Harkins' Cooking Stove.**



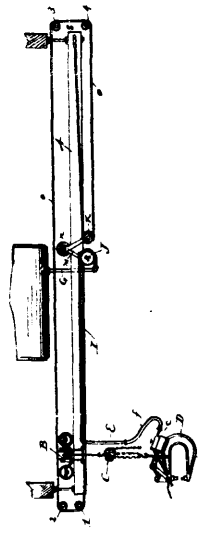
41964 **Stanley and Russell's Apparatus for treating the refuse of Dust-bins.**



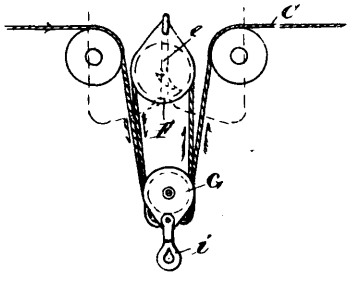
41965 Brown's Hoisting and Conveying Machine.



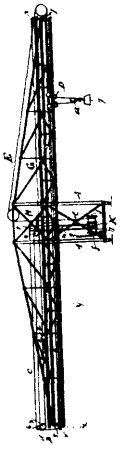
41966 Brown's Hoisting and Conveying Machine.



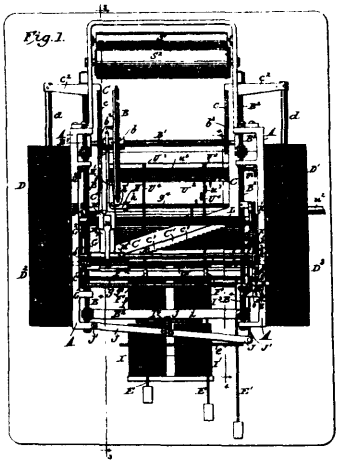
41967 Brown's Device for supporting and controlling the movements of Flexible Supply Pipes.



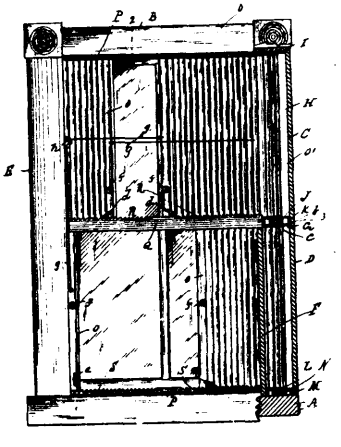
41968 Brown's Hoisting and Conveying Machine.



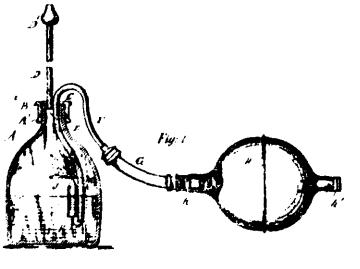
41969 Brown's Hoisting and Conveying Machine.



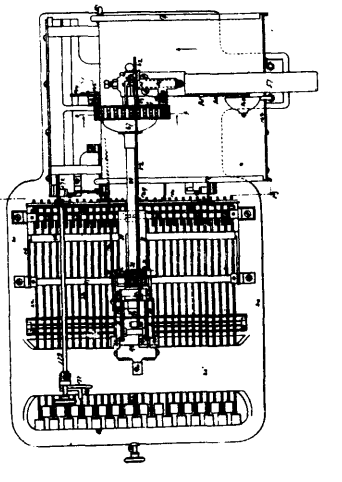
41970 Silkman's Printing Telegraphs.



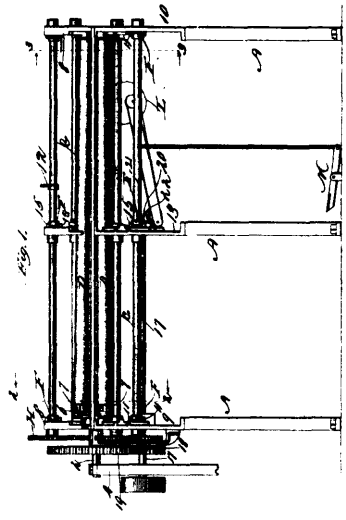
41971 Gilliam's Window Blind.



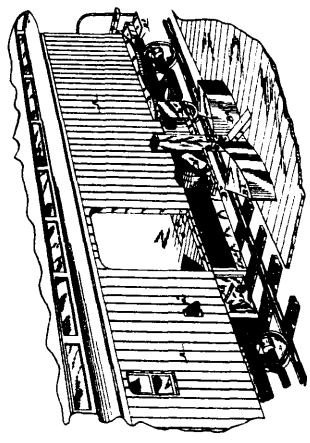
41972 Morehouse's Atomizer.



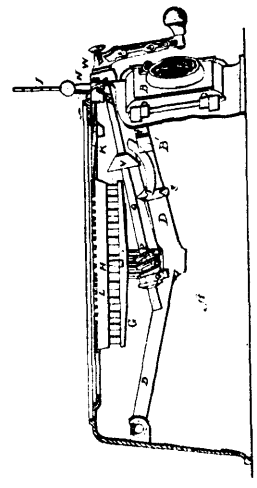
41973 Kletzker's Matrix-making Machine.



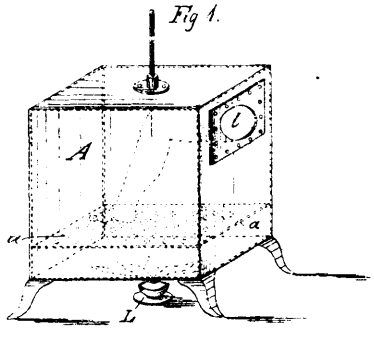
41974 **Rosback and Band's Machine for making Fence Posts.**



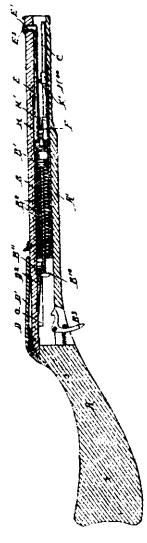
41975 **Kimber's Mail Pouch Catcher and Deliverer.**



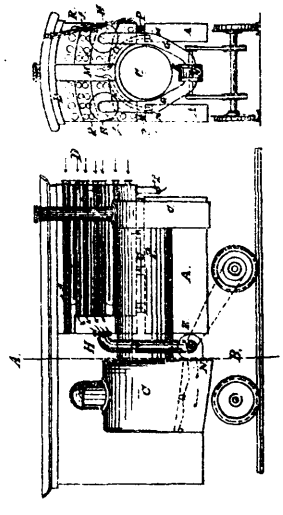
41976 **Hemingway's Grate.**



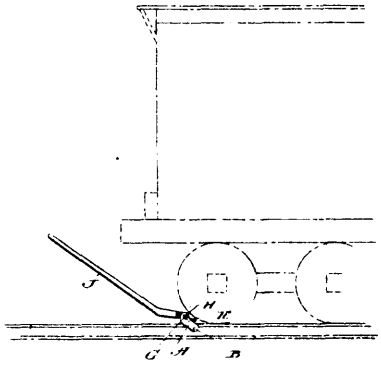
41977 **Riemer's Bath for Sweating with Dry Heat.**



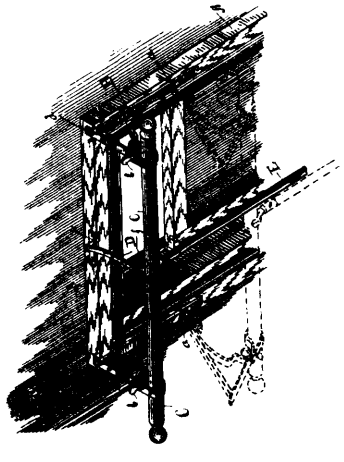
41978 **Hubbard's Toy Gun.**



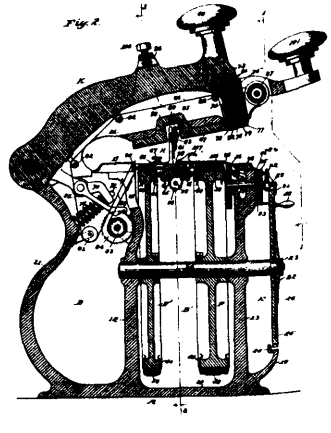
41979 **Ramsay's Locomotive.**



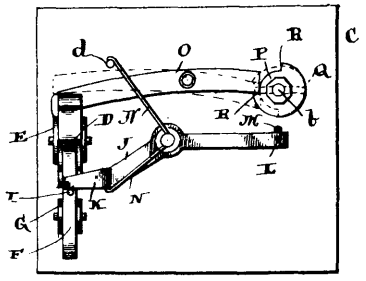
41980 **Pierce's Car Mover.**



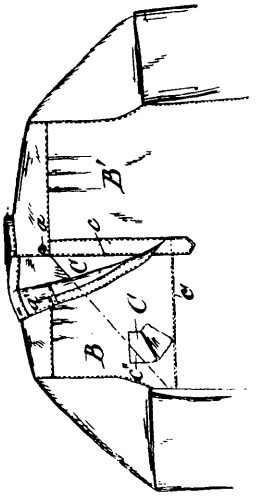
41981 **Martel's Curtain Pole Supporter.**



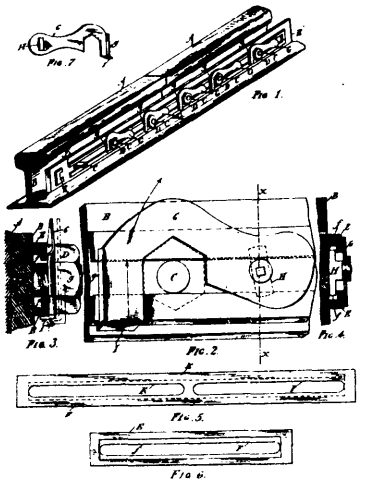
41982 **Gibbs' Ticket Machine.**



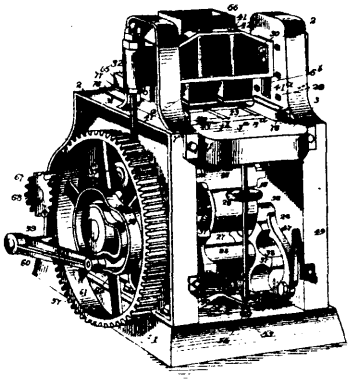
41983 Coulter's Sash Holder and Lock.



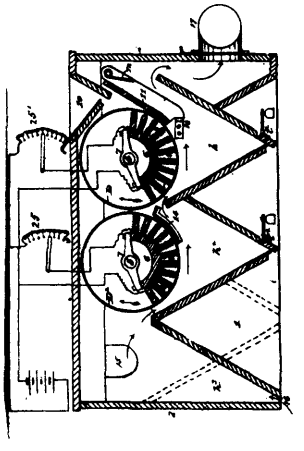
41984 Hagen's Shirt.



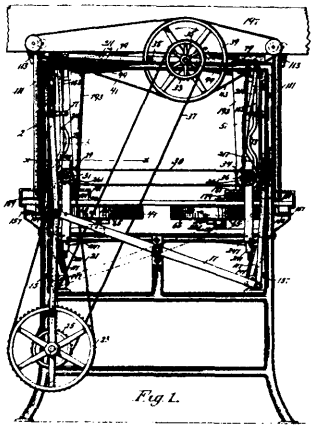
41985 Stevens and Trimmer's Nut Lock.



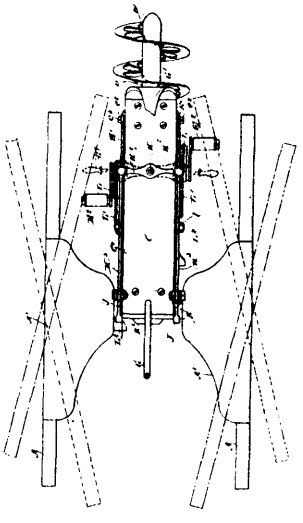
41986 Mead's Brick-making Apparatus.



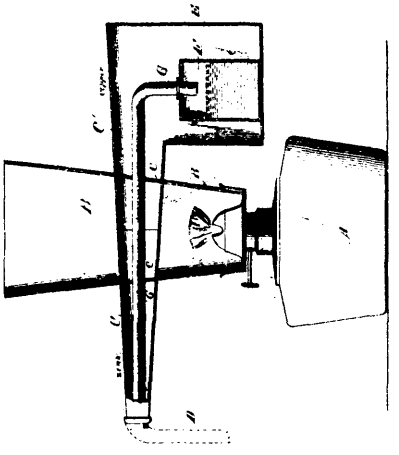
41987 Ball's Apparatus for Separating Ore.



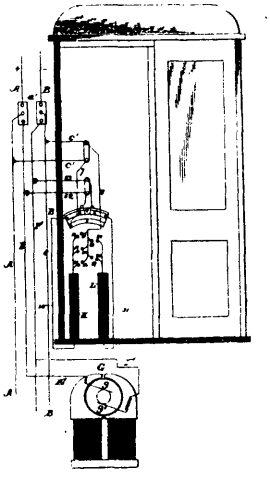
41988 Bennett's Cartridge Loader.



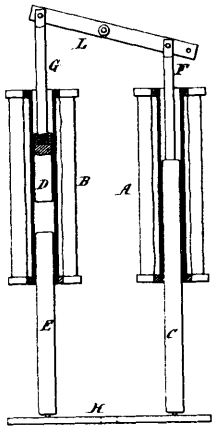
41989 Carpenter's Vehicle.



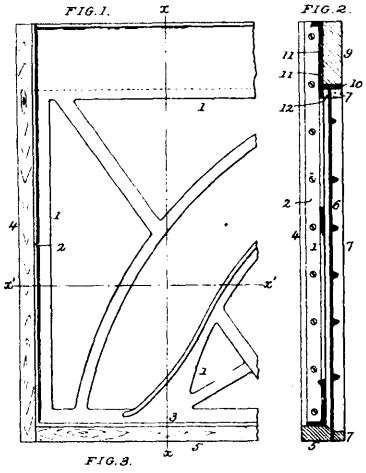
41990 McGrath's Inhaler.



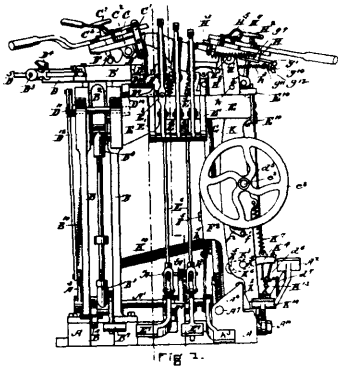
41991 Neuburger's Electric Elevator.



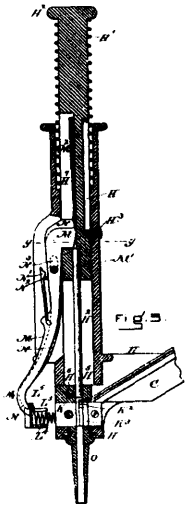
41992 Brockie's Method of controlling the feed mechanism of Electric Arc Lamps.



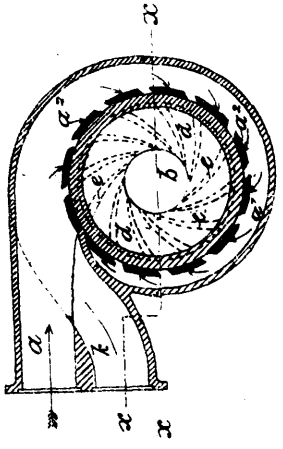
41993 Reed's Piano.



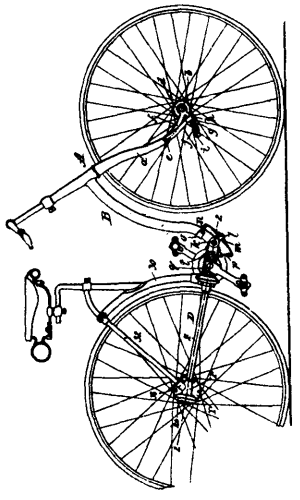
41994 Crisp and Grandy's Machine for Lasting Boots and Shoes.



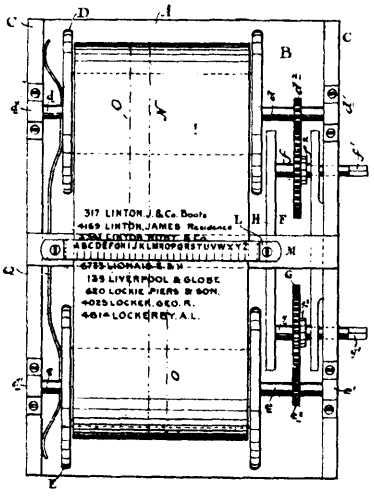
41995 Copeland and Crisp's Tack Driving Machine.



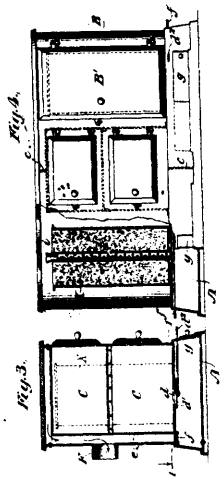
41996 Fyfe's Amalgamating Apparatus for Crushed Ore.



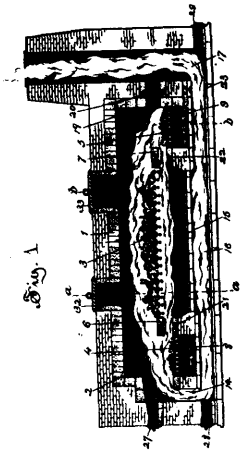
41997 O'Connor's Velocipede.



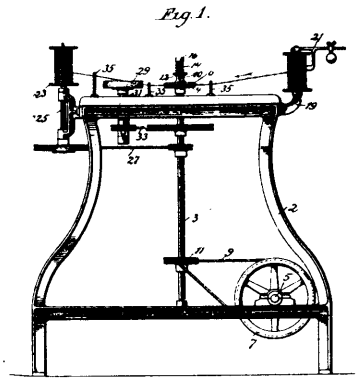
41998 Seguin's Telephone Directory.



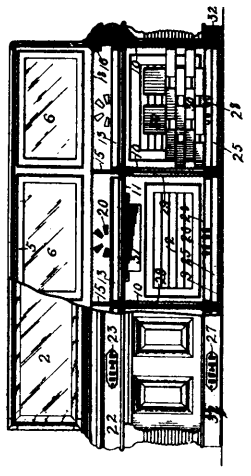
41999 Field's Stove for burning Straw and other Vegetable Growths.



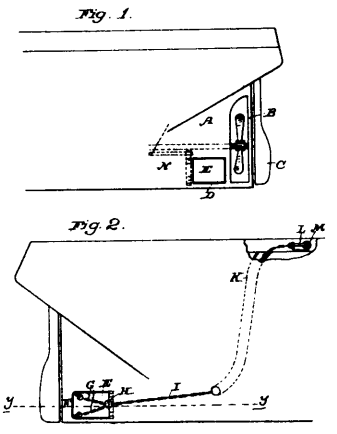
42000 Warner's Furnace for burning Garbage.



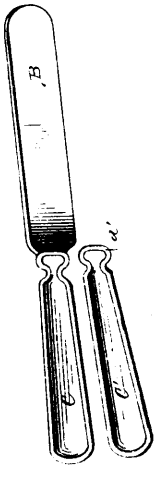
42001 Travis' Means for removing Material from Thread Fiber.



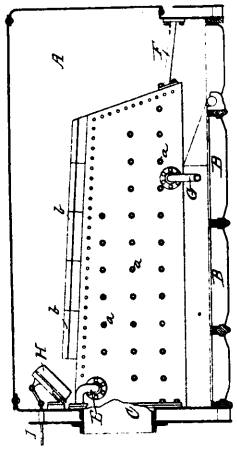
42002 Pratt's Cigar Case.



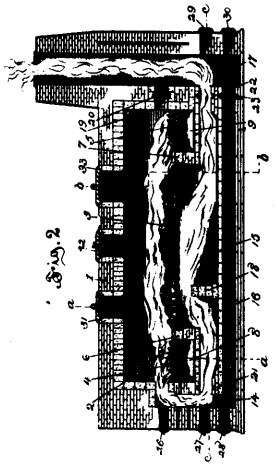
42003 Weitzel's Auxiliary Steering Gear.



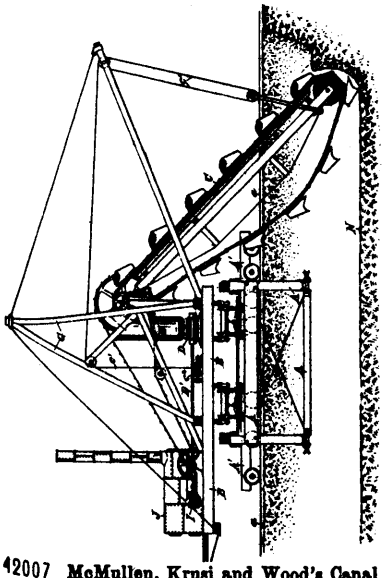
42004 Kelley's Knife.



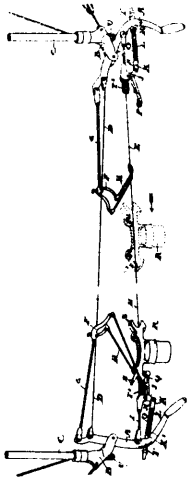
42005 Barclay's Locomotive and Marine Boiler.



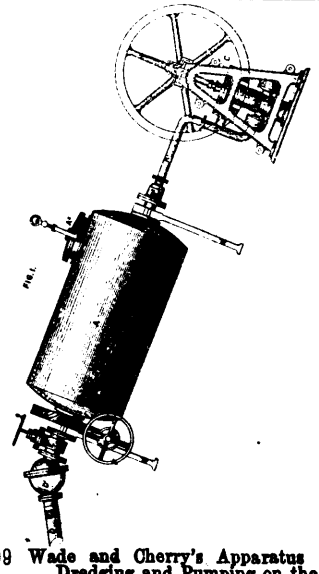
42006 Warner's Furnace for burning Garbage.



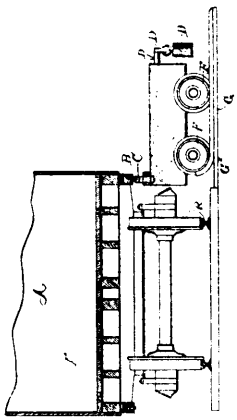
42007 McMullen, Krusi and Wood's Canal Digger.



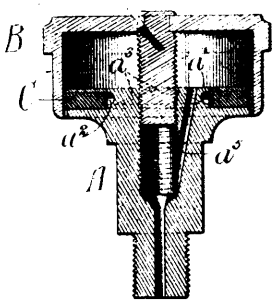
42008 Hazard's Cash Carrier.



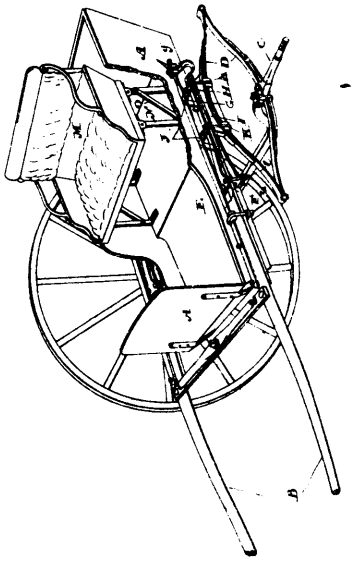
42009 Wade and Cherry's Apparatus for Dredging and Pumping on the Suction System.



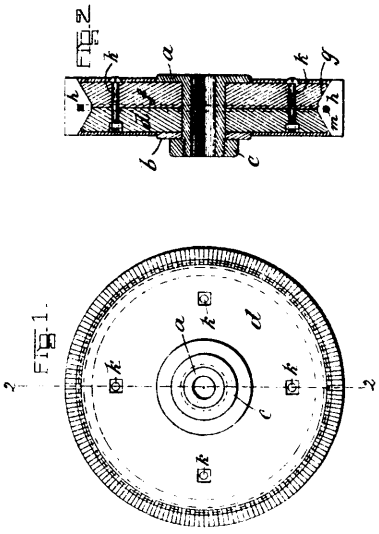
42010 Kehr's Means for Recording Moving Cars.



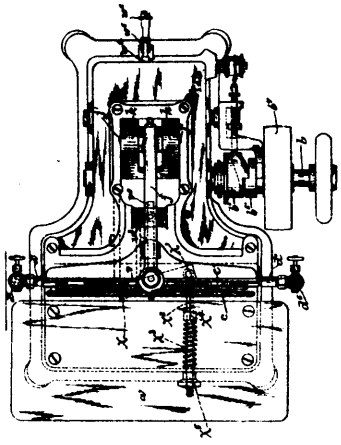
42011 Besley and Gardner's Force Feed Lubricator.



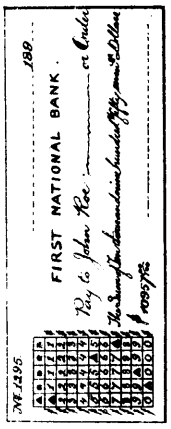
42012 Jackson's Cart Gear.



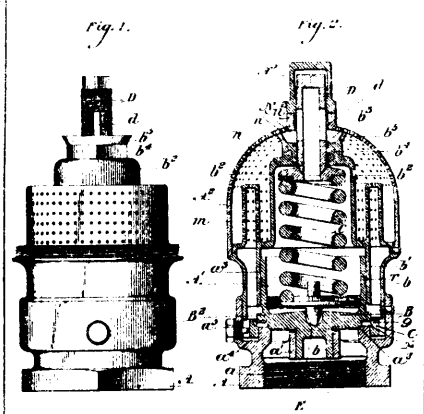
42013 Yates' Polishing Wheel, Pulley, &c.



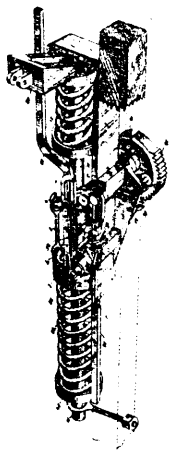
42014 Williams' Machine for Crimping Cloth, &c.



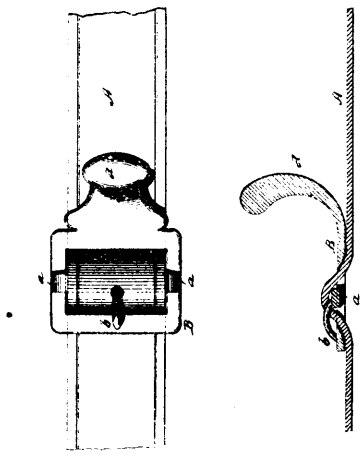
42015 Spalding's Check or other Money Order.



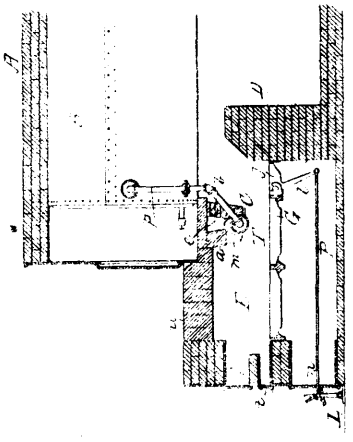
42016 Coale's Valve.



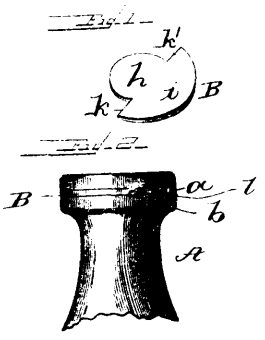
42017 Guernsey's Car Brake.



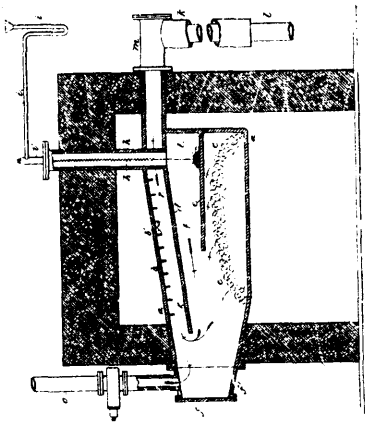
42018 Edge's Buckle Holder for Reins.



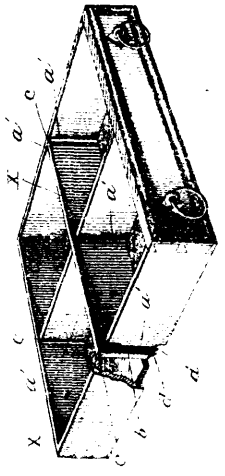
42019 Barclay's Steam Boiler Furnace.



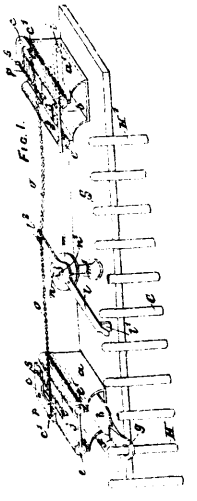
42020 Wiesenfeld's Bottle Sealing Plate.



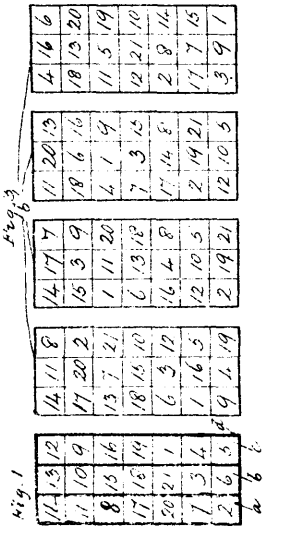
42021 Dinsmore's Apparatus for Making Gas.



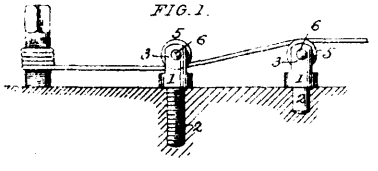
42022 Richards' Device for Partitioning Drawers.

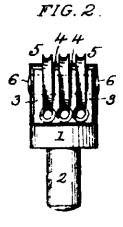


42023 Marks' Apparatus for Looking Railway Signals.

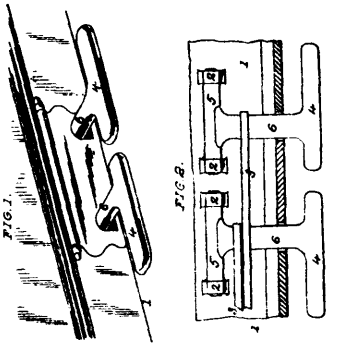


42024 Forster's Puzzle.

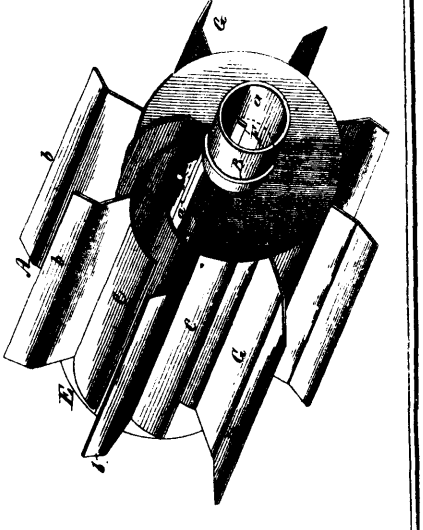




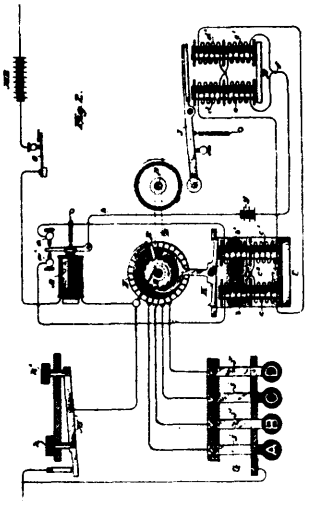
42025 Reed's Piano Agraffe.



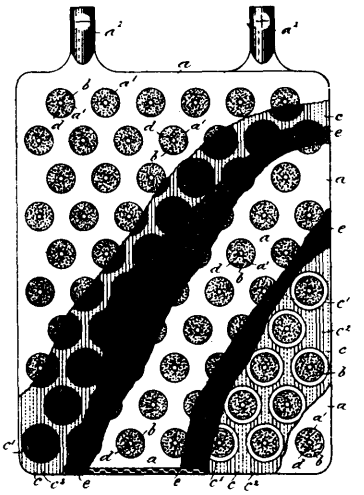
42026 Reed's Piano Pedal.



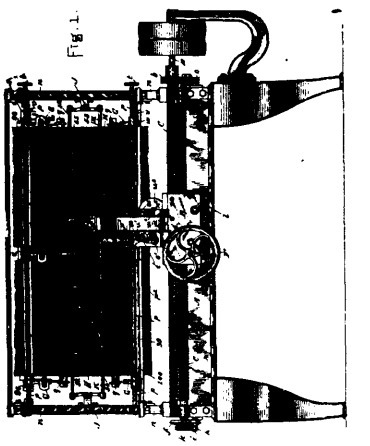
42027 Gardner's Current Wheel.



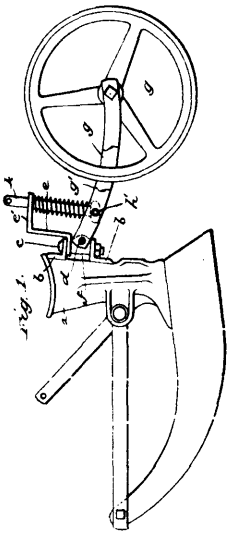
42028 Van Hoevenbergh's Printing Telegraph.



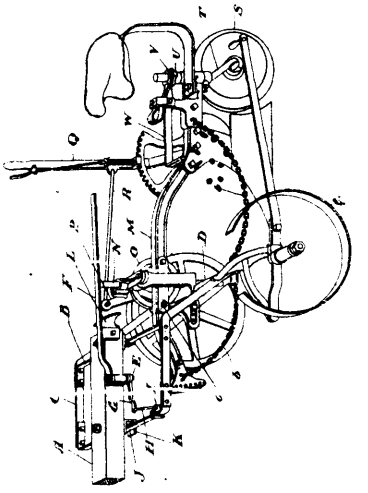
42029 Lloyd's Storage Battery.



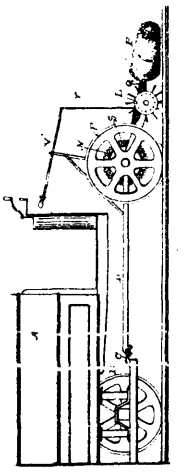
42030 Ingersoll's Machine for Drawing Warp Threads.



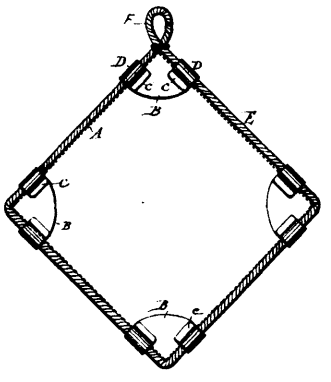
42031 McSherry's Grain Drill.



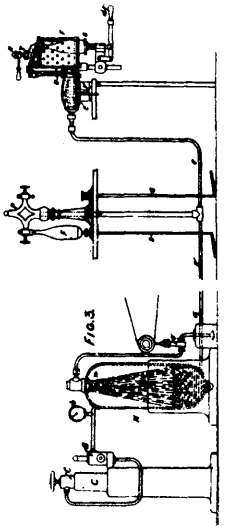
42032 Wedlake and Harding's Riding Plow.



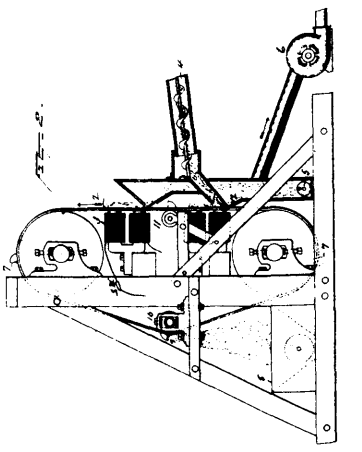
42033 Leigh and Wilson's Track Sweeper.



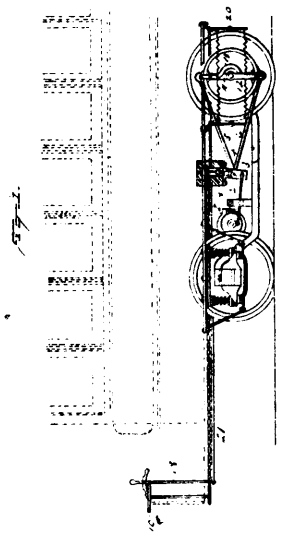
42034 Martyn's Frame for Mirrors, &c.



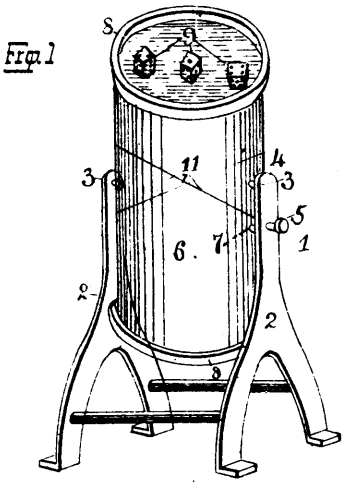
42035 Walter's Means for the Aeration, Bottling and Discharge of Beer, &c.



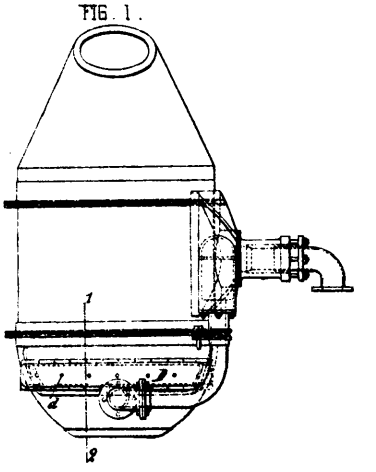
42036 Edison and Dickson's Magnetic Ore Separator.



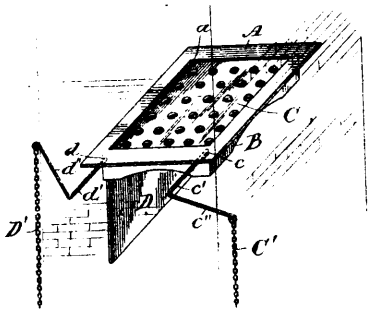
42037 Edison's Propelling Mechanism for Electric Vehicles.



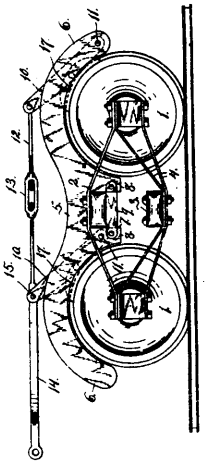
42038 Saxton's Game Apparatus.



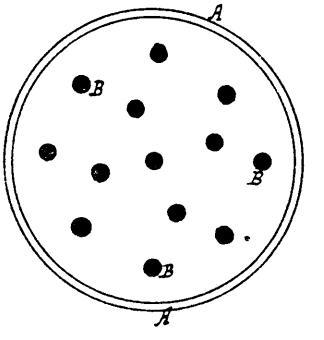
42039 Garnier's Apparatus for treating Nickel Matts.



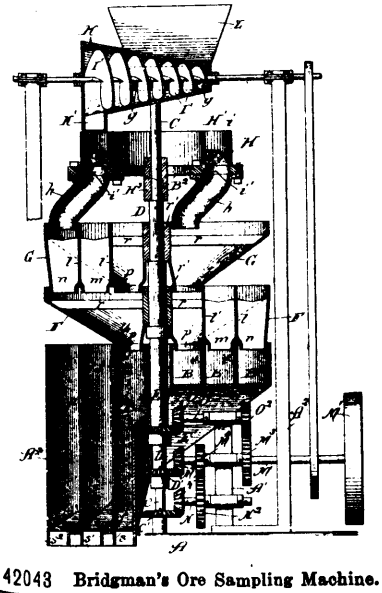
42040 Stead's Chimney Flue Check Valve.



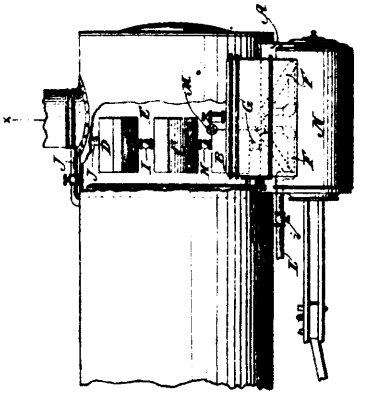
42041 McMullen's Car Brake.



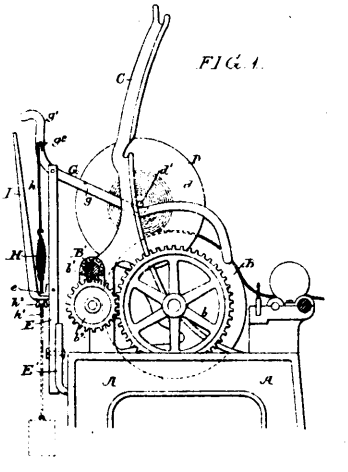
42042 Mealey's Stand for Tea Pots.



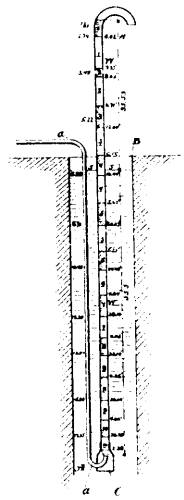
42043 Bridgman's Ore Sampling Machine.



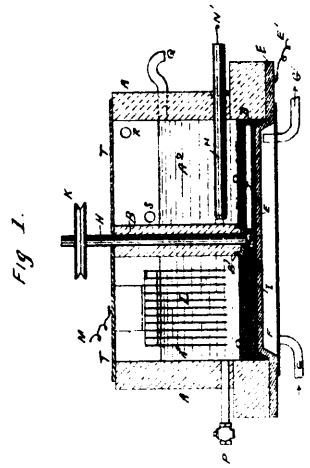
42044 McCallum's Feed Water Heater and Purifier.



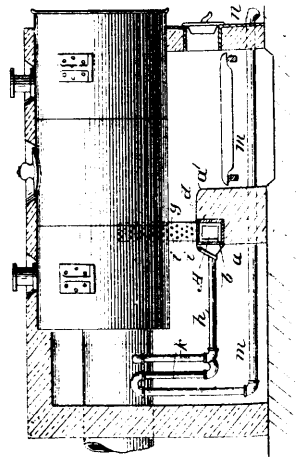
42046 Dill's Bobbin Support for Spinning Mules, &c.



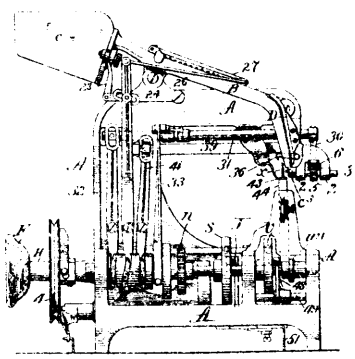
42047 **Pohle's Process of Elevating Liquids.**



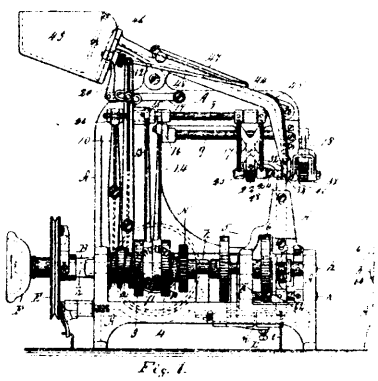
42048 **Castner's Apparatus for the Electrolytic Decomposition of Alkaline Salt.**



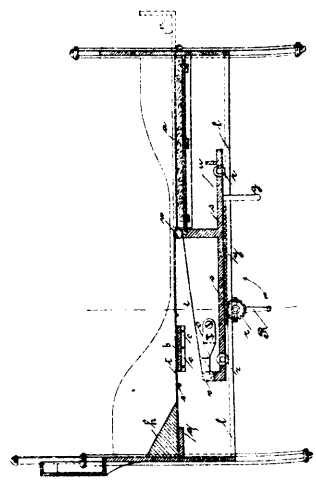
42050 **Geiger, McKenzie and Cross' Smoke Consuming Furnace.**



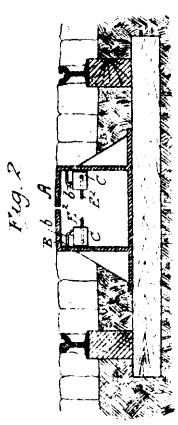
42051 **Bennett's Machine for Sewing Shank Buttons to Fabrics.**



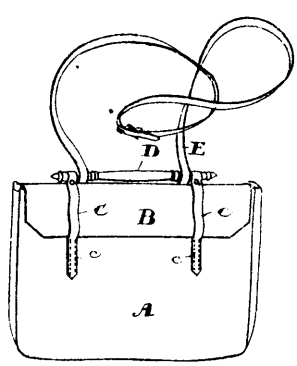
42052 **Bennett's Machine for Sewing Shank Buttons to Fabrics.**



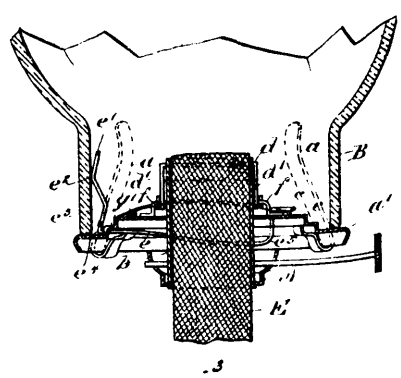
42053 **Eggert's Bed.**



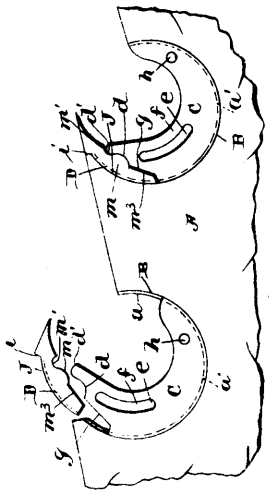
42054 **Wood's Electric Railway.**



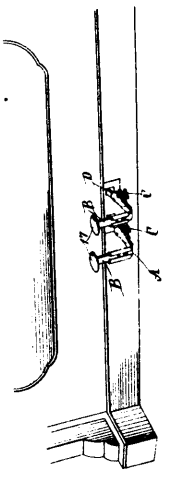
42055 **Edwards' School Bag.**



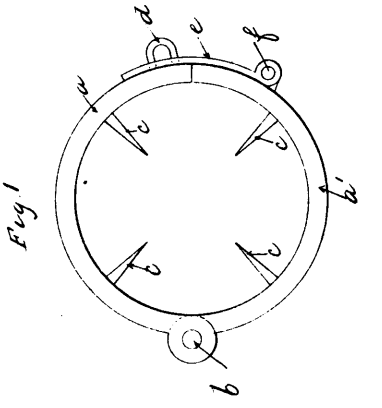
42056 **Goetze's Lamp Extinguisher.**



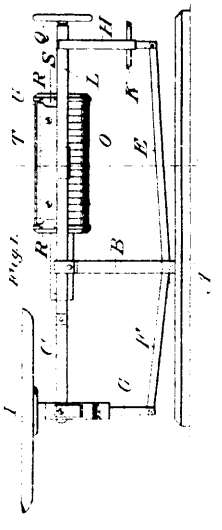
42057 Class' Circular Saw.



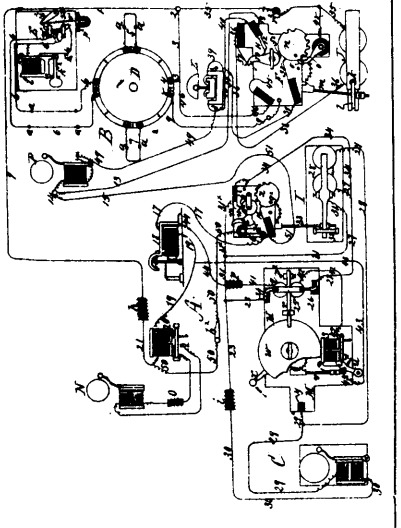
42058 Hobday's Pedal Attachment for Organs.



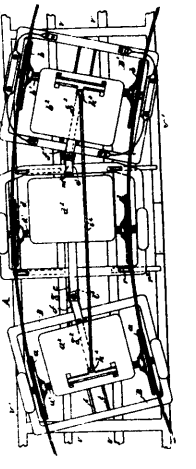
42059 Wild's Device for Closing Bags.



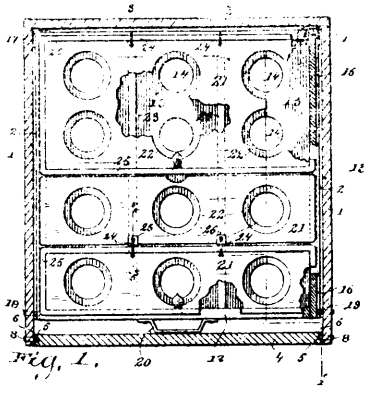
42060 Lundberg's Scales.



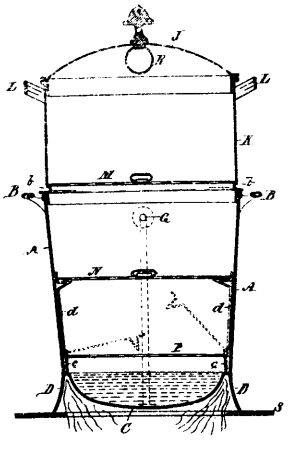
42061 Denio's Electric Signalling Apparatus.



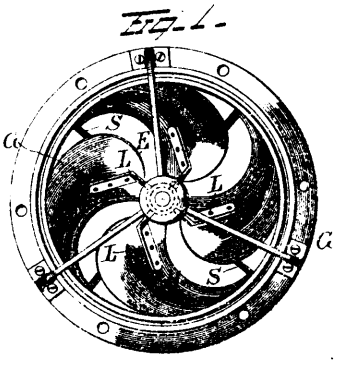
42062 Robinson's Electric Motor Car.



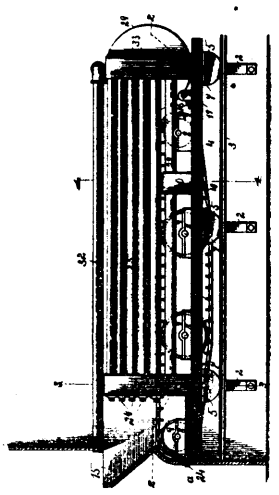
42064 Bischoff's Egg Case.



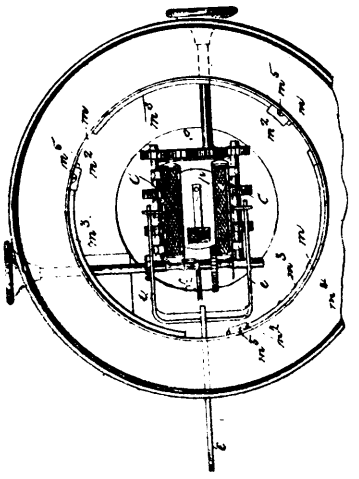
42065 Gill's Steam Cooker and Boiling Pot.



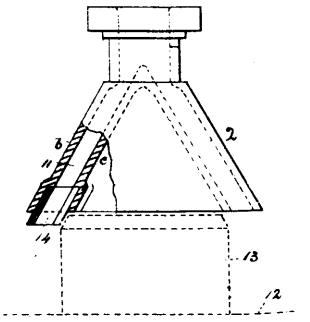
42066 Davidson's Ventilator.



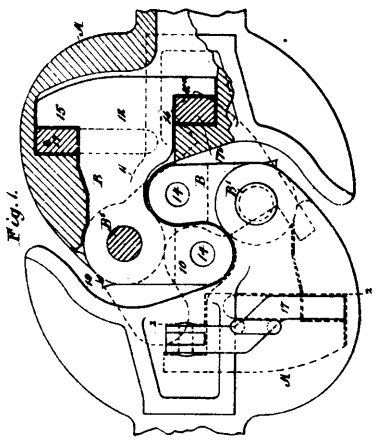
42067 Crowe's Grate for Steam Boiler Furnaces.



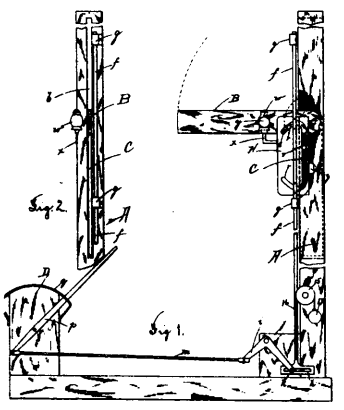
42068 Vine's Lamp.



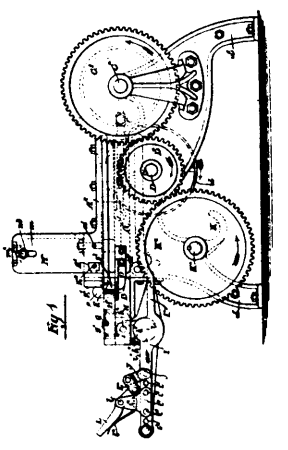
42069 Roberts' Rod Coiling Apparatus.



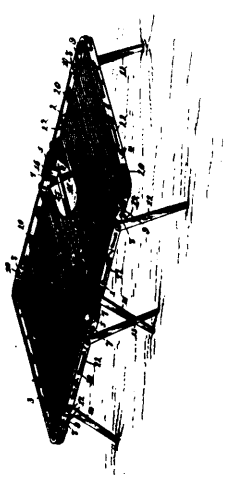
42070 Kirwan's Car Coupler.



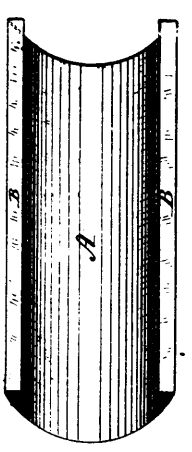
42071 Johnson's Semaphore Signal Device.



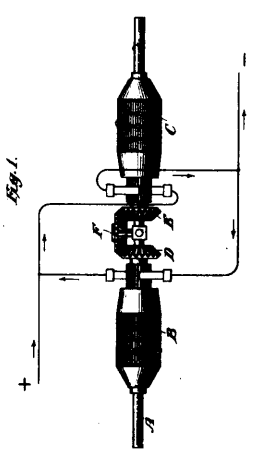
42072 Grant's Machine for making Beam Hangers.



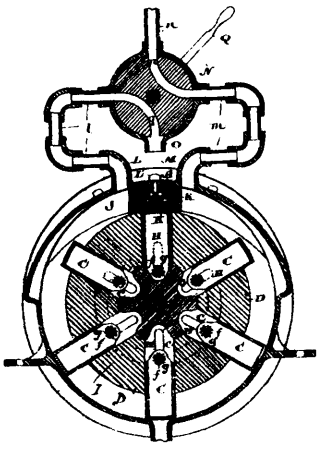
42073 Trenholme, Vaughan and Parker's Cot.



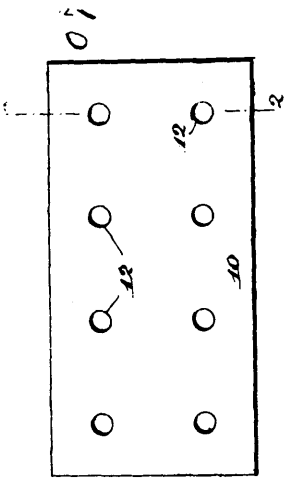
42074 Rose and Gage's Photographic Paper Coating Device.



42075 Edison's Electric Motor.

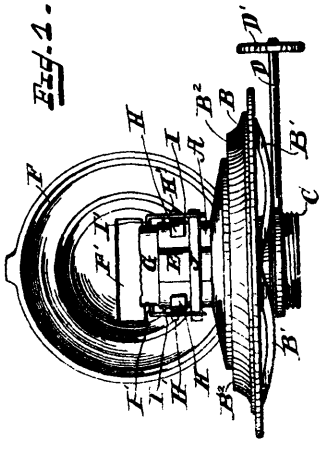


42076 Brintnell's Rotary Engine.

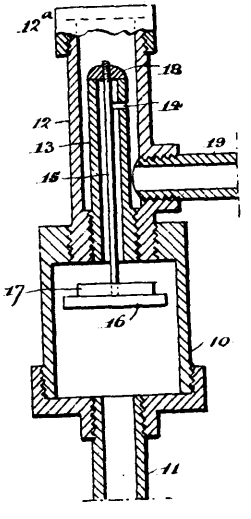


42077 Wight's Bench Floor for Hot Houses.

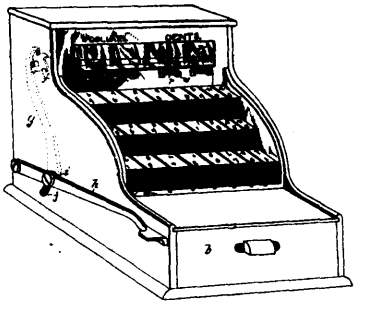
42078 Heyl's Electric Conductor.



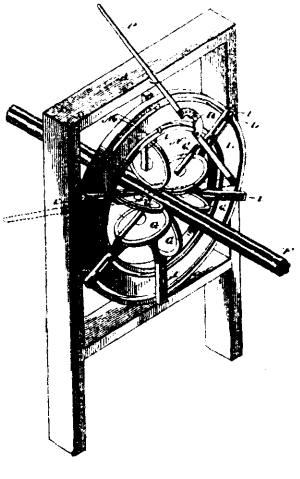
42079 Selden's Lamp Extinguisher.



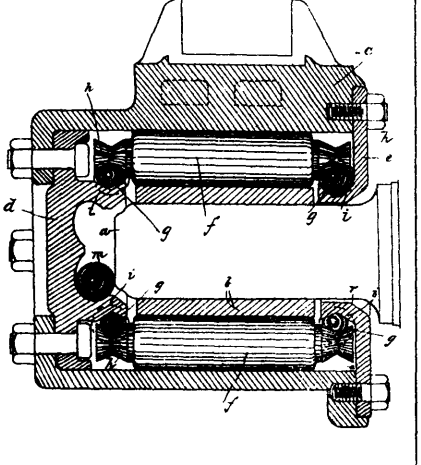
42080 Burt's Valve.



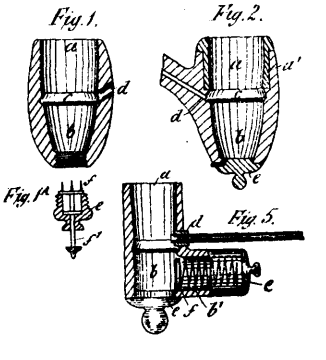
42081 Gilman's Check and Cash Register.



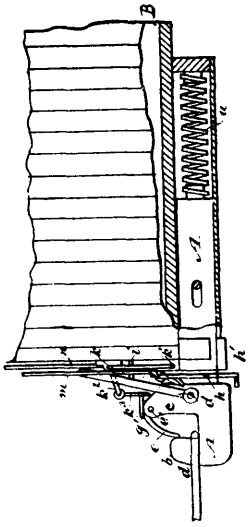
42082 Plecker's Method of making Corrugated Sheet Metal Pipes.



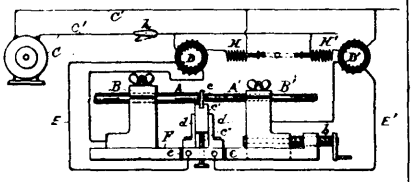
42083 Purdon, Waters and Woodcock's Roller and Ball Bearings.



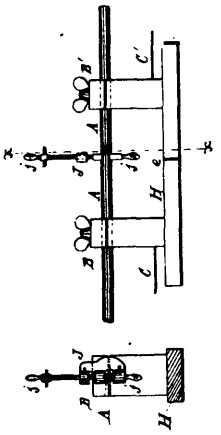
42384 Carr's Tobacco Pipe.



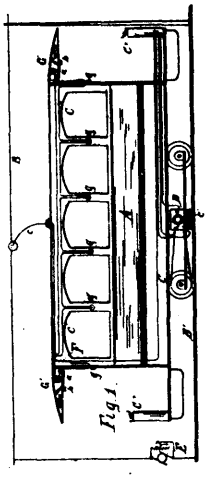
42085 Smith's Car Coupler.



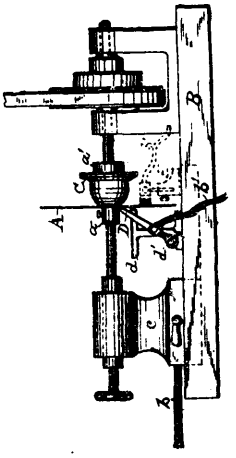
42086 Dewey's Method of Electric Welding.



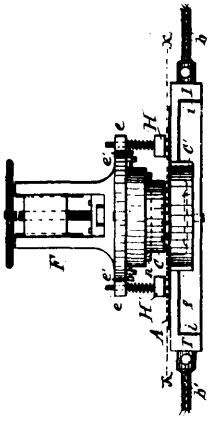
42087 Dewey's Method of Electric Welding.



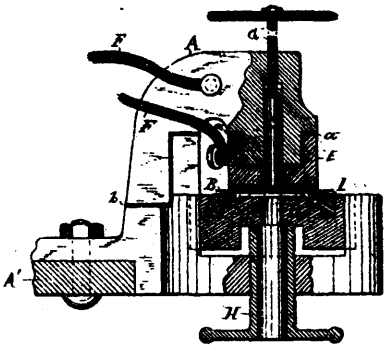
42088 Dewey's Electric Railway Car.



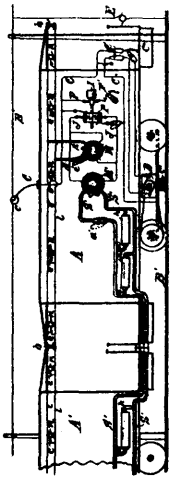
42089 Dewey's Method of utilising Electricity in the formation of Sheet Metal Articles.



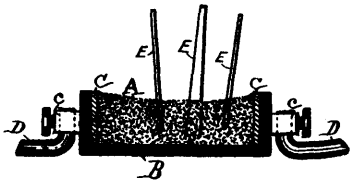
42090 Dewey's Apparatus for forming Sheet Metal Electrically.



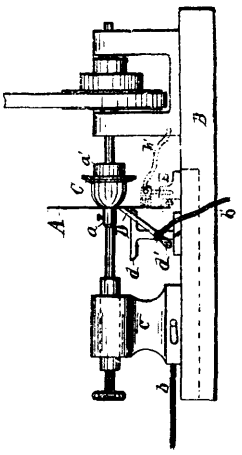
42091 Dewey's Method of utilising Electricity in the formation of Metallic Cartridge Cases.



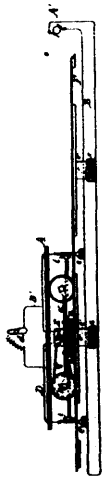
42092 Dewey's Electric Lighting and Heating Apparatus for Electric Railways.



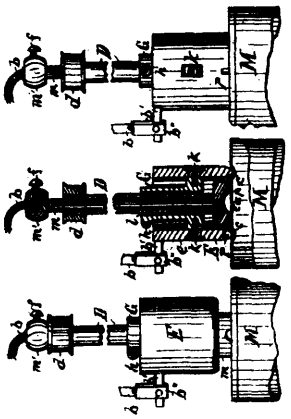
42093 Dewey's Method of Electrically Heating Bars, &c., for Welding.



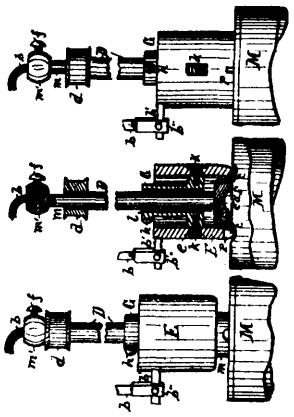
42094 Dewey's Apparatus for forming Sheet Metal Electrically.



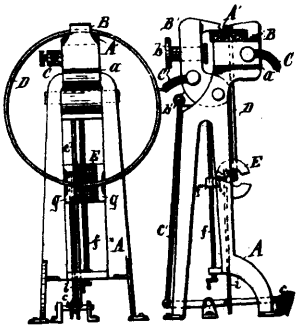
42095 Dewey's Electric Railway.



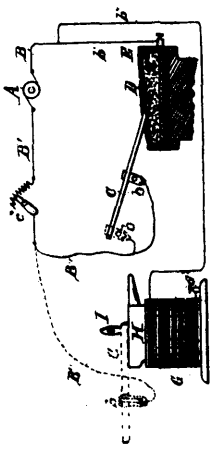
42096 Dewey's Method of Electric Soldering and Cementing Cans.



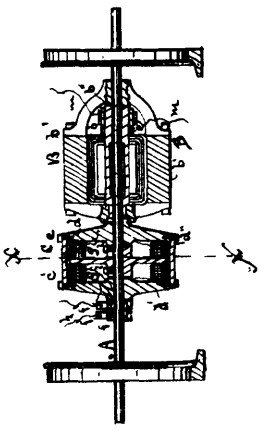
42097 Dewey's Apparatus for Soldering and Cementing Cans by Electricity.



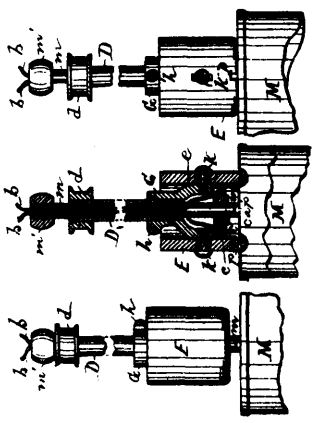
42098 Dewey's Electric Welding Apparatus.



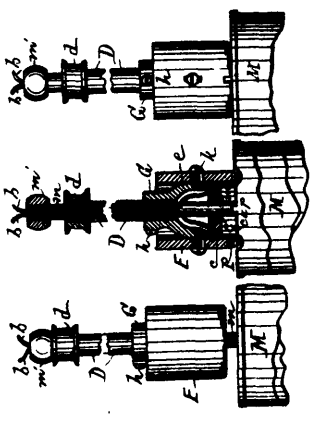
42099 Dewey's Method of Electric Welding and Metal Working.



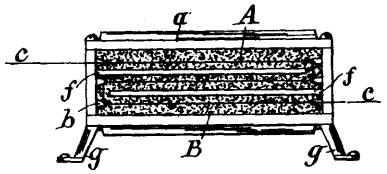
42100 Dewey's Electric Motion Transmitter.



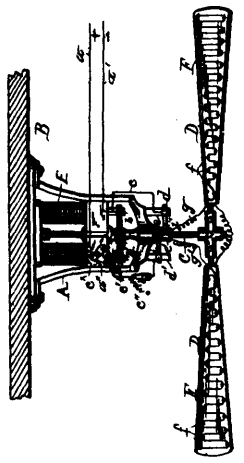
42101 Dewey's Method of Electric Soldering and Cementing Cans.



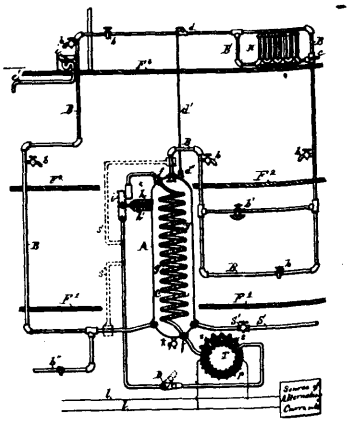
42102 Dewey's Apparatus for Soldering and Cementing Cans by Electricity.



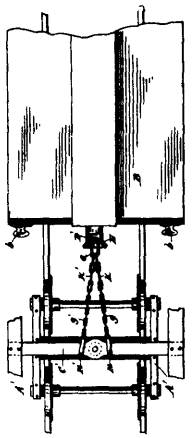
42103 Dewey's Electric Heating Apparatus.



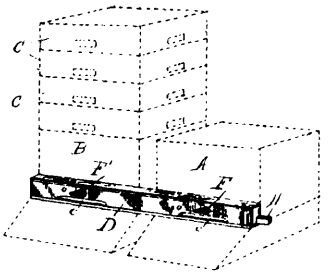
42104 Dewey's Electric Heating Apparatus.



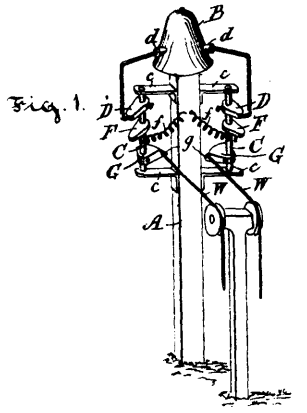
42105 Dewey's Electric Water Heater.



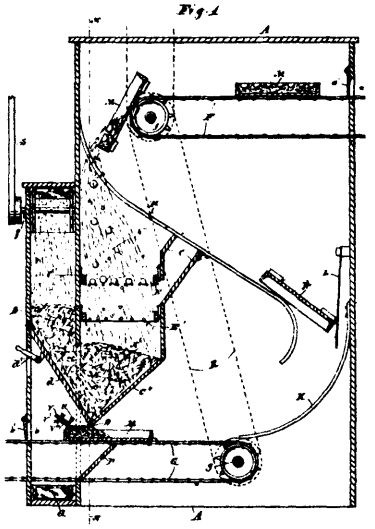
42106 Mullaney's Car Coupler.



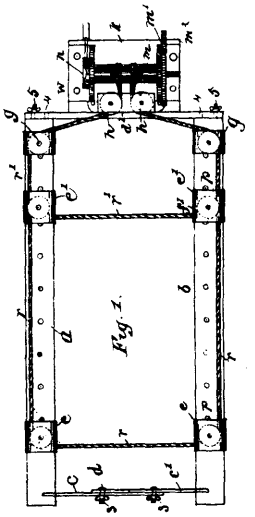
42107 Langdon's Device for preventing the Swarming of Bees.



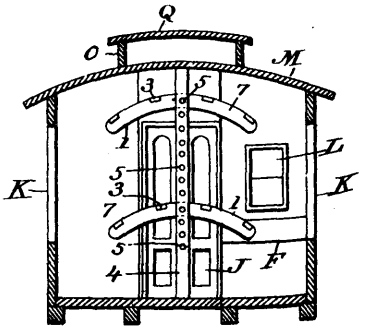
42108 Boyler's Signal for Railway Crossings.



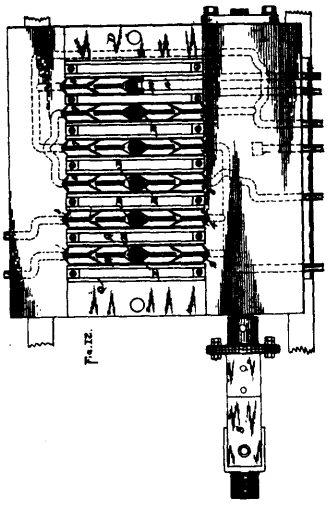
42109 Paris and Clacher's Confectioners' Machine.



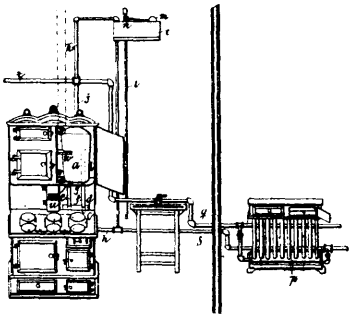
42110 Gilmore's Device for Lowering Caskets into Graves.



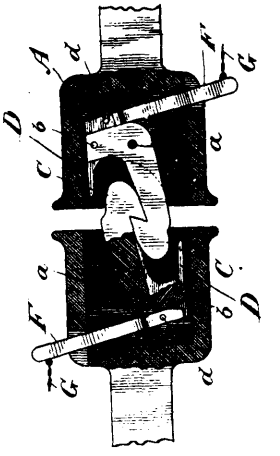
42111 Rosenfeld's Railway Car.



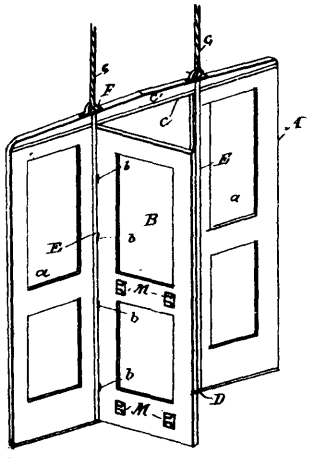
42112 **Knight and Potter's Apparatus for regulating electrically-driven Mechanism.**



42113 **Brewer's Hot Water Heating Apparatus for Cooking Ranges.**



42114 **Brush and Fayette's Car Coupler.**



42115 **Hayes' Sliding Partition.**