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### INVENTIONS PATENTED.

NOTE.—Patents are granted for 18 years. The term of years for which the fee has been paid, is given after the date of the patent.

**No. 42,116. Apparatus for Preparing Tickets, Cheques, Labels, etc. (Appareil pour préparer les billets, chèques, étiquettes, etc.)**

John Melton Black, Tabernacle Street, Finsbury, London, England, 1st March, 1893; 6 years.

*Claim.*—1st. In a rotary printing machine a pair of cylinders A<sup>1</sup>, provided with rings B, having raised surfaces for impressing and colouring the web which passes between them, inking rollers for applying the colouring matter to the said rings and the necessary actuating, feeding and cutting devices for the purpose set forth. 2nd. In a rotary printing machine the combination of devices for printing and colouring tickets or the like on a continuous web with cutting cylinders G<sup>1</sup> G<sup>2</sup>, arranged to cut the said web into longitudinal strips cross cutting cylinders H H<sup>1</sup>, arranged to cut the said tickets from the said strips and the necessary actuating mechanism, substantially as set forth. 3rd. In numbering heads designed for rotary numerical printing a series of star wheels, in combination with the ratchet wheels of the numbering heads to which they are respectively fixed, and a series of V shaped pawls arranged to engage corresponding depressions of the said star wheels, substantially as set forth.

**No. 42,117. Manufacture of Car Wheels.**

(Fabrication des roues de chars.)

Francis Daniel Taylor, Montreal, Quebec, Canada, 1st March, 1893; 6 years.

*Claim.*—1st. In a car wheel the combination of the outer peripheral portion, comprehending the tire, rim and flange and a central portion, formed of metal of a great degree of density, a fused annulus located in and extending transversely completely through such body section at the point of union between said outer and central portions and being adapted before fusing to temporarily unite such portions as herein set forth. 2nd. In a car wheel the combination of the outer peripheral portion, comprehending the tire, rim and flange and a portion of the body, formed of metal of a great degree of density, the tire section proper being chilled, a central portion comprehending the hub and the remaining portion of said body formed of metal of a less degree of density, and a fused annulus located in and extending transversely completely through such body section at the point of union between said outer and central portions and being adapted before fusing to temporarily unite such portions, as herein set forth. 3rd. In a car wheel the combination of the tire or rim formed of chilled

iron, a body of softer metal and a fused annulus separating and uniting both, as herein set forth. 4th. As a new article of manufacture, a car wheel having its outer peripheral portion, comprehending the tire, rim, flange and a portion of the body, formed of metal of a great degree of density, the tire section proper thereof being chilled and its inner central portion, comprehending the hub and the remaining portion of said body formed of metal of a less degree of density.

**No. 42,118. Sound Transmitter and Receiver.**

(Transmetteur et récepteur du son.)

Henry Rose, Pall Mall, London, England, 1st March, 1893; 6 years.

*Claim.*—1st. In apparatus for transmitting and receiving sound, a speaking tube clothed with material such as felt, that is a bad conductor of sound, substantially as herein described for the purpose specified. 2nd. In apparatus for transmitting and receiving sound, a speaking tube clothed with material such as felt that is a bad conductor of sound, in combination, with supports formed of material such as india rubber that will tend to reduce to a minimum the transference of vibration or shock to such pipe, substantially as herein described for the purpose specified. 3rd. In apparatus for transmitting and receiving sound, a speaking tube provided at one or at each end with a tube or pad of elastic or yielding material capable of surrounding the ear of the person receiving the sounds, and of adapting itself to the side of the head of such person, substantially as herein described for the purpose specified. 4th. In apparatus for transmitting and receiving sounds, a speaking tube clothed with material such as felt, that is a bad conductor of sound, and provided at one or at each end with an endless tube or pad of elastic or yielding material such as india rubber, substantially as herein described for the purpose specified. 5th. In apparatus for transmitting and receiving sound, a telephone receiver provided with an endless tube or pad of elastic or yielding material capable of adjusting itself to the side of the head of a person listening to the sounds produced electrically or mechanically therein and of excluding extraneous sounds, substantially as herein described.

**No. 42,119. Telegraphic Transmitter.**

(Transmetteur télégraphique.)

Charles Goodwin Burke, Brooklyn, New York, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In a cable transmitter, the combination, with a key, of an automatically actuated contact maker locked and released by said key, and provided with contact surfaces adjustable relatively to one another, whereby the duration of contact for a given movement may be varied, as set forth. 2nd. In a cable transmitter, the combination, with a locking and releasing key, of a wheel or carrier carrying contact plates of varying width, a motor for revolving said carrier when released by the key, and contact strips adapted to bear on the said plates, and adjustable with respect thereto, whereby the duration of contact for a given movement of the carrier may be varied, as described. 3rd. In a cable transmitter, the combination, with a locking and releasing key, of a frame or carrier provided with two series of contact plates of varying width, a motor for revolving said carrier when released by the key, and positive and negative contact terminals adapted to bear on the two series of plates, respectively, and independently adjustable with respect thereto, whereby the duration of contact for a given movement of the said carrier may be varied, as described. 4th. In a cable transmitter, the combination of a revoluble frame or carrier provided with two lines or series of contact plates of varying width, a source of power acting constantly on said carrier, a series of pins or stops constituting an

escapement on said carrier, contact strips adapted to bear on the series of contacts, respectively, and adjustable with respect thereto, whereby the width of contact surface presented to said strips may be varied, and a lever or key acting in conjunction with the escapement to lock or release the carrier, as set forth. 5th. The combination, with a cable or line of high static capacity and a transmitting battery, of a revoluble frame or carrier provided with two series or rows of contacts of varying width connected to a line and alternately disposed, two contact terminals from the positive and negative poles of the battery adapted to bear on the rows of contacts, respectively, and adjustable with respect thereto, whereby the width of contact surface presented to said strips may be varied, a motor for rotating the carrier, and a key for locking and releasing it, as herein set forth. 6th. The combination, with a submarine cable and a transmitting battery, of stationary and moving contacts adapted to connect the opposite poles of the battery alternately to line, means for adjusting the relative width or extent of the surfaces in contact and consequently the duration of contact for a given movement of the contacts, and a key or controlling device for locking and releasing the moving contacts according to the character of the signals to be transmitted. 7th. The combination of the revoluble carrier or wheel, the contact plates of varying width, the adjustable terminals bearing on the contacts, the two rows or series of escapement pins or stops, one row being insulated from the wheel and the contacts, and the locking and releasing lever adapted to be connected to earth and engaging with the teeth of each row alternately. 8th. In a circuit controlling device, a contact maker revolved by a source of power and having angular contacts, one of the sides of such angles being parallel to the axis of revolution, in combination with connecting contacts adjustable along the line of said angular contacts, as set forth. 9th. In a circuit controlling device, the combination of a movable circuit maker having contacts varying in superficial area, one side of such contacts being a right line, and two connecting contacts forming terminals of opposite poles of separate sources of electrical energy, said connecting contacts being independently adjustable along the line of the movable contacts, as described. 10th. The combination of a contact maker revolving at a uniform speed and carrying angular contact plates, forming one part of an electric circuit, of two connecting strips constituting the terminals of independent sources of electrical energy of opposite polarity and forming alternately the other part of said circuit and adapted to produce successive alternations of polarity occupying equal intervals of time and independently adjustable with respect to said revolving contacts, whereby the duration of their respective engagement may be varied.

#### No. 42,120. Paper Pulp Digester.

(*Pourrissoir de pâte à papier.*)

Charles Curtis, Newton, Massachusetts, and Nathaniel Morrison Jones, Bangor, Maine, both of U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. A pulp digester, comprising a metal shell, a lining of carbonized cement, and an intermediate lining between the cement and the shell, of material which is impervious to the acid solution, whereby the shell is protected in case of leakage through the cement lining, as set forth. 2nd. A pulp digester, comprising a metal shell, a lining of carbonized cement, and an intermediate lining between the cement and the shell, of an acid proof material or composition which is a non conductor of heat, as set forth. 3rd. A pulp digester, comprising a metal shell, a lining composed of sections of carbonized cement, having tongues and recesses at their edges, the recesses of each section being overlapped by tongues on the adjoining sections, and acid proof packings between said tongues, as set forth. 4th. A pulp digester, comprising a metal shell, and a cement lining, composed of an outer and an inner layer, both layers being made of sections formed to overlap at their edges, the joints of the inner layer alternating with those of the outer layer, as set forth. 5th. A pulp digester, comprising a metal shell, and a carbonized cement lining, composed of sections having tongues and recessed at their edges, the sections having their inner surfaces recessed to form packing receiving grooves or seats adapted to hold packings or joint protectors across the seams or joints formed by the sections, as set forth. 6th. A digester shell, having a lining of carbonized cement, as set forth. 7th. A digester shell, having a continuous seamless lining of carbonized cement, as set forth. 8th. The method hereinbefore described, of lining digester shells, the same consisting in applying to the internal surface of the shell, a seamless lining of cement in a plastic condition, then closing the shell practically air tight, and carbonizing said lining while the shell is thus closed, as set forth. 9th. In a digester, the combination with an outer shell of outwardly extended collars thereon, having flanges, inwardly extended cylinders in said collar, concentric with and of a smaller diameter than said collars, said cylinders provided with corrugations to engage the cement lining inserted in the annular space between said cylinders and collars, and flanges screw threaded in the inner ends of said cylinders, whereby a tight joint is made with the surrounding cement lining, as set forth. 10th. In a digester, an outer shell *a*, an inwardly extended collar *b*, having flanges *b*<sup>1</sup>, inwardly extended cylinder *c*, having flange *c*<sup>1</sup>, said flange *c*<sup>1</sup>, provided with openings and plugs *c*<sup>2</sup>, for the insertion of the cement lining between said cylinder and collar, corrugations *c*<sup>3</sup>, and flanged, whereby a tighter joint is made with inner lining or

blocks *c*, as set forth. 11th. In a digester, collar *f*, flanged cylinder *g*, having corrugations, flange *f*, and connection such as *i*, for a blow off valve, as set forth. 12th. In a digester, an inner lining composed of blocks or slabs of suitable material, said blocks or slabs having four sides, two adjacent sides thereof having a portion of the edges recessed on one surface, and the other two adjacent edges similarly recessed on the opposite side, thus forming on the four sides tongues and recesses, as set forth.

#### No. 42,121. Advertising Device. (*Mode de publicité.*)

Charles Eissner, Montreal, Quebec, Canada, 1st March, 1893; 6 years.

*Claim.*—1st. As an advertising device a balloon displaying advertisements and connected with the car of an elevator so as to have a corresponding movement with same, as set forth. 2nd. As an advertising device a balloon displaying advertisements, illuminated by incandescent electric lamps arranged within it, and connected with the car of an elevator so as to have a corresponding movement therewith as set forth. 3rd. As an advertising device the combination of the captive balloon D displaying advertisements, central rope *G*<sup>1</sup> in same suspended ring *G*; electric lamps *F* suitably guarded; feeding wires *F*<sup>1</sup> to said lamps; and an automatic take-up for said wires as set forth.

#### No. 42,122. Furnace for Boilers. (*Foyer de chaudières.*)

James S. Harkins, Minneapolis, Minnesota, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The combination in a furnace, of a fire pot having its walls formed hollow and connected to the outer air and provided with a series of openings leading from the hollow wall into the fire pot, a corrugated inner lining forming diving flues with similar corrugations on the inner wall of said fire pot, the grate bars 18 and the smoke flue 33, substantially as described and for the purpose specified. 2nd. The combination in a furnace, of a fire pot, an enclosing hollow wall, a series of openings from said hollow wall into said fire pot, openings leading into said hollow wall from the outer air, a steam pipe adapted to deliver a spray of steam in said fire pot and the draft openings 17, grate bars 18 and smoke flue 33, substantially as described. 3rd. The combination in a furnace, of the fire box 23 having the walls 25 and 26 on the sides formed "U" shaped, the walls 27 and 28 at the rear formed "U" shaped and of a less height than the side walls and said walls being closed at the top forming a hollow space between them, said hollow space being connected by suitable openings with the outer air and by a series of holes with the fire pot 23, the damper 50, and the smoke flue 33, substantially as described and for the purpose specified. 4th. The combination in a furnace, of the fire pot 23 having the side walls 25 and 26 and the rear wall 27 and 28 provided with the openings 39, a corrugated lining 30 forming with similar corrugations on the walls 25 and 27, diving flues, the grate bars 18, damper 50, and smoke flue 33, substantially as described. 5th. The combination in a furnace, of the fire pot 23, the walls 25, 26, 27 and 28 having the series of openings 39, and the openings 37, damper 50, steam pipe 40, diving flue 19, grate bars 18, ash box 4, draft openings 17, and smoke flue 33, combined and constructed substantially as described and for the purpose specified.

#### No. 42,123. Arc Lamp. (*Lampe à arc.*)

Max Adolf Naeck and Richard Wilhelm Ludwig Holsten, Leipzig, Saxony, 1st March, 1893; 6 years.

*Claim.*—1st. An electrical differential arc lamp having two movable guiding tubes B and D, for the carbon holders *a*, *b*, connected by chains or flexible material to a drum upon the axis of a rocking lever E, attracted at one end by an electro-magnet wound in the main circuit, and at the other end by an electro-magnet wound in a shunt circuit. 2nd. An electrical differential arc lamp having the arrangement of a feed magnet in the shunt circuit, and a vibrating contact piece thereon J, adjusted by the lever in spring *k*, and screw *c*, and carrying a pawl at its upper end, in combination with a bent contact piece L, to effect a certain positive feed of the carbons towards one another, when the main current is diverted in considerable quantity through the shunt circuit.

#### No. 42,124. Toilet Paper. (*L'papier de toilette.*)

Edgar Jerome, Norwalk, Connecticut, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. A roll of toilet paper, consisting of a web having transverse cuts from the margins inward, determining the units for use and leaving bonds whose margins substantially coincide with the lines of strain between the bonds under stress, and the point of application of the thumb and finger. 2nd. A web of toilet paper having a narrow bond between the sheets, and cuts from the margins toward the center at an inclination to the margins, said cuts leaving a re-entrant angle on one sheet, and a salient angle on the other, all substantially as described. 3rd. A roll of toilet paper formed of sheets connected by bonds, and having the contiguous ends of the sheets formed of reversed contour, substantially as and for the purpose set forth.

**No. 42,125. Power Transmitter.***(Transmetteur de la force.)*

Benjamin William Warwick, London, England, 1st March, 1893; 6 years.

*Claim.*—1st. In combination, the movable time stamp having hands, the operating mechanism therein, the motor clock and flexible shafting connected to the moving mechanism of the clock to be rotated thereby, said flexible shafting being connected with the mechanism in the stamp, substantially as described. 2nd. In combination, the movable time stamp having hands, a crown wheel F, a time motor mechanism and the flexible shafting comprising the two shafts A, A, the pinions on opposite sides of the crown wheel and connected with the main shafts, substantially as described. 3rd. In combination, the movable time stamp having hands, an operating mechanism therefor, the motor mechanism and the flexible shafting comprising the right and left sections of spirals arranged end to end and connected together, substantially as described. 4th. In a time stamp, an automatic motor mechanism, the reversed clock dial and the hands, the said motor mechanism operating the hands in the reverse direction to the movement of ordinary clock hands, substantially as described. 5th. The herein described device for imparting a step by step motion to a self neutralizing conductor or conductors, substantially as herein described. 6th. A contrivance in which right and left handed spirals R and S, are employed, joined in the alternate sections so as to form a single self neutralizing flexible conductor.

**No. 42,126. Electric Railway System.***(Système électrique de chemin de fer.)*

Milton Shoemaker, Sioux City, Iowa, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In an electric railway system, an underground metallic conduit, having its upper surface slotted and flush with the road surface and set upon a sub drain and containing the following, viz.: a conductor F, a tubular conductor rail E, insulators D, carrying said rail E, rails C, and C', for the trolley carriage, a shield B<sup>o</sup>, a trolley carriage consisting of grooved wheels journalled between plates J and L, the latter extended to form a slot bar L', carrying the circuit and propelling connection, and the former carrying the shaft J, having an arm i, on which is journalled the trolley H, running upon said conductor, substantially as set forth. 2nd. In an electric railway system, the combination of an open sub-drain A', and a super-imposed metallic conduit carried on cross ties A, and having its upper surface slotted and level with the road surface, said conduit enclosing a conductor F, supported on a tubular rail, a tubular rail E, carrying said conductor, insulators D, secured to the conduit and carrying said tube E, the upper end lower trolley carriage rails C and C', the deflecting shield B<sup>o</sup>, secured in the slot of the conduit, the trolley carriage consisting of grooved wheels K and K', running upon said rails and journalled between the plates J and L, which latter is contracted and extending to form a slot bar L', projecting through the slot b, in said conduit, said plate J, having journalled upon it over an insulating plate j, and by means of insulating bearings J', a shaft J, carrying an axle i, upon which is journalled the trolley wheel H, and said slot bar having at its upper end draft irons N, and in a groove provided therefor, the insulated conductor M, in contact with the shaft I, substantially as set forth. 3rd. In an electric railway system, a metallic tubular conductor carrier supported upon glass insulators placed at suitable distances apart, said tube secured on said insulators by means of wires passing around said tube and diagonally through passages in said insulators, and having its ends formed into heads, said conductor having clips with hooks, which engage suitable notches or grooves in said tube, and keep said conductor in place thereon, substantially as set forth. 4th. In an electric railway system, in combination, a tubular conductor rail, glass insulators set a suitable distance apart and having its top bedded to receive said tube and rigidly hold it by wires passing around said tube and through diagonal passages in said insulators, and said insulators being held in place by means of a bolt fitting in a recess in said insulator, a conductor placed upon said tube, and clips secured to said conductor and passing partly around said tube, and set forth. 5th. In an electric railway system, the combination of the angle bars B, insulators D', bedded at the top to receive a tube and provided with passages d', and recess d, bolt D', to secure said insulator to said angle bar, tube E, having notches or grooves c, the wire e', passing through said passages and around said tube, the conductor F, and the clips f, secured to said conductor and provided with heads f', substantially as set forth. 6th. In an electric railway system, a conductor rail consisting of a metallic tube extending longitudinally inside of an underground conduit, said tube being set in glass insulators, and means for rigidly holding it in place therein, a suitable conductor, and suitable means for holding it in place on said metal tube, said metal tube being provided with glass connections at all points of connection between it and a service pipe for forcing hot air into and through said metal tube, substantially as set forth.

**No. 42,127. Bell. (Cloche.)**

Edward Dayton Rockwell, Brissol, Connecticut, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The combination with a base plate and top plate secured thereto, of a segmental gear and lever and pinion between the base plate and the top plate, a revoluble striker bar operatively connected with said pinion by a gearing above the top plate, whereby compact bell mechanism is secured, substantially as set forth. 2nd. In a bell the combination with a striker, its pivot pin and supporting part, of the noiseless washers above and below the striker, and a noiseless bearing piece around the pivot pin, substantially as set forth. 3rd. The combination with a base plate, a revoluble striker bar, spring actuated in one direction, a lever operatively connected therewith and adapted to rotate the striker bar in opposition to the force of the spring, and a gong, substantially as set forth. 4th. In bell mechanism, the combination with a frame and gong, and lug upon the gong, of a centrally pivoted pinion loosely mounted on a central post on the frame and having an arm upon one side, strikers upon the arm, and mechanism for communicating motion to it through the pinion, substantially as set forth.

**No. 42,128. Nail Parer or Cutter. (Appareil pour rogner et couper les ongles.)**

James Terrell Lewis, Ivy Depot, Virginia, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The nail cutter having the cutting notch and one or more guards to fit behind the nail, the device operating as described. 2nd. The nail cutter consisting of the blade having a lateral projection forming an acute angle with the adjacent edge of the blade, the inner edge of the projection forming a cutting edge, and a guide lug arranged substantially as described. 3rd. A nail cutter consisting of the blade having the lateral pointed projections forming an acute angle with the adjacent edge of the blade, the adjacent edges of the blade and projection formed into cutting edges, the edge at the meeting of said edges rounded and formed into cutting edge, and the side lugs on the blade forming guards to fit behind the nail, substantially as described. 4th. A nail cutter consisting of the blade having a pointed end, and a lateral pointed projection extending toward the opposite end, the cutting edges and the cylindrical lugs beveled as set forth on the sides of the blade and rounded at their outer ends, and a file substantially as described.

**No. 42,129. Register or Recorder for Ticket.***(Régistre ou indicateur de billets.)*

John Sharpe, Toronto, Ontario, Canada, 1st March, 1893; 6 years.

*Claim.*—1st. The combination with the hour hand spindle connected by gearing to the sleeve on which is secured the hour hand, of the hour registering wheel having the hours embossed on it as described and connected by a helical spring to the sleeve on the main arbor, and having a series of pins projecting from its rear face, which are intermittently caused to engage with the teeth of the ratchet wheel secured on the hour hand spindle as it rotates, as and for the purpose specified. 2nd. The combination with the minute hand spindle, of the minute registering wheel having the minutes embossed on it as described and connected by a helical spring to the main arbor, and having a series of pins projecting from its rear face, which are intermittently caused to engage with the teeth of the ratchet wheel secured on the minute hand spindle as it rotates, as and for the purpose specified. 3rd. The combination with the hour hand wheel connected by a helical spring to the sleeve on the main arbor, and intermittently caused to rotate as specified, of means whereby the spring is wound and intermittently held in position as the spring is unwound by the rotation of the wheel, as and for the purpose specified. 4th. The combination with the hour hand spindle connected by a helical spring to the sleeve on the main arbor and intermittently caused to rotate as specified, of the gearing and winding spindle by which the helical spring is wound and the ratchet wheel secured on the sleeve of the winding gear wheel and spring dog for engaging said ratchet wheel, as and for the purpose specified. 5th. The combination with the minute hand wheel connected by a helical spring to the main arbor and intermittently caused to rotate as specified, of means whereby the spring is wound and intermittently held in position as the spring is unwound by the rotation of the wheel, as and for the purpose specified. 6th. The combination with the minute hand wheel connected by a helical spring to the main arbor and intermittently caused to rotate as specified, of the arbor having a square outer end and a ratchet wheel secured on its inner end which ratchet wheel is engaged by a spring dog, as and for the purpose specified. 7th. A month registering rim supported in a ring P, attached to the face of the casing and having embossed on its periphery the months of the year at equal distances apart and in combination with the spring finger M', having the end m', designed to project into one of the holes m, as and for the purpose specified. 8th. A day registering rim, supported in a ring P, attached to the face of the casing and having embossed on its periphery the days of the month in numerical order at equal distances apart and having holes n, located at equal distances apart on its periphery in combination with the spring fingers H', having the end n', designed to project into one of the holes n, as and for the purpose specified. 9th. The block 16, pro-

vided with a knob 18, and supported in the slot 17, and having embossed on its bottom end a cross, in combination with the supplemental block 19, designed to fill the remainder of the slot 17, as and for the purpose specified. 10th. The block 16, provided with a knob 18, and supported in the slot 17, and having embossed on its bottom end a cross, in combination with the supplemental block 19, provided with an outside flange 20, and spindle 21, having a cross bar 22 at its inner end arranged, as and for the purpose specified. 11th. The hour and minute registering wheels K and L, having embossed on them the hours and minutes at equal distances apart, and intermittently rotated and held in position as specified, in combination with the platen 4, and means whereby it is brought against the embossed numbers on the wheels, as and for the purpose specified. 12th. The hour and minute registering wheels K and L, having embossed on them the hours and minutes at equal distances apart, and intermittently rotated and held in position as specified, in combination with the platen 4, push rod 6, having a push button 8, pivotally connected by the link 11, to the rod 12, forming part of the platen 4, and by the links 9, to the brackets 10, on the bottom plate of the machine, as and for the purpose specified. 13th. The combination with the minute and hour hand, registering wheels caused to rotate intermittently as specified, and having embossed on their peripheries the minutes and hours as specified, and the month and day registering rims having embossed on their peripheries the months and days and held in position as specified, of the slot Z, and platen 4, designed to be brought against the characters on the registering wheels, as and for the purpose specified. 14th. The combination with the minute and hour hand registering wheels caused to rotate intermittently as specified, and having embossed on their peripheries the minutes and hours as specified, and the month and day registering rims having embossed on their peripheries the months and days and held in position as specified, of the slot Z, and platen 4, operated as specified, and ink ribbon 13, situated between the platen and the registering wheels and rims, as and for the purpose specified. 15th. The combination with the minute and hour hand registering wheels caused to rotate intermittently as specified, and having embossed on their peripheries the minutes and hours as specified, and the month and day registering rims having embossed on their peripheries the months and days and held in position as specified, of the inking ribbon 13, designed to be wound and unwound upon the spindle 14, by the turning knobs 14', and held in position by the guiding rods 15, as and for the purpose specified. 16th. The combination with the minute and hour hand registering wheels caused to rotate intermittently as specified, and having embossed on their peripheries the minutes and hours as specified, the month and day registering rims having embossed on their peripheries the months and days and held in position as specified, and the block 16, having an embossed bottom side, of the slot Z, and platen 4, operated as and for the purpose specified. 17th. The combination with the push rod 6, held in the links 9, pivoted in the brackets 10, and the spindle 10', having the arm 32 secured on it, which is designed to engage with the teeth of the registering disc 23, which is held in position by the dog 29, as and for the purpose specified. 18th. The combination with the push rod 6, held in the links 9, pivoted in the brackets 10, and the spindle 10', having the arm 32 secured on it, and the spiral spring wound upon the spindle and designed to press the arm downwardly, of the registering disc 23, which is turned by the upward movement of the arm 32, and held in position by the spring dog 29, as and for the purpose specified. 19th. The combination with the push rod 6, and arm 32, attached to the spindle 10', of the registering disc 23, which is turned by the upward movement of the arm 32, and which is connected and imparts movement to the discs 24 and 25, as and for the purpose specified.

#### No. 42,130. Gear Cutter.

(*Mécanisme pour tailler les engrenages.*)

Charles Henry Trask, Lynn, Massachusetts, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. As an improved article of manufacture a gear having at the end of each tooth, pocket or recess a seating rib or bead, as and for the purposes described. 2nd. A gear cutter for forming ribs or beads in the pockets or recesses of a gear having the bead or seat forming recess in each of its cutting teeth, as and for the purposes described.

#### No. 42,131. Lightning Arrester. (*Paratonnerre.*)

William Richard Garton and John C. Daniels, both of Keokuk, Iowa, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In a lightning arrester for electric lines, a combination of a pair of serrated plates arranged parallel with each other, but electrically insulated from each other, a solenoid arranged above the upper plate, and armature inserted in the solenoid and connected with one terminal of the solenoid, a carbon rod carried by the armature and arranged to connect with the upper plate and the ground and line connections, substantially as specified. 2nd. In a lightning arrester for electric lines, the combination of the serrated plates B, C, the air tight chamber H, the solenoid D, armature E, provided with the guide rod F, the carbon rod G, carried by the armature, and the electrical connections, substantially as specified. 3rd. In a lightning arrester an air-tight chamber enclosing the discharging points or surfaces, substantially as specified.

#### No. 52,132. System of Electrical Distribution.

(*Système de distribution électrique.*)

Elihu Thomson, of Swampscott, Massachusetts, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The herein described method of regulating a continuous current transformer, consisting in subjecting a separate armature conductor in circuit with a main winding of the transformer to the action of an auxiliary magnetic field acting only on said separate conductor and varying the strength of said auxiliary field. 2nd. The herein described method of regulating a continuous current transformer, consisting in acting upon both armature conductors by a substantially constant field or fields, and varying the action of a separate field, acting only upon a separate armature conductor or section of conductor in circuit with one of the main conductors. 3rd. The herein described method of compounding or regulating a transformer for changes of load, consisting in changing the relative intensities of the magnetic field acting upon the main windings of the transformer, and a field acting upon an extension of the winding of either or both of them, thereby producing an effect equivalent to changing the relative lengths of the windings. 4th. The herein described method of regulating a transformer so as to deliver constant potential at the work, consisting in subjecting a coil or conductor in circuit with one of the transformer windings, but outside of the magnetic field or fields therefor, to the action of an added or auxiliary field and regulating the action of such field. 5th. The herein described method of producing a change in the relative effectiveness of two circuits or coils inductively related in a transformer, and connected, respectively, to main and local wires, consisting in varying the relative strengths of a magnetic field or fields acting upon both coils, and a magnetic field or fields acting upon a coil or coils in circuit with or forming an extension of the circuit of either or both of the first named coils. 6th. In a transformer, the combination, with two armatures or sections of armatures A, A', of two armature windings, one wound upon the section A only, the other wound upon both sections A, A', and a variable field magnet acting on the section A'. 7th. The combination, substantially as described, of two mechanically connected armature cores or sections of cores, a field magnet for each, an armature circuit including wires or conductors upon both cores, a collector therefor, a second armature circuit including wires or conductors upon one of said cores or carriers, a collector therefor, and a magnetizing or demagnetizing coil carrying varying currents and applied to the field magnet which acts upon one of the two armature circuits only. 8th. The combination, substantially as described, of two armatures revolving together, one having two armature windings inductively related, the other having an armature winding connected into circuit with a winding on the first, and a variable field magnet on the armature having the one winding. 9th. In a transformer, the combination, substantially as described, of main and local armature circuits, a field magnet common to both and maintained by a shunt circuit current, an armature conductor forming an extension of one of said armature circuits, and an auxiliary field magnet coil in a direct circuit and acting only upon said extension. 10th. The combination, in a transformer, of armature circuits connected, respectively, to the main and local circuits, and both in a substantially constant magnetic field, an extension of one of such armature circuits, a variable field magnet pole acting only upon said extension during revolution of the machine, and a field magnet coil for the latter field magnet placed in one of said armature circuits. 11th. In a transformer, the combination, substantially as described, of means for producing a constant or substantially constant field, and two transformer circuits one wholly and the other partially located in said field, as and for the purpose described. 12th. In a transformer, the combination, with the main field pole piece and armature or armatures, of an auxiliary or added section of armature core or carrier bearing a portion of the circuit which includes a conductor in the field of induction for both circuits of the transformer, and a separate field magnet pole piece for such added section. 13th. In a transformer, the combination, with the main field magnet and armature, of an auxiliary or added section of armature core or carrier carrying a part of one transformer circuit, a field magnet pole piece for such added section, and a coil for such added field magnets carrying current varying with the load. 14th. The combination, substantially as described, of a conductor wound upon both of two armature cores or sections of core, a collector therefor, a collector therefor, and means for revolving both cores together, a field magnet acting upon both conductors, and a separate field magnet acting upon one of them. 15th. The combination, with two revolving armature conductors mounted upon connected revolving carriers or supports and connected to separate circuits, of a field magnet acting on a portion of one of said conductors, and a field magnet producing a field in which both of said conductors revolve. 16th. The combination of two sets of armature conductors connected to separate circuits, a field magnet of comparatively constant effect in whose field both of said sets of conductors revolve, an added conductor or extension of conductor connected to one of the first to assist or oppose the electro-motive force of the same, and a separate variable field magnet acting during revolution of the machine only upon such added conductor, as and for the purpose described. 17th. The combination of two armature circuits and corresponding collec-

tors connected to revolve together and two field magnets, one of comparatively constant strength producing a field acting upon both armature circuits and the other of variable strength producing a field which acts upon a conductor electrically united with a conductor subject to the action of the first field. 18th. The combination of two sets of armature conductors and inductively related in the machine, a field magnet having an exciting coil carrying a constant current and furnishing a field for both said conductors, and a variable field magnet for a conductor electrically connected to the circuit of one of the first named conductors, said latter magnet having two exciting coils acting differently upon it. 19th. The combination, in a transformer having two sets of armature conductors wound on the same core or carrier, of an added or auxiliary armature core or carrier or section of core or carrier having armature conductors forming a part of a circuit of one of the first named sets of conductors, a nearly constant field magnet for the first-named core or carrier, and a field magnet for the second or added core or carrier having two coils, one carrying constant current and the other current varying with the work. 20th. In a continuous current transformer, the combination substantially as described, of means for producing a field of induction, two armature circuits or conductors adapted to revolve therein, an auxiliary field magnet, and an extension of one of said conductors in the field of the latter, as and for the purpose described. 21st. As a means for delivering constant potential at the work, the combination, with main and local transformer windings, of means for subjecting the same to the action of magnetism derived from any suitable source, an accessory winding in circuit with one of the former, and means for producing a magnetic field for said accessory winding, variable with the potential of the local, as and for the purpose described. 22nd. The herein described method of regulating or compounding a transformer, consisting in subjecting the transformer windings and an accessory winding or conductor in circuit with either or both of them to the action of independent magnetic fields and varying the relative strengths of said fields. 23rd. The herein described method of varying the relative potential or effective length of the two windings in the same magnetic field of a transformer, consisting in varying an auxiliary or exterior magnetic field variable independently of the main field for the transformer, but inductively related to said transformer, as and for the purpose described.

**No. 42,133. Electrical Governor.**  
(*Gouverneur électrique.*)

Mark Anthony Replogle, Cedar Falls, Iowa, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In an electrical governor, the combination, with means substantially as described, for establishing and breaking an electric circuit according to certain rates of speed, of a pair of electromagnets separately communicating with such means at high and low speed respectively, a pair of armature levers pivoted to an arm continuously oscillating between said magnets, a pair of pawls having depending counter weights, substantially as described, pivoted to said arm above the levers, lugs or studs on the levers to hold the points of the pawls up, and oppositely arranged ratchet wheels secured to a shaft adapted to control the power supply of the motor. 2nd. In an electrical governor, the combination, with a continuously oscillating arm, of a pair of pawls adapted to engage with ratchet wheels, oppositely arranged ratchet wheels secured to the motor controlling shaft, said pawls having depending counter weights as described, a pair of armature levers adapted to hold said pawls normally out of contact with the ratchets by gravity, and a pair of electro magnets provided with enclosing cups, substantially as described, and alternately charged with magnetism when the speed is higher or lower than normal respectively. 3rd. In an electrical governor, the combination with the arm K, and electro magnets N, N', of the armature levers L, L', having enlarged portions L<sup>1</sup>, L<sup>1</sup>, and lateral studs or lugs l, l, pawls M, M, having depending counter weights M<sup>1</sup>, M<sup>1</sup>, and stops K<sup>1</sup>, whereby the parts are held in normal position. 4th. In an electrical governor, the combination with a suitable standard electrically connected with an electrical supply circuit, of a revoluble tubular vessels to contain mercury, having a vertical central tube and one or more vertical outer tubes with which the central one communicates, an electrical connection with the mercury in the central tube at a speed lower than normal, and an electrical connection with the mercury in the outer tube or tubes at a speed above normal, said connections being separate and independent, and insulated from the standard, substantially as and for the purpose set forth. 5th. In an electrical governor, the combination of an electrically connected standard, a tripod mercury retaining vessel revoluble in a horizontal plane therein, an insulated electrical connection with the mercury in the middle tube at lower speed than normal, an independent electrical connection with the mercury in the outer tube only at speed above normal, insulated collectors separately connecting with said media at the outer extremities, and separate electrical connections with said collectors, substantially as described.

**No. 42,134. Advertising Match Box.**  
(*Boite à allumettes avec annonces.*)

John Joseph Harrison, London, England, 1st March, 1893; 6 years.  
*Claim.*—1st. An advertising or exhibiting device consisting of a hollow cone or drum revolving on a vertical axis having inside

thereof, a receptacle for the matches, and on its surface, equidistant round the same, a series of advertisements, photographs or the like, and an outside casing having two or more perforations equally spaced round its circumference corresponding in size to the advertisements or photographs, with mechanism for revolving one of the two drums relatively to the other intermittently to an extent equal to the exact angular distance apart of the centres of two contiguous photographs or advertisements. 2nd. The combination in an advertising device of a receptacle capable of containing matches or other like goods, an advertising drum revolving on a vertical axis and actuated by the opening and shutting of the lid of said receptacle, with a shielding device allowing only a certain number of the advertisements or photographs to be seen at a time while shielding from view those alternating with these. 3rd. The combined advertising device and devices for the use of smokers, formed on a drum revolving on a vertical axis and carrying a bell alarm, a match box and a cigar end cutter, the whole revolving freely on a vertical axis on the stand, whereby any of the three articles can be at once brought immediately opposite any point of the circle. 4th. The combination of an advertising or exhibiting drum having a series of stops corresponding in number and position to the advertisements or exhibits, a receptacle for carrying matches inside the drum and a pawl device on this lid engaging into the stops in such manner that the opening and closing of the lid shall cause the said stops to move forward a distance equal to the angular distance between the centres of two stops at each opening and closing of the lid. 5th. The combination with a supporting stand of a revolving advertising drum, a match receptacle provided with a hinged lid mechanism attached to said lid to revolve the drum when said lid is raised and lowered, and a cigar cutter and a bell carried by said drum, as set forth. 6th. The combination of the lid B, levers C, D and E, and smaller levers F and G, with the stops H, on a revolving drum, substantially as and for the purposes described. 7th. In combination with a match receptacle A, and its lid B, a cigar cutting device consisting of a box N, having a whole for the end of the cigar *n*, a lid hinged at V, a knife T, and a spring S, the whole arranged substantially as and for the purposes described.

**No. 42,135. Electric Arc Lamp.** (*Lampe électrique à arc.*)

William Hopkin Akester, Fullam, Middlesex, England, 1st March, 1893; 6 years.

*Claim.*—1st. In an electric arc lamp, the combination of two carriers for the upper and lower carbons, connected through suitable rods or the like, by means of a flexible connection, a sprocket wheel or pulley loosely mounted upon its shaft over which the flexible connection passes, a spring for normally holding the sprocket wheel shaft in a given position, a collar upon the shaft located upon one side of the sprocket wheel, a screw thread upon the other end of the shaft, a nut loosely engaging the screw thread, a solenoid, an arm or projection from the nut, and a link connecting the core of the solenoid with such arm, substantially as herein shown and described and for the purpose stated. 2nd. In an electric arc lamp, a regulating device consisting of a shaft, a wheel mounted loosely thereon, a spring or the like for normally retaining the shaft in a given position, a screw thread upon the shaft, a nut loosely engaging the screw thread and adapted to engage the wheel, means for causing the carbons to rise and fall by the rotation of the wheel, a solenoid and suitable connections from the core of the solenoid to the nut for causing the same to partially revolve with the rise or fall thereof, substantially as herein shown and described, and for the purpose stated.

**No. 42,136. Signal Telegraphy.** (*Signal télégraphique.*)

Claudius Victor Boughton, Buffalo, New York, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. A signal telegraph, consisting of a number of electric lights arranged in a continuous line, a number of spring press keys arranged upon a board and representing the letters of the alphabet, each key opening closing a circuit which included the necessary lights to form the dashes and dots of the Morse system, called for by the letter upon the key in operation all arranged and operating, substantially as and for the purpose stated. 2nd. The herein described signal telegraph, consisting of the key board 5, spring pressed keys 10, movable index plate 8, one or more spring pressed pins 12, secured to each key for connecting the positive wire 3, leading from the battery 2, with one or more rigid pins to which return wires are secured, and after passing through certain combinations of electric lamps are combined into a single return current leading to the battery from which the positive wire is fed, all arranged and operating, substantially as shown and described.

**No. 42,137. Brick Machine.** (*Machine à brique.*)

Thomas T. Wood, St. Joseph, Michigan, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In a brick machine, the combination, with the revoluble table, of a wheel having an inclined plane and a curvilinear arm, a suitable means for revolving said wheel, and suitable mechanism intermediate the revolving wheel, and the table adapted to revolve said table, substantially as specified. 2nd. In a brick machine, the combination with the revoluble table, and a horizontal gear wheel connected thereto, of the longitudinal movable rack bar engaging

the teeth of said gear, the vertical rock shaft, the lateral branch fixedly connected to said shaft and carrying a friction roller, a link connecting the lateral branch of the rock shaft and the rack bar, and a suitable means for automatically engaging the friction wheel and moving the lateral branch of the rock shaft, substantially as and for the purpose set forth. 3rd. In a brick machine, the combination, with the revoluble table, a horizontal cog gear connected thereto, a movable rack bar engaging said cog gear, a lateral swinging branch carrying a friction wheel, and mechanism intermediate the said branch and the rack bar, of a wheel having an inclined plane and curvilinear arm adapted to engage the friction wheel on the swinging branch, substantially as specified. 4th. In a brick machine, the combination, with the revoluble table, of the vertically reciprocating pressure plungers above and below the same, the vertically reciprocating removing plunger below the table, the transverse rock shaft having an angular branch 18, and an angular branch 21, a link connecting the branch 18, and the lower pressure plunger, a link connecting the branch 21 and the removing plunger, and a suitable means for reciprocating the pressure plunger, substantially as specified. 5th. In a brick machine, the combination with the revoluble table, the molds carried thereby, the movable dies seated in said molds, the vertically reciprocating presser plungers above and below the table, and the vertically reciprocating removing plunger below the table, connected with and adapted to be operated simultaneously with the lower pressure plunger, of the beam pivotally connected at its rear end to the guide casing, and at an intermediate point in its length to the upper plunger, and the plunger pivotally connected to the forward end of said beam and adapted to return the dies to their normal position, substantially as and for the purpose set forth. 6th. In a brick machine, substantially as described, the combination, with the revoluble table, the vertically disposed molds formed therein, and the supporting ledges 10<sup>a</sup>, arranged at the lower edges of the moulds, of the movable dies normally resting on the ledges 10<sup>a</sup>, and comprising a bottom section and an end section flexibly connected together, substantially as and for the purpose set forth. 7th. In a brick machine, the combination, with a feed box or hopper, of the lever having a depending branch at its forward end adapted to strike the walls of the box or hopper, a friction wheel carried by the rear end of the lever, a gear wheel engaging said friction wheel, and a spring for holding the friction wheel in engagement with the gear wheel, substantially as specified. 8th. In a brick machine, the revoluble table having mold boxes and movable die plates seated in said mold boxes, in combination with the feed box or hopper, the vertically reciprocating presser plungers, the vertically reciprocating removing plunger and the vertically reciprocating die returning plungers, substantially as specified.

**No. 42,138. Oil Can. (Bidon à huile.)**

Abraham J. Tschantz, Orville, Ohio, and Frederic M. Strong, Wheeling, West Virginia, all in the U.S.A., 1st March, 1893; 6 years.

*Claim*.—1st. A can having an imperforate bottom, a pump cylinder within said can, a tube leading from the lower portion of the cylinder to the upper portion of the can, and a piston having a hollow piston rod movable in the pump cylinder, substantially as described. 2nd. A can having a pump cylinder therein which is provided with a perforated portion projecting above the top of the can, a tube leading from the lower portion of the cylinder to the upper part of the can, and a piston having a hollow piston rod with an open upper end, substantially as and for the purposes described.

**No. 42,139. Oil Stove. (Poêle à huile.)**

William T. Dillon, Findlay, Ohio, U.S.A., 1st March, 1893; 6 years.

*Claim*.—1st. The method of producing an inflammable mixture from burning oil without first either heating it or converting it into a gas, consisting in burning the oil in a chamber and simultaneously mixing therewith air, and then feeding the mixed air and gases from the burning oil into a combustion chamber, where they are consumed for producing heat, substantially as described. 2nd. A stove for the purpose described, comprising an enclosed oil chamber, an air inlet communicating with the enclosure, and a combustion chamber with which the oil chamber enclosure communicates, substantially as specified. 3rd. A stove for the purpose described, comprising an oil chamber, an enclosure for the said oil chamber, a casing forming a combustion chamber, a deflector within the casing above the enclosure, the enclosure and the deflector having escape openings, and a means for supplying oil to the oil chamber, substantially as set forth. 4th. A stove for the purpose described, comprising a casing having an opening in its bottom, an oil chamber surrounding the opening, an enclosure for the oil chamber having escape openings in its sides, a deflector closing the casing above the enclosure to form a combustion chamber, and the deflector having escape openings in its edge, substantially as described. 5th. A stove for the purpose described, comprising a casing, a mixing chamber having an oil chamber, an absorbent within the oil chamber, an oil supply communicating with the oil chamber, the mixing chamber having air inlets, a combustion chamber, and the mixing chamber having in its walls outlet openings communicating with the combustion chamber, substantially as specified.

**No. 42,140. Car Coupler. (Attelage de chars.)**

Joseph Zehneck and Friedrick Stauch, both of Magebeburg-Buckan, Prussia, 1st March, 1893; 6 years.

*Claim*.—The improved automatic coupling for railway carriages, having a coupling bow elongated in its axial direction, which rests upon a shaft provided with a lever arranged at the side and so in gear with the drawing hook of the wagon, the end *s*, of the coupling bow sliding along the inclined surface *h*, of the drawing hook, lifts up the safety bow *s'*, and by its own weight falls down in the hook, whereupon the safety bow returns automatically to its original position, in this manner securing the coupling, whilst the uncoupling is effected by a lever resting upon the shaft *b*, and firmly connected with the safety bow *c'*, and revolving lifts the coupling bow *s*, out of the drawing hook and sets it free, all substantially in the manner and for the purposes hereinbefore described, and as represented in the drawing hereunto annexed.

**No. 42,141. Motor for Vehicles.**

(Moteur pour voitures.)

William Henry Thompson and George Morris, Hamilton, Ontario, Canada, 1st March, 1893; 6 years.

*Claim*.—The combination in a vehicle motor of the braced frame *G*, axles *D*, countershaft *b*, reach *C*, sprocket wheels *H*, *c*, *I*, chain belts *H*<sup>1</sup>, *H*<sup>2</sup>, cranks *c*, *e*, all arranged and constructed substantially as and for the purpose specified.

**No. 42,142. Register and Recorder for Cash.**

(Régistre et indicateur de monnaie.)

Frank Edwin Richardson, Cazenovia, New York, U.S.A., 1st March, 1893; 6 years.

*Claim*.—1st. A cash registering and recording apparatus, comprising a money receptacle, a case enclosing said receptacle, a number register connected to the money receptacle to be actuated by the movement of the same to its open position, and a normally inaccessible record tablet connected to the aforesaid case and rendered accessible by the movement of the money receptacle, as set forth. 2nd. The improved cash register, comprising the case *C*, provided with the drawer *D*, a number register connected to the case and to the drawer to be actuated by the latter, a record tablet secured to the case, and removable cover normally over the tablet and connected to the drawer and removed from the tablet by the movement of the drawer to its open position, as set forth. 3rd. The combination of the case *C*, provided with the drawer *D*, a tablet holder in said case, and a removable cover secured over said holder and connected to the drawer to be operated thereby, as set forth. 4th. The combination of the case *C*, provided with the drawer *D*, open port *a*, and pocket *b*, under said port, the tablet *c*, in said pocket, the spring roller *f*, connected to the case at one end of the port *a*, and the curtain *h*, connected at one end to the spring roller, and at the opposite end to the aforesaid drawer, substantially as and for the purpose set forth.

**No. 42,143. System of Electrical Distribution.**

(Mode de distribution électrique.)

Edwin Wilbur Rice, jr., of Lynn, Massachusetts, U.S.A., 1st March, 1893; 6 years.

*Claim*.—1st. The combination of a multiple series distribution system, with an equalizing machine connected in shunt around one of the multiple arc groups and serving as a motor or generator, according as the major load shifts from one side to the other side of the system, said machine being coupled mechanically with the main generator, so as to return and receive power from the same source of energy. 2nd. The combination of a multiple series distribution system with an equalizing machine connected in shunt around one of the multiple arc groups and acting as a motor when the shunted side has the lighter load, but as a generator when it has the heavier load, as described. 3rd. The combination of a multiple series distribution system, with an equalizing machine connected in shunt around one of the multiple arc groups and coupled mechanically with the main generator, said machine being so wound that its field is reversed according as the shunted side has the lighter or heavier load, thereby causing it to act both as a motor and generator, as set forth. 4th. The combination of a multiple series distribution system, with an equalizing machine shunting one side of the system and coupled mechanically with the main generator, said machine having a certain definite excitation, which is cut down or increased in accordance with the direction of current flowing through the machine, thereby maintaining the system balanced. 5th. The combination of a multiple series distribution system, with two equalizing machines, both coupled mechanically with the main generator and each shunting one side of the system, and a switch making or breaking the circuit with either machine at will, as set forth.

**No. 42,144. Tool for Setting and Gaging Saw.**

(Outil pour donner la voie et jauger les scies.)

Michael Meagher, Eau Claire, Wisconsin, U.S.A., 1st March, 1893; 6 years.

*Claim*.—1st. A combined saw set, raker gage, and jointing and gaging tool, comprising a stock having cap *B*, foot *a*, and rib *C*,

parallel with the cap and foot, and having projections I, on the said cap, and having a saw set at one end, a cross head located between the ends of the stock, and projected laterally on each side thereof and having a slot *c*, and having a shank, and a set screw for adjusting the said cross head to and from the foot to clamp a file and gage the raker teeth, substantially in the manner set forth. 2nd. The combination, with the stock having foot *a*, rib C, and the lateral lugs G, of the cross head E, fitted in a recess formed by cutting away a portion of the stock and the foot *a*, and having notches to receive the portions of the stock on each side of the said recess and having slot *c*, and a shank, and the set screw journaled in the lugs G, and having engagement with the shank of the cross head, the thumb wheel of the set screw projecting on one side through an opening in the stock, substantially as and for the purpose described.

**No. 42,145. Bracket for Shelves.**

(*Echantignole pour tablettes.*)

Henry L. Bradley, New Haven, Connecticut, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. A bracket the body of which is formed from a single piece of wire, which is curved to form eyes at the outer ends of the arms, and is also curved inward to form reduced portions and shoulders for the engagement of a brace. 2nd. The combination with a bracket made from a single piece of wire, which is curved to form eyes at the ends of the arms and is curved inward to form reduced portions and shoulders, of clips adapted to engage certain of the reduced portions and a brace having heads provided with side flanges adapted to be curved about certain other of the reduced portions, the ends of the heads resting against the shoulders, so that the brace and brackets are locked against movement independently of each other, and the width is not increased where the clips and braces are attached.

**No. 42,146. Steam Boiler or Generator.**

(*Chaudière et générateur de vapeur.*)

Charles D. Mosher, New York, State of New York, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In a boiler or steam generator, the combination of a furnace or fire box, a water drum extending across the rear end of the fire box, a steam drum extending across the rear end of the fire box directly above the water drum, and a group of tubes connecting the upper portion of the water drum with the upper portion of the steam drum, and bent to form loops disposed in vertical planes and extending lengthwise of the fire box, the tubes being bent to form inclined lower portions extending from the water drum toward the front of the fire box, and substantially horizontal or slightly inclined upper portions extending toward and joining the steam drum, the tubes at the opposite sides of the group being arranged to form walls enclosing the spaces surrounding the intermediate tubes, one of said walls having openings at its lower and upper ends for the passage of the products of combustion, as set forth. 2nd. In a boiler or steam generator, the combination of a furnace or fire box, a water drum extending across the rear end of the fire box, a steam drum extending across the rear of the fire box directly above the water drum, and a group of tubes connecting the upper portion of the water drum with the upper portion of the steam drum, and bent for from loops disposed in vertical planes and extending lengthwise of the fire box, the tubes being bent to form inclined lower portions extending from the water drum toward the front of the fire box, and substantially horizontal or slightly inclined upper portions extending toward and joining the steam drum, the tubes at the opposite sides of the group being arranged to form walls enclosing the spaces surrounding the intermediate tubes, one of said walls having openings at its lower and upper ends for the passage of the products of combustion and the return pipes connecting the end portions of the steam drum with the end portions of the water drum, as set forth.

**No. 42,147. Door for Cars, &c.**

(*Porte pour chars, etc.*)

George Martin Brill, Philadelphia, Pennsylvania, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The combination, with the inflexible door F, upper suspending ways 5 and 6, and the lower way 19, of the trolley 9, having the hook 16, bolt 17, enlarged head 18, socket plate 10, socket 12, and shoulder 13, and lower guide 20, with a spindle 21 extending into the door, substantially as described. 2nd. The combination, with a sliding door and ways, of a trolley 9, for suspending the door on the ways, comprising the socket plate 10, having the enlarged socket section 11, socket 12, shoulder 13, upwardly extending opening 14, and lug 15, hook 16, bolt 17, and head 18, substantially as described.

**No. 42,148. Lock for Jail Doors.**

(*Serrure pour portes de prison.*)

Charles H. Sparks, St. Louis, Missouri, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. In a jail door locking and operating mechanism, in combination with sliding cell doors, a horizontal shaft D; worm

sleeves G<sup>2</sup>; door plates F; projections D<sup>1</sup> protruding from the shaft; means for adjusting said projections longitudinally with respect to the worm sleeves, and means for rotating the shaft, substantially as set forth. 2nd. In a jail door locking and operating mechanism, in combination with sliding cell doors, the shaft D; the sleeves G<sup>2</sup>; door plates F, and locking devices actuated by such plates, substantially as set forth. 3rd. In a jail door locking and operating mechanism, in combination with the sliding cell doors, the shaft D; worm sleeves G<sup>2</sup>; door plates F, and locking devices actuated by the door plates; projections D<sup>1</sup> protruding from the shaft; and means for adjusting said projections longitudinally with respect to the sleeves, substantially as set forth. 4th. In a jail door locking and operating mechanism, the shaft D; the worm sleeves G<sup>2</sup> located at intervals along the length of the shaft; projections D<sup>1</sup> and D<sup>10</sup> protruding from the shaft; means for adjusting said projections longitudinally with respect to the worm sleeves; a register to indicate such adjustment, and means for rotating the shaft, substantially as set forth. 5th. In combination with the worm sleeves G<sup>2</sup>, the rotary shaft D extending within them; the rod or bar D<sup>3</sup> seated in the shaft, and suitable means for adjusting it longitudinally with respect to the shaft; said rod or bar having projections D<sup>1</sup> related to the sleeves as described, substantially as set forth. 6th. In combination with shaft D, the rod or bar D<sup>3</sup> therein, having projections D<sup>1</sup> protruding therefrom, and the artificial balls seated between the shaft and the rod or bar, substantially as set forth. 7th. In combination with the worm sleeve G<sup>2</sup>, the shaft D; the rod or bar D<sup>3</sup> therein, having the worm sleeve actuating projection D<sup>1</sup>, and the lever L connected to the rod and adapted to adjust it longitudinally, and means for locking the lever, substantially as set forth. 8th. In combination, substantially as set forth, the worm sleeves G<sup>2</sup>, the shaft D, the rod D<sup>3</sup> having projections D<sup>1</sup>; the collar L<sup>2</sup>; the lever L fulcrumed outside the corridor, and means for locking the lever. 9th. In combination, substantially as set forth, the sleeves G<sup>2</sup>, shaft D, the rod D<sup>3</sup> having projections D<sup>1</sup>; the collar L<sup>2</sup>; the lever L fulcrumed outside the corridor; means for locking the lever; a train of gears which rotates the shaft D, and the case N, the primal shaft of the gearing being protruded from the case. 10th. In combination with the sliding cell doors, the posts A<sup>1</sup>; the locking bars H; the door plates F, having the inclined notches *f*; the locking bars having the studs *h*, and means for actuating the plates horizontally, substantially as set forth. 11th. In combination with the locking bars H, the counter-weighted levers H<sup>2</sup>, and the door plates F which operate the locking bars, substantially as set forth. 12th. In combination with a sliding cell door having lugs *a*<sup>3</sup>, the rail C having the notch *c*<sup>2</sup>, the door plate F and the dog *f*<sup>1</sup> pivoted on the plate having its nose riding on the rail, adapted to collide with the lug and to enter the notch, substantially as set forth. 13th. In a jail door locking and operating mechanism which extends beyond the corridor and is operated at the outer side thereof, the case S, enclosing the mechanism which is within the corridor secured by fastenings inaccessible within the corridor, substantially as set forth.

**No. 42,149. Wrecking Frog.**

(*Rail de croisement pour remettre les chers sur la voie.*)

Willis C. Bourdette, Ridgway, Colorado, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The combination with a base frame adapted to rest on a cross tie and extend under and engage a main line rail, of a rotatable shoe journaled on the base frame and having a pair of hooked standards or arms of different height, to engage the thread or ball and the base flange of an ordinary rail, so that the latter constitutes an inclined frog for replacing a car or engine, substantially as described. 2nd. The combination, with a base frame, adapted to rest on a cross tie, and having hooked arms to extend under and engage a main line rail, of a rotatable shoe journaled on the base frame and having a pair of standards or arms to engage the tread or ball and the base flange of an ordinary railway rail, so that the latter constitutes an inclined frog for replacing a car or engine, substantially as described. 3rd. The combination with a base frame, adapted to rest on a cross tie and extend under and engage a main line rail, of a bar pivoted intermediate, its ends to the base frame, and a rotatable shoe, having a pair of hooked standards or arms of different height to engage the tread or ball and the base flange of an ordinary rail, so that the latter constitutes an inclined frog for replacing the car or engine, substantially as described.

**No. 42,150. Air Motor. (Moteur à air.)**

Joshua Kames, New York, State of New York, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. The combination of a compressed air reservoir, provided with an adjustable partition and means for operating the same, whereby the air space of said reservoir can be gradually diminished for the purpose of maintaining a uniform pressure in said reservoir, an expanding chamber, a valved pipe leading from the compressed air reservoir to said expanding chamber, an automatic pressure regulating valve or governor located in said pipe to automatically maintain the desired pressure in the expanding chamber, and an air engine supplied from said expanding chamber through a pipe provided with a throttle valve, substantially as described. 2nd. The combination of two compressed air reservoirs, an adjustable par-



tion arranged in each of said reservoirs, screw shafts for adjusting said partitions, each of said screw shafts being arranged to project from one end of a reservoir, gearing that connects the projecting ends of said shafts, driving devices for rotating either screw shaft, and a clutch mechanism for adjusting said driving devices in operative connection with one of said screw shafts, and disconnecting it from the other, whereby the partition in either compressed air reservoir can be adjusted to maintain a uniform pressure in said reservoir, substantially as described. 3rd. The combination of two compressed air reservoirs, each provided with an adjustable partition, mechanism for adjusting either of said partitions whereby the air space of either reservoir can be varied to maintain a uniform pressure in said reservoir, an expanding chamber, valved pipes that connect each of the compressed air reservoirs with said expanding chamber, and an air engine connecting with said expanding chamber through a pipe provided with a throttle valve, substantially as described. 4th. The combination of a compressed air reservoir, an expanding chamber connected with the said reservoir through a valved pipe, a heater for heating the air in said expanding chamber, a casing inclosing said expanding chamber, and an air engine connected with the expanding chamber through a pipe provided with a throttle valve, substantially as described. 5th. The combination of a compressed air reservoir, an expanding chamber, connected with said reservoir through a valved pipe, a heater for heating the air in said expanding chamber, a fuel magazine surrounding said expanding chamber and communicating with the heater, a casing inclosing said magazine and expanding chamber, and an air engine connected with the expanding chamber through a pipe provided with a throttle valve, substantially as described. 6th. In a compressed air car motor, the combination of a compressed air reservoir, an expanding chamber connected with said reservoir through a valved pipe, an automatic pressure regulating valve or governor located in said pipe, an air engine connected with the expanding chamber through a pipe provided with a throttle valve, mechanism for transmitting power from said air engine to the running gear of the car, and an air brake mechanism supplied from the expanding chamber, substantially as described. 7th. In a compressed air car motor, the combination of a compressed air reservoir, an expanding chamber connected with said reservoir through a valved pipe, a heater for heating the air in said expanding chamber, an air engine connected with said expanding chamber through a pipe provided with a throttle valve, mechanism for transmitting power from said air engine to the running gear of the car, and radiators located in the car and communicating with the expanding chamber, substantially as described.

**No. 42,151. Device for Clamping the Heads of Barrels.**  
(*Clameau pour fonds de barils.*)

Anton B. Vaag, Hillsboro, North Dakota, U.S.A., 1st March, 1893; 6 years.

*Claim.*—1st. A device for clamping the heads of barrels, comprising the movable bars formed with downwardly projecting hooks, provided with pivoted discs having inwardly projecting teeth or prongs, the handles connected with said bars, one of said arms being provided with a spring actuated dog, and the bar to which the other handle is connected being provided with rack teeth, with which said dog engages, substantially as described. 2nd. In a device for clamping barrel heads, the combination, with the bars movably connected together, and provided with hooks having pivoted discs with prongs or teeth, and the rack teeth formed on one of said bars, of the handles, the lug thereon, the sliding dog adapted to engage with said rack teeth, the lugs at the upper end of said dog, the lever pivoted to the handle and connected with said lugs, and the coiled spring connected with said dog and sleeve, substantially as described.

**No. 42,152. Veterinary Shield.** (*Bouclier de vétérinaire.*)

John G. Lee and William H. Rupert, assignees of William W. Whitaker, all of Gloversville, New York, 4th March, 1893; 6 years.

*Claim.*—1st. A shield consisting of the body, the upper and lower sides of which are provided with a series of apertures, the integral arms secured to the body, and a series of depending guards attached to the lower side of the body, for the purpose specified. 2nd. A shield consisting of a piece of leather or yielding material bent back upon itself, near its middle, and provided with the series of ventilating apertures and integral arms, the bended section having the re-enforcing ribs 4, while the rear end is provided with the cut away part or opening 2, and further provided on its under side with the parallel transverse guards 6, 8, and the intermediate V-shaped series 9, substantially as set forth. 3rd. In a shield, the combination of the body bent upon itself, and provided with perforations and integral arms, and further provided with the cut away section on its rear end, and re-enforcing ribs at its bended section, the re-enforcing bands at the point of bending, and the series of transverse and V-shaped depending guards attached to the lower side of the shield, substantially as and for the purpose set forth. 4th. An article of manufacture, consisting of the shield herein described and shown, having the body 1, open at its sides and provided with the series of ventilating apertures, and further provided on its under side with the series of depending guards, arranged substantially as described, and the arms 12, attached to the edges of the upper side of the body substantially as described and shown.

**No. 42,153. Diving Suit.** (*Habit de plongeur.*)

Joseph Louis Boucher, Emory Honore Brault, Romuald Filteau, James P. Labrec and Teles Labrec, all of West Superior, Wisconsin, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. A diving armour having its body portion made in two hinged halves working about a vertical axis, substantially as shown and described. 2nd. The combination with the shoulder piece A<sup>1</sup>, having a backbone extension A<sup>2</sup>, of two body sections B, B, hinged to the backbone, substantially as shown and described. 3rd. The combination, of the shoulder piece A<sup>1</sup>, the body portions B, B, hinged about a vertical axis, the crotch piece C, hinged to the body portion, and the waist band D, covering the joint between the crotch and body portions. 4th. A diving armour having longitudinal articulated limb braces, and circular rings or ribs attached thereto, substantially as shown and described. 5th. The body section B, having an adjustable slide for increasing or diminishing the size of the armholes, as described. 6th. The combination, of the crotch C, and the body section, the two having an articulated connection with a vertical adjustment, substantially as shown and described.

**No. 42,154. Process of and Apparatus for Mixing Sugar.** (*Procédé et appareil pour mélanger le sucre.*)

George Alexander Drummond, of Montreal, Quebec, Canada, 4th March, 1893; 6 years.

*Claim.*—1st. The process of mixing sugar and the like in a dry state, which consists in, first disposing the materials in horizontal layers, and subsequently dividing the mass vertically into a number of separate blocks or portions to be finally combined as a whole. 2nd. The process of mixing sugar and the like in a dry state, which consists in first, disposing the materials in superimposed horizontal layers, and subsequently dividing the mass vertically into a number of separate blocks or columns to be finally combined as a whole. 3rd. The process of mixing sugar and the like in a dry state, which consists in first, spreading or disposing the materials in superimposed horizontal layers, even and regular throughout, and subsequently dividing the mass, so formed, vertically into a number of separate blocks or columns to be finally combined as a whole as set forth. 4th. In apparatus for mixing sugar and the like, a receiving tank or receptacle open at its top and adapted to receive layers of the material or materials to be mixed, a discharging carriage or feed device arranged to travel above said tank, a main feed supply or conductor connected with said feed device, and suitably controlled outlets from the underside of said tank whereby separate portions of the mass, can be removed from said tank for the purpose set forth. 5th. In apparatus for mixing sugar and the like, a series of receiving chambers, arranged horizontally in line, a travelling feed device above said chambers, a main supply to said feed device, and means for automatically emptying said receiving chambers. 6th. In apparatus for mixing sugar and the like, one or more receiving tanks or receptacles arranged horizontally in line, a discharging carriage or feed device having a reciprocating movement above said tank or tanks, means for supporting and operating said feed device, an endless feeding belt extending along the top of said tank or tanks and having a continuous travel and a moveable connection in one direction with said feed device, valve controlled outlets from the underside of said tank or tanks and an endless belt or conveyer having a continuous travel beneath same as set forth. 7th. In apparatus for mixing sugar and the like, the combination with a receiving tank having inclined sides and discharge outlets at the bottom, of travelling scrapers working down said inclined sides as shown and described. 8th. In apparatus for mixing sugar and the like, the combination with a receiving tank provided with discharge outlets at the bottom thereof, of a feed guide in the form of a travelling hopper, the bottom of which has inclined portions to form an angle the apex of which is situated centrally of the hopper, and the sides of such hopper also provided with discharge openings, and a flap or gate hinged to such bottom at the said apex thereof and adapted by reversal of position, relatively to each of said inclined portions, to direct through one or the other of said discharge openings into said receiving tank, the materials being supplied to said hopper.

**No. 42,155. Oil Vapour Heating Apparatus.**

(*Appareil de chauffage au gaz à l'huile.*)

Emil Strauss, Naunyrstrasse, Berlin, Germany, 4th March, 1893; 6 years.

*Claim.*—1st. The general arrangement and combination of parts of the oil vapour heating apparatus, substantially as hereinbefore described and shown on the drawing annexed. 2nd. In an oil vapour heating apparatus, a vapour chamber *h*, which is adjustably supported in a forked plate *g*, by means of screws or equivalent, and upon the top of which is a vapour burner *l*, having an adjustable spreader *n*, substantially as hereinbefore described, with reference to the drawings annexed. 3rd. A burner nipple *m*, having, or not, strainers at its under side and provided with a spring acting cleaning needle, substantially as hereinbefore described and shown on the drawing annexed. 4th. The combination with the supply cock *i*, of a lever handle *i'*, a movable disc *k*, a projection fitted eccentrically on said disc, and having a recess for said lever handle,

and a rod or equivalent for turning said disc, substantially as and for the purpose hereinbefore set forth. 5th. The arrangement of springs for giving an elastic support to the burner and its accessories, substantially as hereinbefore described and shown on the drawing annexed.

**No. 42,156. Electric Motor or Dynamo Electric Machine.** (*Moteur électrique ou machine dynamo électrique.*)

Robert Lundell, Brooklyn, and Edward H. Johnson, New York, both in the State of New York, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. An electric motor or dynamo electric machine, having a single field magnet coil, which encloses or surrounds inwardly projecting field magnet poles in combination with a rotary armature having its axis coincident or parallel with the axis of the field magnet coil, said poles being located in the annular space between the field magnet coil and the armature, substantially as described. 2nd. An electric motor or dynamo electric machine, having a cylindrical enclosing shell with inwardly projecting pole pieces, and a single field magnet coil, in combination, with a rotary armature, having its axis coincident or parallel with the axis of the field magnet coil, the inwardly projecting pole pieces lying in the annular space between said coil and the armature, substantially as described. 3rd. An electric motor or dynamo electric machine, having a single field magnet coil and a rotary armature surrounded thereby, the effective field magnet poles being included in the annular space between the field magnet coil and the armature and the journal bearings of the armature shaft, being secured to the ends of the field magnet core, so as to enclose all of the operative parts of the machine, substantially as described. 4th. An electric motor or dynamo electric machine, having a hollow cylindrical field magnet core, enclosing the field magnet coil and armature, the latter being sustained by a shaft in journal bearings secured to the heads of the cylindrical core, and the effective field magnet poles being included in the annular space between the field magnet coil and the armature, substantially as described. 5th. An electric motor, having a single field magnet coil and an armature, the axis of which is coincident with the axis of the field magnet coil, and one or more inwardly projecting field magnet poles located in the annular space between the field magnet coil and the armature, substantially as described. 6th. An electric motor or dynamo electric machine, having a hollow cylindrical shaped field magnet core, provided with the inwardly projecting field magnet poles, located in the annular space between the field magnet coil and the armature, said field magnet coil and armature being encased by a cylindrical shell or drum and the armature, sustained by a shaft located in journal bearings, detachably secured to the heads of the shell or drum.

**No. 42,157. Compound for Converting Wrought Iron Into Steel.** (*Composé pour acier le fer.*)

The Miles Steel Company, assignee of William J. Miles, jr., Terre Haute, Indiana, U.S.A., 4th March, 1893; 12 years.

*Claim.*—The herein described composition of matter for facilitating and perfecting the conversion of wrought iron into steel, consisting of yellow prussiate or potassium, glycyrrhizinum ammoniatum, and ammoniacum, used as described, and compounded substantially in the proportions specified.

**No. 42,158. Suspender.** (*Bretelles.*)

Charles C. Krouse, assignee of Harry Meyer and Charles L. Girard, all of Williamsport, Pennsylvania, U.S.A., 4th March, 1893; 6 years.

*Claim.*—As a new article of manufacture, a strip of webbing woven with alternate long and short intervals of open spaces, to form a series of seamless suspenders in one continuous strip, said strip adapted to be separated by cutting the strip at predetermined points, to form suspenders, substantially as set forth.

**No. 42,159. Button.** (*Bouton.*)

George Benton Keplinger, Chicago, Illinois, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. The double spear headed post C, with four flattened edges and the button adapted to receive this double spear headed post C, and having two bearings for the double spear headed stem C, and recesses I, and spring E, for locking the button to the spear headed stem, as specified. 2nd. In a detachable button, the double spear headed stem C, the top and bottom plates A and B, the bottom plate reinforced by the plate H, and spring E, provided with a boss for a bearing at the top of the spear headed stem C, as specified.

**No. 42,160. Cash Carrier.** (*Chien de magasin.*)

Emanuel C. Gibe, Freeport, Illinois, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. In a device of the class described, the combination, with a suitable standard and a suitably supported track, of pulleys supported above the track at a suitable distance from the standard, a lever pivoted to the standard and extending to a point near said

pulleys, cords fastened to the free end of said lever and passing about said pulleys, and a transverse slide fastened to the free ends of said cords, and adapted to impinge upon a carrier moving on said track, substantially as shown and described. 2nd. In a device of the class described, the combination, with the standard and the track wire, of an arm or arms supported by the standard above the track wire, pulleys journaled in the end of said arm or arms, a lever pivoted to the standard and extending to a point near said pulleys, supplemental track wire lying below said arm, a slide moving on said supplemental track, and cords passing from the free end of the lever about said pulleys and fastened to said slide, substantially as shown and described. 3rd. The combination, with the lever D, comprising two parallel bars *d, d'*, of the standard A, lying between said bars and provided with a gudgeon *a*, extending through one of them, the bolt *b*, passing through the parts specified, and pivoting the lever to the standard, the spring S, encircling the bolt and resting at its inner end against the gudgeon, and the nut *n*, engaging the bolt, and adapted to regulate the tension of the spring, substantially as shown and described. 4th. The combination, with the standard A, and track wire W, of the lever D, pivoted to the standard, the slide F, moving above said track wire, and cords connecting said slide and the front end of the lever, said lever being provided at its rear end with a downward extension D<sup>1</sup>, and handle D<sup>2</sup>, and said extension being made up of two rods jointed at their ends and curved outward between their ends to form a space for the passage of the track wire, substantially as shown and described. 5th. In a device of the class described, the combination, with a suitable standard, of a bracket adjustably secured thereto, a suitably supported track wire and means, substantially as shown and described, for adjusting the bracket upon the standard, and bringing it into proper relation to the track wire. 6th. In a device of the class described, the combination, with a suitable standard and a suitably supported track wire, of a bracket supported by a standard, an arm supported by the bracket and extending above the track wire and means, substantially as shown and described, for adjusting the bracket upon the standard, and giving it an inclination corresponding to that of the track wire. 7th. In a cash carrier apparatus, the combination, with a suitably supported track wire and a suitable cashier's station at the end thereof, of a suitably supported standard A, at the opposite end of the track wire, a hollow casting B, enclosing the lower portion of the standard and formed with a central opening wider at its lower than at its upper end, and set screws S<sup>1</sup>, S<sup>2</sup>, set in the walls of the casting, and impinging upon the standard therein, whereby the casting may be adjusted upon the standard, substantially as shown and described. 8th. The combination, with the track wire W, and the cashier's station at one end thereof, of the standard A, at the opposite end of the track, the casting B, adjustably mounted thereon and provided with the arm C, means, substantially as shown and described, for adjusting the casting upon the standard, and regulating the position of the arm with reference to the wire, the lever L, pivoted upon the arm C, the looped cord K, fastened to the lever and passing through the end of the arm C, C<sup>1</sup>, and the carrier moving upon the track wire, and adapted to be propelled by the lever, substantially as shown and described. 9th. In a cash carrier apparatus, the combination, with the track wire, and the salesman's station at one end thereof, of the suitably supported plate B<sup>1</sup>, at the opposite end of the track, the bracket B<sup>2</sup>, secured thereon in the vertical plane of the track wire, the casting C<sup>2</sup>, adjustably suspended from the end of the bracket and means, substantially as shown and described, for adjusting the casting in the plane of the wire and fixing its relation thereto, substantially as shown and described. 10th. The combination, with the wire W, the suitably supported plate B<sup>1</sup>, and the bracket B<sup>2</sup>, of the casting C<sup>2</sup>, formed with the arm C, C<sup>1</sup>, and the set screws S<sup>4</sup>, S<sup>5</sup>, adapted to secure the casting S<sup>2</sup>, and arm C, C<sup>1</sup>, in suitable relation to the wire W, substantially as shown and described. 11th. The combination, with the track wire and the arm C, supported above it, the carrier moving on the track and means for propelling it from one end to the other thereof, of a plate lying above the wire and below the arm and supported at a point between its ends whereby, when the carrier lies beneath either end of said plate, that end of the plate may be raised above the other, substantially as described. 12th. The combination, with the track wire W, the arm C, supported above the track and the carrier moving on the track of the plate F, lying between the wire and the arm C, and having its end F<sup>1</sup>, turned upward, and the plate F<sup>2</sup>, having its upper end fastened to the arm C, and its lower end fastened to the plate F, at a point between the ends thereof, substantially as shown and described. 13th. The combination, with the track wire, the standard A, the arm supported above the wire, and the lever pivoted upon the arm, of the pulleys R, R, set in the outer end of the arm, the spring s, s, lying in the planes of the pulleys, and the cord K, passing between the pulleys and the springs s, s, and having its ends fastened to the lever, whereby the friction of the springs upon the cord prevents the dropping downward of the cord through its own weight, substantially as shown and described.

**No. 42,161. Garment Supporter.** (*Support pour vêtements.*)

John M. Brewer and Burke N. Smith, both of Detroit, Michigan, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. A skirt supporter consisting of a clasp B formed with folded clamping arms B<sup>1</sup>, B<sup>2</sup>, constructed in a single integral

piece of metal forming an eye *b* at one end of the clasp and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end thereof, a loop A flexibly suspended in said eye constructed of wire formed with a V-shaped extension *a*, and a slide C located upon the arms of said clasp to open and close said jaws, said slide having in combination therewith, a shield C<sup>1</sup> having its marginal edge projecting beyond the slide and the jaws when in closed position to conceal the same, said slide having a binding contact upon one of said clamping arms of the clasp, and the shield having a binding contact upon the other clamping arm, substantially as described. 2nd. A skirt supporter consisting of clasp B formed with folded clamping arms B<sup>1</sup>, B<sup>2</sup>, constructed of a single integral piece of metal forming an eye *b* at one end of the clasp and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end thereof, the one extended above the other and turned over to form a downwardly projecting smooth edged lip *b*<sup>4</sup>, the other jaw formed with an inwardly turned smooth edged flange *b*<sup>5</sup> opening and closing past the lip *b*<sup>4</sup> at right angles thereto, a loop A flexibly suspended in said eye constructed of wire formed with a V-shaped extension *a*, and a slide C located upon the arms of said clasp to open and close said jaws, said slide having in combination therewith, a shield C<sup>1</sup> having its marginal edge projecting beyond the slide, and the jaws when in closed position to conceal the same, said slide having a binding contact upon one of the clamping arms of the clasp, and said shield having a binding contact upon the other clamping arm, substantially as described. 3rd. A skirt supporter consisting of a clasp B formed with clamping arms B<sup>1</sup>, B<sup>2</sup>, constructed in a single piece folded intermediate its ends, forming an eye *b* at one end of the clasp and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end thereof a slide embracing said arms to open and close said jaws, and a loop A jointly suspended in said eye, said loop formed of a single piece of wire, having its extremities brought together adjacent to said eye, said extremities formed with flanges *a*<sup>1</sup> and *a*<sup>2</sup> to hold the clasp in engagement with said loop, substantially as described. 4th. A skirt supporter consisting of a clasp B formed with clamping arms B<sup>1</sup>, B<sup>2</sup>, constructed in a single piece folded intermediate its ends, forming an eye *b* at one end of the clasp, provided with a slot *b*<sup>6</sup>, and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end thereof, a slide embracing said arms to open and close said jaws and a loop A jointly suspended in said eye, said loop formed of a single piece of wire, having its extremities brought together adjacent to said eye, said extremities formed with flanges *a*<sup>1</sup> and *a*<sup>2</sup>, projected through the slot *b*<sup>6</sup> of said eye, to hold the clasp in engagement with said loop, substantially as described. 5th. A skirt supporter consisting of a clasp B formed with clamping arms B<sup>1</sup>, B<sup>2</sup>, folded intermediate their extremities to form an eye *b* at one end of the clasp, and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end, a slide C located upon said arms to open and close said jaws and formed with a shield C<sup>1</sup>, and a loop A flexibly supported in said eye *b*, the slide C and shield C<sup>1</sup> constructed and arranged to permit the lower edge of the shield sliding downward past said eye to facilitate the opening of said jaws, substantially as described. 6th. A skirt supporter consisting of a clasp B formed with clamping arms B<sup>1</sup>, B<sup>2</sup> folded intermediate their extremities to form an eye *b* at one end of the clasp, and jaws *b*<sup>1</sup>, *b*<sup>2</sup> at the opposite end, a slide C located upon said arms to open and close said jaws and formed with a shield C<sup>1</sup> and a loop A flexibly supported in said eye *b*, the slide C constructed with a slotted horizontal arm encircling said clamping arms, said shield C<sup>1</sup> constructed with an inwardly turned marginal flange, said horizontal arm projecting from the shield toward the center thereof, substantially as described.

#### No. 42,162. Cover for Grave Boxes.

(*Couvercle pour boîtes de fosse.*)

Isaac Scott, Chrisman, Illinois, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. A grave box cover consisting of two semi-circular plates telescopically overlapping each other and having horizontally positioned side flanges at right angles thereto and vertically disposed closed outer ends and eyes or rings on the top adjacent to the outer closed ends of each of the plates for lifting the device entire, substantially as described. 2nd. The combination, with a grave wall having an inner raised course of brick or stone, of a cover constructed of semi-circular plates telescopically fitted to each other and having flanges adapted to rest on said raised course of brick, substantially as described.

#### No. 42,163. Pocket Lamp for Cigar Lighters.

(*Lampe de poche pour allumer les cigares.*)

Henry Albert Sherman, Peachton, Ohio, U.S.A., 4th March, 1893; 6 years.

*Claim.*—The combination, in a pocket lamp, of a casing open at one side and having an opening in its upper edge, a segmental extinguisher pivoted on the interior of the casing and adapted to close the opening therein, an oil reservoir substantially the same shape as the casing and removably secured therein by means of lugs *f*, *f*<sup>1</sup>, on the exterior of the reservoir and the interior of the casing, a wick tube secured in an opening in the upper edge of oil reservoir, a removable spring igniting arm *g*, secured on the outer face of the reservoir, a removable cover *a*<sup>1</sup>, fitted over the open side of the casing, a short shaft journaled in the centre of the cover and carrying a disk for carrying the cap disk *h*, on its interior, and means for rotating this disk, substantially as described.

#### No. 42,164. Lamp Extinguisher. (*Éteignoir de lampe.*)

Edward William Cleversley and William Death, Hamilton, Ontario, Canada, 4th March, 1893; 6 years.

*Claim.*—1st. In a lamp extinguisher, the burner provided with an L-shaped lip, a spindle to which is affixed a cap or cover, and made to fit and be turned over on the top of the wick tube to extinguish the flame of the burner, substantially as specified. 2nd. In a lamp extinguisher, the wick tube B, formed with an L-shaped lip *a*, and perforations *b*, made therein, a spindle attached to the burner, so as to rotate, and cover or cap E, formed to fit over the top of the burner on three sides, operated by the spindle D, substantially as and for the purpose specified. 3rd. In a lamp extinguisher, the lip *a*, formed of a separate piece of metal and fastened to a burner by rivets or otherwise in combination with the cover or cap E, operated by a spindle D or otherwise, substantially as specified. 4th. In a lamp extinguisher, the combination of the wick tube B, lip *a*, perforations *b*, spindle D, and cap or cover E, all constructed substantially as and for the purpose specified.

#### No. 42,165. Manufacture of Axes, etc.

(*Fabrication des haches.*)

Charles White Hubbard, Pittsburg, Pennsylvania, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. In the art of making axes, etc., the improvement, which consists in shaping separately a steel cutting bit, and a poll blank, having its sides brought together to form the eye, but not welded together, and then passing through the bit and poll blank, an electric current, heating them thereby, and welding their ends together by contact, substantially as and for the purposes described. 2nd. In the art of making axes, etc., the improvement, which consists in shaping separately a steel cutting bit, with corrugated end, and a poll blank, passing through these parts an electric current, heating them thereby, and welding the corrugated end of the bit to the end of the poll blank by contact, substantially as and for the purposes described. 3rd. An axe, having on each side a concavity extending across its body, and from the bit substantially to the eye, the bit being thicker than the portion immediately in the rear thereof, substantially as and for the purposes described. 4th. An axe, having an iron poll and a steel cutting bit welded to the poll and extending back to the eye thereof, substantially as and for the purposes described.

#### No. 42,166. Means for Giving Reciprocating Motion.

(*Moyen de donner un mouvement réciproque.*)

Henry S. McKay, Boston, Massachusetts, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. In combination with an electric circuit, two or more electro magnetic devices, an armature adapted to be reciprocated by the magnetic devices, and a non-circuit breaking commutator adapted to be actuated by the reciprocate armature to alternately change the course of the current, to alternately energize the magnets, and thereby cause the armature to reciprocate without breaking the circuit and without said armature losing its magnetism. 2nd. In combination, with an electric circuit, two or more electro magnetic devices, an armature, and rod connected to said armature, and said armature and rod adapted to be reciprocated by the magnetic devices, and a non-circuit breaking commutator adapted to be actuated directly by the reciprocating part of the apparatus, to alternately change the course of the current, to alternately energize the magnets, and thereby cause the armature and rod to reciprocate without breaking the circuit and without said armature losing its magnetism. 3rd. In combination with an electric circuit two or more electro magnetic devices, an armature, and rod connected to said armature, and said armature and rod adapted to be reciprocated by the magnetic devices, and a rocking lever forming a non-circuit breaking commutator adapted to be rocked by the reciprocation of the armature, to alternately change the course of the current, to alternately energize the magnets, and thereby cause the armature and rod to reciprocate without breaking the circuit, and without said armature losing its magnetism. 4th. An electro magnetic engine composed of electro magnetic devices, an armature, and rod connected with said armature, said armature and rod adapted to be reciprocated by the magnetic devices, and a commutator for changing the course of the current from one magnet to the other, and the entire mechanism above named enclosed in a casing, and means for making the electrical connections between the electrical parts in the casing and an outside electric circuit. 5th. An electro magnetic engine composed of electro magnetic devices, an armature, and rod connected with said armature, said armature and rod adapted to be reciprocated by the magnetic devices, and a commutator for changing the course of the current from one magnet to the other, means for making the electrical connections between the engine and an outside electric circuit a switch for making and breaking connection between said circuit and the electric parts of the apparatus, and the entire apparatus except the outside circuit wires enclosed in a casing. 6th. An electro magnetic engine composed of electro magnetic devices, an armature, and rod connected with said armature, said armature and rod adapted to be reciprocated by the magnetic devices, and a non-circuit breaking commutator for changing the course of the current

from one magnet to the other, and actuated directly by the reciprocating part of the engine, and the entire mechanism above named enclosed within a casing, and means for making the electric connections between the electric parts in the casing, and an outside electric circuit. 7th. In combination with two or more electro magnetic devices, an armature adapted to be reciprocated by said devices, and to which a tool stock is adapted to be secured, a non-circuit breaking commutator adapted to be actuated by the reciprocation of the armature, and connected with the two conductors or wires of an electric circuit, an arm extending from said commutator and adapted at different stages of the movement of the commutator to connect both of said conductors or sets of conductors, or to come in contact with one conductor or set, and be disconnected from the other conductor or set, and said two conductors or sets of conductors electrically connected with the magnetic devices, whereby a closed circuit will be maintained in said magnets, and will alternately energize the same, and a continuous current of electricity transmitted through said circuits, to cause the continuous reciprocating motion of the armature, all set forth. 8th. The means whereby the stroke or movement of the reciprocating armature is regulated, consisting of a rocking lever, having its corners which are nearest to said armature, extending toward the same, blocks adjustably attached to said lever, and also having their outer corners extending toward the armature, and means for bringing said blocks nearer together or separating them further from each other, all as set forth. 9th. The combination of the reciprocating armature, the rocking lever composed of the two parallel plates D, D, the blocks  $b, b$ , interposed between said plates, and means for bringing said blocks nearer together and separating them from each other, all as set forth for the purposes set forth. 10th. The combination of the reciprocating armature, the rocking lever of conducting material, and the arm extending from said lever, and composed of two parts of conducting material which are separated by an insulating medium, the two magnetic devices for alternately attracting the armature and thus reciprocating the same, and the contacts F, F', disconnected with the magnetic devices, near them, but connected, respectively, with the magnetic devices opposite, by separate conductors, all as set forth for the purpose set forth. 11th. In combination, with the two conductors for transmitting the electric current to the working parts of the apparatus, of contact pieces connected with the said conductors, other contact pieces connected with the wires of an electric circuit, and a commutator carrying one or more pieces of conducting material to be operated to connect and disconnect the contact pieces of the circuit with the conductor connected to said circuit, all as set forth. 12th. In combination, with two contact pieces or terminals connected with the two wires of an electric circuit, two contact pieces situated opposite or below said terminals, and connected with the conductors which transmit the electric current to the working parts of the apparatus, the ring N, pivoted as described, the sectors O, O', attached to said ring, but separated from each other and from said ring by an insulating medium, and having the projections  $o, o'$ , and means for turning said ring on the pivot, and for causing said projections to connect and disconnect said terminals and contact pieces, all as set forth. 13th. In combination, with the ring N, pivoted as described, the sectors O, O', and projections  $o, o'$ , interposed insulating medium, the pivoted tube P, the spring nipple  $p$ , for bearing against the inner edge of said ring and means for turning the tube on its pivot and thereby turning the ring to cause the projections  $o, o'$ , to connect and disconnect the contact pieces of the electric apparatus, all as set forth. 14th. An electro magnetic engine, composed of electro magnetic devices, an armature, and rod connected with said armature, said armature and rod adapted to be reciprocated by the magnetic devices, and a commutator for changing the course of the current from one magnet to the other, and a pneumatic speed regulator for said reciprocating parts, and the entire mechanism above named enclosed within a casing, and means for making electric connections between the electric parts within the casing, and an outside electric circuit, and means by which air is admitted and allowed to escape from the pneumatic regulator. 15th. The combination with the reciprocating drill stock having a spiral groove or grooves, the ratchet  $g$ , loosely journaled upon said stock, and having a spline or splines engaging with said groove or grooves, and the spring dog  $i$ , all arranged and operating in the manner set forth. 16th. In combination with two or more electro magnetic devices, a reciprocating armature, a rod connected with said armature, and having a spiral groove or grooves, the ratchet  $g$ , loosely journaled on said rod, enclosed in the casing  $f$ , and having a spline or spline engaging with said groove or grooves, and a spring dog extending inwardly from said casing with the teeth of the ratchet  $g$ , all as and for the purpose set forth. 17th. The combination with the reciprocating drill stock, of the piston rod and piston H<sup>1</sup>, cylinder I, and an air passage leading from the cylinder I back of the piston H<sup>1</sup>, in the tool end of the machine frame, or otherwise, and for the purposes all set forth. 18th. In combination with two or more electro magnetic devices, a reciprocating armature, a piston connected with the same, the piston cylinder, a pneumatic speed regulator for said piston, and means for controlling the passage of air through the regulator, all as and for the purposes set forth. 19th. In combination with two or more electro magnetic devices, a reciprocating armature, a piston connected with the same, the piston cylinder and an air passage leading from said cylinder to the tool end of the machine, all as and for the purposes set forth. 20th. The combination with the reciprocating tool stock,

of the piston rod and piston H<sup>1</sup>, cylinder I, an air passage or passages leading from the cylinder I back of the piston H<sup>1</sup> to the tool end of the machine, or otherwise, and a regulating valve or valves for said openings, all arranged and adapted for the purposes set forth. 21st. The combination with the reciprocating stock, of the piston rod and piston H<sup>1</sup>, cylinder I, an air passage leading from the cylinder I back of the piston H<sup>1</sup>, to the tool end of the machine, the air inlet passage J, and valve  $j$ , all arranged and adapted for the purposes set forth. 22nd. In combination with the casing A, having the rack  $r$ , the sleeve R, and leg S, pinion  $u$ , and means for operating said pinion, all arranged and adapted for the purposes set forth.

**No. 42,167. Propelling Mechanism for Cash and Parcel Carrier.** (*Mécanisme de propulsion pour chiens de magasin.*)

Joseph Starr, New London, Connecticut, U.S.A., 4th March, 1893; 6 years.

*Claim.*—1st. A cash carrier, constructed substantially as herein shown and described. 2nd. The combination, with a cash car, a movable latch, and a trip mechanism adapted to engage with the latch, of a spring secured to a fixed support at one end, the opposite side end being adapted to engage with the cash car, and a means for flexing the said spring, as and for the purpose specified. 3rd. The combination, with a track, a car held to travel thereon, a block also held to travel upon the track, provided with a spring pressed latch adapted for engagement with the car, and a recess in its upper face, of an adjustable trip mechanism adapted for engagement with the latch to release it from the car, a bow spring pivoted to the fixed support at one end, a carrier block pivoted to the opposite end of the spring, adapted to travel upon the track and fit in the recess of the latch block, and a spring controlled mechanism for operating the latch block and flexing the spring, as and for the purpose specified. 4th. In a cash carrier, the combination, with a track and guides arranged parallel with the track at opposite ends thereof, of a latch block fitted to slide on the track, a spring actuated carrier block fitted to slide on the guides in front of the latch block, and a latch tripping device secured to the said guides, substantially as described. 5th. In a cash carrier, the combination, with a track and parallel guides at opposite ends of the track, of a spring actuated latch block sliding on the track, a carrier block sliding on the guides in front of the latch block, a spring having one end secured to a fixed support and its other end to the carrier block, and a latch tripping device adjustably secured to the guides, substantially as herein shown and described. 6th. In a cash carrier, the combination, with a track and tubular guides arranged parallel with the track at opposite ends thereof, of a latch block fitted to slide on the track, springs in the said guides and connected with the latch block, a carrier block fitted to slide on the guides in front of the latch block, a spring having one end secured to a fixed support and its other end secured to the carrier block, a latch tripping device secured to the guides, and a rope secured to the latch block for operating it, substantially as herein shown and described. 7th. In a cash carrier, the combination, with a track and parallel guides arranged at opposite ends of the track, of a latch block apertured to receive the track and provided with a recess in its upper face, a carrier block recessed centrally to receive the track and provided with arms having sleeves to receive the guides and with a lug on its upper face, a spring having one end secured to the lug of the carrier, and the other end secured to a fixed support, and a means for operating the latch block, substantially as herein shown and described. 8th. In a cash carrier, the combination, with a track, parallel tubular rods at the sides of the track, and guide pulleys on the ends of the rods, of a latch block fitted to slide on the track, springs secured to the rods, and cords secured to the springs passed over the guide and connected to the latch block, substantially as described. 9th. In a cash carrier, the combination, with a track, tubular rods at the sides of the track, and pulleys on the ends of the rods, of a latch block fitted to slide on the track, springs in the rods, cords secured to the springs passed over the guide pulleys and connected to the latch block, and a spring actuated carrier block fitted to slide on the rods in front of the latch block, substantially as described. 10th. In a cash carrier, the combination, with a track, tubular rods at the sides of the track, and guide pulleys at the ends of the rods, of a latch block on the track, springs in the rods, cords connected to the springs passed over the guide pulleys and secured to the latch block, a spring actuated carrier block fitted to slide on the rods, a latch releasing device adjustably secured on the rods, and an operating cord attached to the latch block, substantially as herein shown and described.

**No. 42,168. Soldering Composition.**

(*Composition pour souder.*)

Henri Leandre Gronimus, of Castle Longlaville, Community of Herserange, France, 4th March, 1893; 6 years.

*Claim.*—The herein described composition of matter to be used for soldering and other purposes, which consists of stannic chloride, zinc chloride, free hydro chloric acid, free sulphuric acid and protoxide of hydrogen, in substantially the proportions specified.

**No. 42,169. Carriage Axles. (Essieu de voiture.)**

Joseph Daniel Ovide Dubrulle and Florian Lebel, of Montreal, Quebec, Canada, 4th March, 1893; 6 years.

*Claim.*—1st. The combination with the axle journal having a parallel longitudinal chamber extending from its outward end inward and a feed passage from said chamber to the periphery of the journal, of an oil carrier or receptacle located in said chamber and means for imparting a longitudinal reciprocating movement to such carrier, as set forth. 2nd. The combination with the axle journal, having a parallel longitudinal chamber extending from its outer end inward, and a feed passage from said chamber to the periphery of the journal, of an oil carrier or receptacle located in said chamber and means for imparting an intermittent rotatory movement to said carrier, as set forth. 3rd. The combination with the axle journal, having a parallel longitudinal chamber extending from its outer end inward, and a feed passage from said chamber to the periphery of the journal, of an oil carrier or receptacle located in said chamber, and means for imparting a longitudinally reciprocating and intermittent rotatory movement to said carrier, as set forth. 4th. The combination with the axle journal, having a parallel longitudinal chamber, extending from its outer end inward, and a feed passage from said chamber to the periphery of the journal, and with the axle box having an interior uneven surface of a perforated tube with stopped ends, one of which is of uneven surface adapted to contain the lubricant located in said chamber, a spring device on the inner end of said tube, and forcing its end having the uneven surface against the uneven surface of the said cap, as set forth. 5th. The combination with the movable oil carrier, located in the journal of the axle and with the means for operating such carrier, of a loose agitating rod within such carrier, for the purpose set forth. 6th. The combination with the nut H, provided with groove *h*, of the washer *h*<sup>1</sup>, inserted in such groove, for the purpose set forth. 7th. The combination with the cap E, having the flange F<sup>1</sup>, with perforation *j*<sup>1</sup>, of the spring operated locking device *j*, *j*<sup>3</sup>, located in such perforation, for the purpose set forth. 8th. The combination with the nut H, and axle box B, having flange B<sup>1</sup>, of the spring pawl K, pivoted to such flange, and having its free end bearing on said nut, for the purpose set forth.

**No. 42,170. Shade Holder for Electric Lamps.**

(*Porte-rélecteur pour lampes électriques.*)

Henry A. C. Hellyer, Ottawa, Ontario, Canada, 4th March, 1893; 6 years.

*Claim.*—1st. The method of attaching shades to shade holders by the combination of the oblique rim A, the loose ring B, and the set screws D, substantially as and for the purpose herein before set forth. 2nd. The combination in one shade holder; of the two methods of attaching shades; namely the method as described above of the oblique rim A, the loose ring B, and the set screw D, and the method of the oblique rim A and the set screw D as in the case of the shade E, substantially as and for the purpose herein before set forth. 3rd. The method of attaching shade holders to lamp sockets by the combination of the claws H and the locking ring N, substantially as and for the purpose herein before set forth.

**No. 42,171. Electrical Propulsion for Cars.**

(*Système de propulsion électrique pour chars.*)

Archibald H. Brintnell, Toronto, Ontario, Canada, 4th March, 1893; 6 years.

*Claim.*—1st. In the electric propulsion of cars a system comprised of a series of underground motors situated beneath the level of the roadway in casings, the tops of which are flush with the surface of the roadway and means whereby motion is imparted from the said motor to driving wheels, which project slightly above the surface of the roadway and co-act with the drive board held in position on the axle of the car as and for the purpose specified. 2nd. In the electric propulsion of cars a system comprised of a series of underground motors situated beneath the level of the road way in casings, the tops of which are flush with the surface of the road way and means whereby motion is imparted from the said motor to driving wheels, which project slightly above the surface of the road way and co-act with the drive board held in position on the axle of the car, the mechanism for, imparting motion to the driving wheels being completely encased in tubes and the wires for conveying the current to the motor being likewise encased as and for the purpose specified. 3rd. As an improved system of electrical propulsion of cars, a series of motor pits situated beneath the surface of the road way, and provided with mechanism which derives motion from electric motors within pits, so as to rotate a series of longitudinal shafts held in alignment and connected to mechanism through which the cross shafts and driving wheels by which the car is driven or propelled, the said longitudinal shafts and cross shafts being held in and protected from water by tubes connecting the motor pits, driving pits and driving wheel pits, as and for the purpose specified. 4th. An improved system of electrical propulsion of cars a series of motor pits situated beneath the surface of the road way, and provided with mechanism which derives motion from electric motors within pits so as to rotate a series of longitudinal shafts held in alignment, and connected to mechanism through which the cross shafts and driving wheels by which the car is driven or propelled, the said longitudinal

shafts and cross shafts being held in and protected from water by tubes connecting the motor pits, driving pits and driving wheel pits and drain pipes being also provided leading from the driving wheels outwardly to the side of the road, as and for the purpose specified. 5th. The combination, with the motor pits, and casings A, A<sup>1</sup>, provided with covers A<sup>11</sup>, and the gear pinion *g*, on the shaft G, of the motor F, meshing with the gear wheel *h*, on the vertical shaft I, meshing with the bevel pinion K, on the longitudinal shaft, and with the bevel pinions *p*, on the cross shafts P, the opposite end of the cross shafts having the driving wheel O, secured thereto, which engages with the drive board supported on the axles of the car, each opposing wheel being driven in the reverse direction, and the cross shafts P, and longitudinal shafts being completely encased and protected from the water by underground tubes and casings, as and for the purpose specified. 6th. The combination, with the motor pit casings and cover, driving pit casings, and cover situated so that the tops of the motor pits and driving pits are flush with the surface of the roadway between the tracks, of the motor F, shafts G, pinions *g*, gear wheels H, on shafts I, bevel gear wheels J, meshing with the gear pinions K, on the longitudinal shafts and the pinion *p*, on the cross shafts P, which are journaled as specified, and provided with drive wheels O, which engage with the drive board supported on the axles of the car, each opposing drive wheel being rotated in the reverse direction, and the cross shafts P, and longitudinal shafts being completely encased and protected from the water by underground tubes and casings, as and for the purpose specified. 7th. The combination, with the casing A<sup>1</sup>, having situated in it the motor F, through which the longitudinal shaft M, and cross shafts are driven as specified, of the cover A<sup>11</sup>, secured to the top flange of the casing A<sup>1</sup>, upon a layer of rubber or other suitable material, by the bolts a<sup>11</sup>, as and for the purpose specified. 8th. The combination with the casing A<sup>1</sup>, having situated in it the motor F, through which the longitudinal shaft M and cross shafts are driven as specified, of the cover A<sup>11</sup>, secured to the top flange of the casing A<sup>1</sup>, upon a layer of rubber or other suitable material by the bolts a<sup>11</sup>, and the couplings *l*, connecting together the portion of the shaft above the motor, as and for the purpose specified. 9th. The combination with the casing and motor situated within the casing, driven and imparting motion to the cross shafts P, and driving wheels O, as specified, of the grooved driving wheels O, provided with interior face teeth, which propel the car by meshing with the side face teeth of the gear chain Y, which is held in position, as specified. 10th. The combination with the driving wheels O, and means for driving them from the electric motors situated beneath the road bed, of the gear chain Y, which is held in grooves in the drive board and upon end guiding wheels Z, and 2, having their bearings in brackets forming part of the drive board, the said gear chain being clamped in position or released when the brake is put on by the pivoted clamp 3, operated through the chain 5, connected to the brake rod 6, as and for the purpose specified. 11th. The combination with the driving wheels O, and means for driving them from the electric motors situated beneath the road bed, of the gear chain Y, which is held in position, guided and clamped on the drive board as specified, of the cam collars 7, situated between the ribs 9 and 10, forming part of the drive board, and means for changing the position of the cam collars, so as to raise the drive board, as and for the purpose specified. 12th. The combination with the driving wheels O, and means for driving them from the electric motors situated beneath the road bed, of the gear chain Y, which is held in position, guided and clamped on the drive board as specified, of the cam collars 7, situated between the ribs 9 and 10, forming part of the drive board and the two double arms 11, having the trunion 12, pivoted in their upper ends through which the rod 13 passes, one end of the rod which passes through one of the trunions having a right hand thread cut on it, and the other end which passes through one of the trunions having a left hand thread cut on it, and the ends of the said rod 13 being connected by the universal couplings 16, and extension rods 14, to the rods 15, which have sprocket wheels 18 secured on their end, which are rotated through the sprocket chain 20, connected to the hand wheel sprocket 19, as and for the purpose specified. 13th. The combination with the cross shafts E, driven as specified from the longitudinal shafts and motors, of the cross rod 26, having the open ends 27, and 28, and the swinging plates 33, and means for operating the same, the plates being pivoted on the links 34, and on the vertical crank rod 8, one crank 31, of which is connected to the plates 23, while the other crank 32, works in the open ends which are arranged in relation to each other, and the cranks to operate through the rod 26, the main wire switches as and for the purposes specified. 14th. The combination with the cross shafts E, driven as specified from the longitudinal shafts and motors, of the cross rod 26, having the open ends 27 and 28, and the swinging plates 33, operated by the ploughshare-shaped brackets *l*, secured to the front of the drive board, the plates being pivoted on the links 34, and vertical crank rod 30, one crank 31, of which is connected to the plates 33, while the other crank 32, works in the open ends which are arranged in relation to each other, and the cranks to operate through the rod 26, the main wire switches as and for the purpose specified. 15th. The combination with the cross shafts E, driven as specified from the longitudinal shafts and motors, of the cross rod 26, having the open ends 27 and 28, and the swinging plates 33, and means for operating the same, the plates being pivoted on the links 34, and vertical crank rod 30, one crank 31, of which is connected to the

plates 33, while the other crank 32, works in the open ends which are arranged in relation to each other and the cranks to operate through the lever 36, and link 37, the moving spring portion 26, of the switch 25, on the main wire 23, as and for the purpose specified. 16th. The combination with the drive board X, caused to propel the car forward as specified, of the ploughshare-shaped bracket *l*, designed to pass through the groove, *d*<sup>1</sup>, in the plate D, and so as to raise the hinged plate S, as and for the purpose specified. 17th. The combination with the electric motors situated in the pit casings and protected from moisture as specified and located in the circuit supplemental wires, of the switches 25, 26, located in the circuit of the main wires and means whereby the movable part 26, of one of the switches of the main wire 23, is held open during the period that the car is passing over the portion of the track through which the supplemental wire extends, as and for the purpose specified. 18th. The combination with the electric motors situated in the pit casings, and protected from moisture as specified and located in the circuit of the supplemental wires of the switches 27, 28, located in the circuit of the main wires and the swinging plates 33, pivoted on the links 34, and crank 31, and connected by crank connections to the open ends 27 and 28, of the rod 26, the said swinging plates being thrown from over the driving wheels O, by the ploughshare-shaped bracket *l*, so as to move the rod 26, in the direction indicated by arrow, and tilt the lever 36, on its pivot and thereby operate the switch 25, as and for the purpose specified.

**No. 42,172. Elevator and Carrier for Hay and Grain.**  
(*Monte-foin et grain.*)

George Marshall Jones, Hamilton, Ontario, Canada, 7th March, 1893; 6 years.

*Claim.*—1st. In a hay and grain elevator, in combination with a carrier provided with draft rope pulleys and track wheels, of brake devices arranged to act automatically on the track wheels by the weight of the load when it is being raised and carried to place of deposit, to prevent the carrier from running too fast on the track, the brakes being released from the track wheels when the load is dropped, allowing the carrier to run freely back to its place for another load, substantially as specified. 2nd. In a hay and grain elevator, in combination with a carrier provided with draft rope pulleys and track wheels, of the brake device consisting of the grooved uprights D, vertically sliding arms *d*, in the grooved uprights, each arm D, constructed with a recess 16, and spiral spring 17, and a slot *e*, and pulley frames *a*<sup>1</sup>, having vertical slots *c*, to allow the arms *d*, to slide in the uprights D, the brakes *h*, *h*<sup>1</sup>, fastened to flat springs *g*, *g*, connecting each pair of arms *d*, the whole constructed to operate the brakes automatically on the track wheels when the load is being lifted and carried to its place of deposit, to prevent the carrier from running too fast, substantially as specified. 3rd. In a hay and grain elevator, in combination with a carrier frame A, carrying draft rope pulleys of the trip device, consisting of the wings or projections *m*, on the pulley frame G, the deep spool shaped roller *n*, the flaring mouthed opening *s*, for the trip rope, the trip lever *q*, on the outside of the frame H, and bent around the pin 12, and through the sliding catch block *p*, so that the rope passing through the flaring opening *s*, can trip the hook *o*, in any position the operator may be placed in, substantially as specified. 4th. In a hay and grain elevator, the combination of the pulley frame G, pulley *l*, wings *m*, *m*<sup>1</sup>, roller *n*<sup>1</sup>, flaring trip rope opening *s*, frame H, catch block *p*, spring 13, trip lever *q*, hook *o*, all constructed substantially as and for the purpose specified.

**No. 42,173. Coin Operated Machine.**  
(*Machine actionnée par une pièce de monnaie.*)

Frank Ellsworth Housh, Brattleborough, Vermont, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. The shutter I, made of any suitable form and suspended on a shaft I<sup>1</sup>, which has at one end a lever *i*, controlled by a counterweight *j*, in combination with the lug *h*, on the side of the ratchet wheel D, substantially as and for the purpose described. 2nd. The ratchet wheel D, with its lugs *h* and *h*<sup>1</sup>, and counterweight D<sup>1</sup>, in combination with the shutter I, hinged to the shaft I<sup>1</sup>, having a counterweighted lever *i*, whereby the loose end of the paper in a slot machine is controlled and to insure its perfect delivery, substantially as and for the purpose described. 3rd. The combination of the reversing screw *d*<sup>11</sup>, and thread *e*<sup>11</sup>, within the box E, coin lever F<sup>1</sup>, having a counterweight shaft F, crank arm *f*, with its wrist *f*<sup>1</sup>, ratchet wheel D, having lugs *h*, *h*<sup>1</sup>, and counterweight D<sup>1</sup>, the shutter I, shaft I<sup>1</sup>, with its weighted lever *i*, all substantially as and for the purpose described. 4th. In a slot machine for delivery of paper in rolls, the core having a longitudinal slit, in combination with a removable tube having an inwardly projecting flange to correspond with the slit, and a series of burrs or projections on the exterior, substantially as and for the purpose described.

**No. 42,174. Vehicle Axle, Wheels and Springs.**  
(*Roue et ressort pour essieux de voiture.*)

John Findlay, Montreal, Province of Quebec, Canada, 7th March, 1893; 6 years.

*Claim.*—The combination of the wheels *a*, having recesses to receive the ends of spring bars, and surfaces *k*, with the axle having

collars *l*, also having wheel *f*, adapted to hold the spring bars *c*, with said spring bars *c*, the whole substantially as and for the purposes described.

**No. 42,175. Twine Holder.** (*Porte-ficelle.*)

John E. Tracy and Arthur N. Graham, both of Chicago, Illinois, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. The combination, with a cylindrical wire cage, a central circular plate in the bottom of the cage, a shaft depending centrally from the plate, a flange on the shaft below the plate, and a bracket frame having a disc thereon loosely fitting the shaft between said plate and flange, of a spiral track concentric with the shaft, connected at its ends respectively with the shaft and the flange thereon, a guide rod depending from the bracket frame, a weighted frame loosely secured at one end to the shaft, and contacting thereat with the spiral track, and loosely engaging the guide rod at its other end, substantially as shown and described. 2nd. The combination, with a skeleton wire cage, a central circular plate in the bottom of the cage, a shaft depending centrally from the plate, a flange on the shaft below the plate, a disc loose on the shaft between said plate and flange, and a wire bracket frame secured at its lower end to said disc, of a guide rod depending from the bracket frame, a fixed collar at the lower end of the vertical shaft, a collar loose on the shaft below the fixed collar, a brace rod projecting laterally from the loose collar and having an eye at its free end, a weighted frame held in loose connection with the shaft and guide rod, and a spiral track concentric with the shaft, and secured at its ends to the fixed collar and the flange on the shaft, and having loose contact with the limbs of the weighted frame, substantially as described.

**No. 42,176. Dress Stay.** (*Busc de corset.*)

Isabella Bray, New York, State of New York, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. As a new article of manufacture, the herein described dress stay, comprising two thin spring metal strips placed one upon the other and secured together at one end, the length of the strips being such as to give a projecting single thickness at each end, said projecting ends being perforated, substantially as shown and described. 2nd. The herein described dress stay, consisting of two flat thin strips of a spring nature placed one upon the other and secured together at one end, the strips being of a length to give a projection of a single thickness at each end, the projecting ends of the strips being pierced, combined with a fabric pocket longer than the stay so as to project beyond each end of the latter, and eyelets set through the fabric and the pierced ends of the strips, substantially as shown and described.

**No. 42,177. Reed Organ.** (*Orgue.*)

Melville Clarke, Chicago, Illinois, U.S.A., 7th March 1893; 6 years.

*Claim.*—1st. In a reed organ, the valves which control the reeds seating against the air pressure by which the reeds are operated and weighted to adapt them to be seated by gravity only, substantially as set forth. 2nd. In a reed organ, the valves which control the reeds seating against the air pressure by which the reeds are operated and weighted to adapt them to be seated by gravity only, the manual keys, and the levers by which they operate the valves, the distance of the weights on said valves from the hinges of the valves being proportional to the leverage of their respective keys, whereby the touch of long and short key, is equalized, substantially as set forth. 3rd. In an organ, in combination with the manual keys, the valve operating levers actuated by said keys provided with counter weights on their ends remote from the keys to counter balance the weight of the latter and uphold the keys independently of the pressure which seats the valve, substantially as set forth. 4th. In an organ, in combination with the manual, the valve operating levers and the valves operated thereby, the levers having on their arms remote from the keys, plungers to operate said valve, said plungers being in the form of weights to counter balance the keys, substantially as set forth. 4th. In combination with the valves adapted to seat by gravity only and weighted for the purpose, the levers which actuate them and the keys of the manual which actuate the levers being weighted on their arms remote from the keys to counter balance the latter, substantially as set forth. 6th. In a reed organ comprising a plurality of series of reed chambers corresponding to the same series of operating keys, the reed chambers of the several series all opening endwise at the same horizontal plane, corresponding individuals of several series being in line fore-and-aft, in combination with valves extending fore-and-aft, over the ends of corresponding individuals of the several series, and weighted to cause them to seat by gravity thereover, substantially as set forth. 7th. In a reed organ comprising a plurality of reeds and reed chambers corresponding to the same series of operating keys, the corresponding individuals of the several series terminating endwise at the same plane and converging from their ends remote from said plane, and the valves which control them seating at said plane, whereby the valved throats or mouths of said chambers are brought into a limited compass while their opposite ends may be expanded to accommodate the vibration of the reeds, substantially as set forth. 8th. In a reed organ, the reed chambers of each series which corresponds to a series of oper-

ating keys located side by side and terminating endwise at the same plane and individually valved at said plane; said chambers varying in length according to the length of their respective reeds; and the mute pertaining to such series at the opposite ends of said chambers extending in a direction inclined to the plane of the individually valved ends, substantially as set forth. 9th. In a reed organ, in combination with a principal set of reed chambers, a set of sub-base chambers parallel with the principal set, valves of the principal set and valves of the sub-base set, the valves of one of said sets having respectively rigid extensions which directly engage the corresponding valves of the other set, whereby the principal set operate the sub-base set, substantially as set forth. 10th. In a reed organ, in combination with a series of reed chambers pertaining to a given series of keys of the manual, a further series of reeds located parallel with the first series, the individuals of the second series being wider than the individuals of the first series, whereby said second series occupies greater extent parallel with the manual than the first series, and corresponding individuals are successively from a selected point, more and more out of fore-and-aft line, the valves which pertain to one of said series of chambers having respectively rigid oblique extensions, which directly engage the corresponding valves of the other series, substantially as set forth. 11th. In a reed organ, in combination with a principal set of reed chambers, a set of sub-base chambers parallel with the principal set, the valves of the sub-base set being hinged at their rear ends and having rigid extensions which overhang respectively the valves of the principal set, whereby the latter operate the former, substantially as set forth. 12th. In a reed organ, the manual keys and the levers which they actuate to operate their respective reeds, the octave coupling levers mounted on a coupling board, and having one arm lodged above the forward ends of the manual lever of the keys to be coupled respectively, and the other arm projecting freely under the keys respectively with which the coupling is to be effected, the coupling board being hinged at its edge proximate to the vertical plane of lodgment of the coupling levers on the manual levers, and the stop action pertaining to said coupling board, substantially as set forth. 13th. In an organ, in combination with the mutes, lever arms by which they are operated located outside of the chamber in which the mutes are situated, said lever arms having deflected ends *b*, the stop rods and the levers *H*<sup>5</sup>, operated thereby and engaging the deflected ends of the mute-operating lever arms, substantially as and for the purpose set forth. 14th. In an organ, in combination with the pedal bellows and the storage bellows, the standards which support the action constituting also the air conduits from the pedal bellows to the storage bellows, said conduits consisting of sections hinged together and adapted to collapse inwardly, the abutting ends of such sections having yielding packing to adapt them to make air-tight junctions when erect, substantially as set forth. 15th. In an organ, the base, and the action supporting standards adapted to collapse to lower the action toward the base, combined with a case having ends and back rigid with the base and extending high enough to enclose the action when the standards are collapsed, and a removable cover, substantially as set forth. 16th. In an organ, the base, and the action supporting standards adapted to collapse to lower the action toward the base, combined with a case having ends and back rigid with the base, and the cover hinged to the upper edge of the back, substantially as set forth. 17th. In a blast organ, in combination with the storage bellows, springs which are both collapsible and extensible connected to the bellows and adapted normally to hold the bellows partly collapsed, whereby they both resist the expansion of the bellows and cushion its collapse, substantially as set forth. 18th. In a blast organ, in combination with the storage bellows, helical springs connected fixedly at one end and connected at the other end to the fluctuating side of the bellows, said springs adapted to be compressed and extended, and at their normal position of no tension holding the bellows partly collapsed, substantially as set forth. 19th. In a blast organ, the storage bellows divided horizontally between its top and bottom sides, the helical springs *E*, *E*<sup>1</sup>, located within the lower section of the bellows, connected at their upper ends to the bar *E*<sup>1</sup>, which is rigid with the fixed portion of the lower section, and at the lower ends to the fluctuating side of the bellows, substantially as set forth. 20th. In an organ, in combination with the action frame, the pedal bellows, the storage bellows, the base which supports the pedal bellows, the standards which support the action frame and connect it to the base, said base and standards constituting the air conduit from the pedal bellows to the storage bellows, and being composed of sections hinged together and adapted to collapse inwardly, and suitable means for locking the action frame to the base when the standards are collapsed, substantially as set forth.

**No. 42,178. Cooking Stove. (Poêle de cuisine.)**

Joseph Lemieux, Lévis, Quebec, Canada, 7th March, 1893; 6 years.

*Claim.*—1st. A stove having a fire chamber *G*, and oven *F*, side by side, and an oven *7*, above the same, a flue *J*, intermediately of both ovens and dividing upward and downward, the up flue passing over the top of the upper oven, and the diving flue below the lower oven and under the fire chamber and thence upward outside the fire chamber and out above the upper oven, whereby the fire chamber is between the lower oven and the up flue of the stove, as shown and described. 2nd. A stove, having a fire chamber and oven side by side, a flue from said fire chamber passing around three sides of

said oven and under the fire chamber and thence up to the discharge, whereby the fire chamber intervenes the up flue and the oven, as set forth.

**No. 42,179. Sand Papering Machine.**

(Machine à appliquer le papier de verre.)

Charles L. Ruehs, Chicago, Illinois, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. In a machine of the class described, the combination with the bed, of longitudinal guides *a*<sup>1</sup>, laterally adjustable upon the bed, and guiding arms *a*<sup>2</sup>, pivotally secured to the bed by means of a pivot laterally adjustable upon said bed, substantially as described. 2nd. In a machine of the class described, the combination with the bed slotted at *a*<sup>0</sup>, of the longitudinal guides *a*<sup>1</sup>, laterally adjustable thereon, and the pivoted arms *a*<sup>2</sup>, secured to the bed by means of clamping bolts *a*<sup>5</sup>, adapted to slide back and forth in the slot, substantially as described. 3rd. In a machine of the class described, the combination with the bed, of the uprights *c*<sup>3</sup>, the blocks *c*<sup>2</sup>, guided vertically between said uprights and simultaneously adjustable by means of the screws *c*<sup>4</sup>, sprocket wheels *c*<sup>6</sup>, *c*<sup>7</sup>, and connecting chain, *c*<sup>8</sup>, and the feed rollers, *B*, *c*, the former fast upon a shaft *b*, journaled in the frame, and the latter upon a shaft *C*, journaled in the sliding boxes *c*<sup>2</sup>, and connected by suitable gearing with the shaft *b*, substantially as described. 4th. In a machine of the class described, the combination with the bed, of the feed roller *B*, fast upon a shaft *b*, journaled in a bed and the roller *c*, adjustably secured upon a shaft *C*, itself vertically adjustable with respect to the bed, substantially as described. 5th. In a machine for sand papering moulding, the combination with the bed, of the rollers *c*, provided with elastic faces, and adjustably secured upon a shaft *C*, itself adjustable vertically with respect to the bed, substantially as described. 6th. In a machine of the class described, the combination with the bed, of the uprights *d*<sup>2</sup>, thereon, the slotted cross pieces *d*<sup>1</sup>, the bolts *d*<sup>3</sup>, laterally adjustable in the slots, the arms *d*, vertically adjustable upon the bolts and the rollers *D*, journaled in the lower ends of the arms, substantially as described. 7th. In a machine of the class described, the combination with the bed, of the uprights *d*<sup>2</sup>, the slotted cross pieces *d*<sup>1</sup>, the bolts *d*<sup>3</sup>, laterally adjustable in the slots, the arms *d*, vertically movable upon the bolts and provided with rollers at their lower ends and the adjusting screws *d*<sup>5</sup>, adapted to vary the position of the arms vertically with respect to the bolts, substantially as described. 8th. In a machine of the class described, the combination with a suitable bed provided with guides, of a series of longitudinally reciprocating blocks adjustable both vertically and laterally with respect to the bed, substantially as described. 9th. In a machine of the class described, the combination with the bed, of suitable guides supported therefrom upon opposite sides, sliding yokes adapted to move in said guides, and a reciprocating block carrying frame, carried by and vertically adjustable in said yokes, substantially as described. 10th. In a machine of the class described, the combination with the bed, of two pairs of oppositely arranged guides supported therefrom, outer yokes adapted to slide in the two pairs of guides, inner yokes secured to and vertically adjustable with respect to the outer yokes and a reciprocating block carrying frame carried by the inner yokes, substantially as described. 11th. In a machine of the class described, the combination, with the bed of the frame *F*, carried by inner yokes at its opposite ends, said inner yokes being secured to outer yokes sliding in suitable guides supported from the frame, the screws *e*<sup>8</sup>, gears *e*<sup>9</sup>, *e*<sup>10</sup>, connecting shaft *e*<sup>11</sup>, and hand wheel *e*<sup>12</sup>, by means of which the frame *F*, may be bodily adjusted vertically with respect to the bed, substantially as described. 12th. In a machine of the class described, the combination, with the bed provided with suitable guides of the frame *F*, carried at its opposite end by the inner adjustable and outer sliding yokes, said outer yokes being provided with lateral extensions *e*<sup>13</sup>, connected by longitudinal bars *e*<sup>10</sup>, and provided with side brackets *e*<sup>20</sup>, connected by shafts *e*<sup>21</sup>, extending across beneath the bed and furnishing a convenient means of connection with the driving gear, substantially as described. 13th. In a machine of the class described, the combination, with a reciprocating frame, of a series of blocks *F*, secured in said frame by means of a clamping device vertically movable against a yielding force in a holder, itself adjustable both vertically and laterally in the frame, substantially as described. 14th. In a machine of the class described, the combination, with a reciprocating frame, of a series of blocks *F*, secured in said frame by means of a clamping device vertically movable against a yielding force in the collar adjustably clamped in a head, itself adjustably clamped to the frame, substantially as described. 15th. In a machine of the class described, the combination, with the reciprocating frame of a series of blocks *F*, secured to said frame by means of a clamping device, having an upwardly projecting pin provided at the top with an adjusting nut, a vertical collar about said pin containing a spring pressing downward upon the pin, and a horizontal head clamped about the collar, and pivoted at its ends to clamps engaging with the frame, substantially as described. 16th. In a machine of the class described, the combination of a reciprocating rod *g*<sup>6</sup>, provided at its end with a clamp *g*<sup>7</sup>, a box *g*<sup>8</sup>, adjustable in said clamp, and a shaft *e*<sup>21</sup>, carried in said box, substantially as described. 17th. In a machine of the class described, the combination, with the bed, of the gears *g*<sup>9</sup>, *h*<sup>3</sup>, journaled in fixed positions and the connecting gears *h*, *h*<sup>1</sup>, fast together, and journaled upon a

pin adjustably in a curved slot concentric with the gear  $g^9$ , substantially as described. 18th. In a machine of the class described, the combination, with the bed, of a shaft  $h$ , journaled in a fixed position, a shaft  $C$ , adjustable with respect thereto, gears upon the ends of the two shafts and suitable gearing connecting the two, journaled upon an oscillating frame pivoted upon one of the shafts and adjustable with respect to the other, substantially as described.

**No. 42,180. Music Rack.** (*Porte-musique.*)

John Albert Weser, New York, State of New York, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, a link pivoted to the case and to the lower part of the desk, for guiding the bottom thereof in its swinging movements, and a spring exerting a tension rearwardly against the desk in a direction approximately parallel with the position of the link when the desk is fully open, whereby when the desk is partly closed the tension will be effective to close it. 2nd. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, a bar or roller  $n$ , connected to the rear of the desk, and a leaf spring  $C$ , mounted on the case and exerting a rearward pressure against said bar or roller. 3rd. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, a link pivoted to the case and to the lower part of the desk for guiding the bottom thereof in its swinging movements, and a spring exerting a tension rearwardly against the desk, and a stop applied to said spring for limiting the downward movement of the desk. 4th. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, a bar or roller  $n$ , connected to the rear of the desk, and a leaf spring  $C$ , mounted on the case and exerting a rearward pressure against said bar or roller, and said spring formed with a hooked end  $C^1$ , adapted to engage said roller and form a stop to limit the downward movement of the desk. 5th. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, and a cushion  $r$ , applied to the upper part of the desk and adapted when the latter is fully open to wedge itself against the upper margin of the opening. 6th. The combination with a musical instrument case, having a front opening, of a music desk adapted to close said opening, mounted to swing out and slide down, having at its upper part a sliding connection with the case, a link pivoted to the case and to the lower part of the desk for guiding the bottom thereof in its swinging movements, consisting of a strip  $i$ , extending longitudinally of the desk connected by hinges  $j, j$ , to the lower margin of the opening and by hinges  $k, k$ , to the desk, and a spring arranged to exert a rearward tension against the desk. 7th. In a musical instrument case, a music desk having a roller  $n$ , a roller  $h$ , on the case, for guiding said desk, and a spring  $C$ , on the case, and acting against the roller  $n$ , said rollers arranged to be close together when the desk is closed and to separate as the desk opens, as and for the purpose specified. 8th. In a musical instrument case, a music desk having a roller  $n$ , in combination with a spring  $C$ , carried by said case, and acting against said roller to close the desk, said spring constructed to support in part the weight of the desk, as and for the purpose specified.

**No. 42,181. Shaded Lamp Chimney.**

(*Cheminée de lampe à ombrage partiel.*)

David Mefford Mefford, Toledo, Ohio, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. As a new article of manufacture, a lamp chimney having thereon a sectional zone of translucent paint indelibly fixed thereon by firing, located at a point opposite the point occupied by the flame of the burner to permit an unobstructed passage of the light above and below the shade, substantially as described. 2nd. As a new article of manufacture, a lamp chimney having a shade formed thereon by a sectional zone of translucent material fixed thereon at a point opposite the flame of the burner, to permit the unobstructed passage of the light above and below the shade, substantially as described.

**No. 42,182. Support for Books, Pamphlets, etc.**

(*Support pour livres, pamphlets, etc.*)

William Evarts Richards, New York, State of New York, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. A support for books and other like articles, formed of a single sheet of metal consisting of a base plate adapted to be inserted beneath the books, an upright extending therefrom, and a brace projecting from the upright in a direction opposite to that of the base plate, substantially as described. 2nd. A support for books

and other like articles, consisting of a base plate adapted to be inserted beneath the books, an upright extending from the end of the base plate, and a brace projecting from the upright in a direction opposite to that of the base plate, substantially as described. 3rd. A support for books and like articles, consisting of a base plate, an upright extending therefrom, a brace projecting from the upright in a direction opposite to that of the base plate, and a flange depending from the base plate to engage the edge of the supporting surface, substantially as described.

**No. 42,183. Apparatus for Carrying out the Desulphurisation of Pig Iron.** (*Appareil pour la désulfuration de la fonte en gueuse.*)

Gustav Hilgenstock, Hoerde, Prussia, 7th March, 1893; 6 years.

*Claim.*—An apparatus for carrying out the process of desulphurizing sulphuretted pig iron, consisting in a vessel having the shape of a converter provided with a closed bottom, and being movable on two trunnions, after the manner of a converter, said trunnions being mounted on a ring surrounding the vessel or on the shell of the vessel direct and the said vessel being turned on its trunnions by means of a plunger acting on a projecting piece arranged at the back of the apparatus, substantially as described.

**No. 42,184. Weeder.** (*Sarclour.*)

John P. Roe, Oshkosh, Wisconsin, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. A shovel provided with a narrow blade, and a foot pressure bar having a socket surrounding the handle and projecting laterally beyond the blade, so as to form a wide pressure surface for the foot, said bar having a recess on its under side to lock on the edge and corner of the blade. 2nd. The combination, with a handle, of a narrow spade-like blade, having a concave face and an upwardly curved cutting edge, and a foot pressure bar having an angular opening corresponding with and fitting around a head at the upper end of the blade and removable therefrom, substantially as shown.

**No. 42,185. Reed Organ, Etc.** (*Orgue, etc.*)

James Baillie Hamilton, Kensington, England, 7th March, 1893; 6 years.

*Claim.*—In reed organs or like musical instruments a mute or flap for reed cells so arranged or constructed as to carry or constitute the tubes or cavities which are to be placed in air tight communication with the reed chambers whether the reeds therein be acted upon by pressure or by suction the said mute or flap being of a tubular or cellular form or performing the functions of a conductor or of a rack for organ pipes substantially as hereinbefore described and illustrated.

**No. 42,186. Harvester.** (*Moissonneuse.*)

Thomas John Hamlet, Terrebonne, Quebec, Canada, 7th March, 1893; 6 years.

*Claim.*—1st. A harvester grain platform having a tilting action independently of the main frame. 2nd. A harvester grain platform frame pivotally connected with the main frame. 3rd. A harvester grain platform frame pivotally connected at one end with the main frame and at the other end with the grain wheel the pivoting axes being in the same line. 4th. A harvester grain platform frame having an upward set at its stubble end and such end pivotally connected with the main frame. 5th. A harvester grain platform frame having an upward set at its stubble end overlapping and pivotally connected with the main frame. 6th. In a harvester, the combination with the main frame and the grain platform frame the latter having an upward set at its stubble end which overlaps the main frame, and an intermediate transverse bar of central pivotal connections between the side bars of the main frame and the stubble end bar and said transverse bar of the grain platform frame. 7th. In a harvester, the combination with the main frame, having depressions in its inner side bar, and the grain platform frame having an upward set at its stubble end, which overlaps the main frame, and an intermediate transverse bar of supporting blocks situated centrally of and projecting downwardly from the said intermediate transverse and stubble end bars of said grain platform frame, and hangers projecting downwardly from the side bars of the main frame and pivotal connections between said supports and hangers, as set forth. 8th. In a harvester the combination with the main frame, having depressions in its inner side bar, and the grain platform frame having an upward set at its stubble end, which overlaps the main frame, and an intermediate transverse bar, of supporting blocks  $E^1, E^2$ , situated centrally of and projecting downwardly from the said intermediate transverse and stubble end bars of said grain platform frame, and hangers  $B^1, B^2$ , projecting downwardly from the side bars of the main frame, the hangers  $B^1$  and block  $E^2$  respectively having inwardly projecting spindle bearings  $B^3, B^4$ , the block  $E^1$  and hanger  $B^2$  being bored to fit such spindle bearing, and means for holding the parts in place, as set forth. 9th. In a harvester, the combination with the main frame, the main driving wheel and counter shaft rotated from such wheel, of the grain platform pivotally connected with the main frame, a shaft, such as  $G$ , extending through the pivotal connections between



the two frames and within the axis of such pivotal connection, and connection gear at one end between such shaft G and the countershaft, and at the other end between such shaft G and the cutter knife as set forth. 10th. In a harvester, the combination, with the main frame, the main driving wheel and counter shaft rotated from such wheel, of the grain platform pivotally connected with the main frame, a shaft, such as G, extending through the pivotal connections between the two frames, a transverse shaft, such as J, extending across the grain platform frame and connecting gear between the shafts G and J, and between such shafts and the countershaft and cutter knife respectively, as set forth. 11th. In a harvester, the combination, with the main frame, of the main driving wheel and counter shaft rotated from such wheel, of the grain platform pivotally connected with the main frame, a shaft, such as G, extending through the pivotal connections between the two frames, a transverse shaft such as J, extending across the grain platform frame, the grain carrier Q, and its rollers Q<sup>1</sup>, Q<sup>2</sup>, and connecting gear between said shafts and the said countershaft and between the shaft J, and the roller Q<sup>1</sup>, as set forth. 12th. In a harvester, the main frame, enclosing driving wheel, projecting back beyond the rear of the grain platform frame, and rigid throughout. 13th. In a harvester, the combination, with the main frame, and grain platform frame, of a bracing bar rigidly secured at one end to the main frame and held in a fixed position, and a sliding connection between its opposite end and the said grain platform frame, as set forth. 14th. In a harvester, the combination, with the main frame, and grain platform frame, of a bracing bar rigidly secured at one end to the main frame, and held in a fixed position by a midway support from said frame, and a sliding connection, between its opposite end and the said grain platform frame, as set forth. 15th. In a harvester, the combination, with the main frame and grain platform frame, of a bracing bar rigidly secured to the main frame, a link rigidly secured to the grain platform frame, and a pin connection between the free end of said brace and said link, for the purpose set forth. 16th. In a harvester, the combination, with the main frame having depressions B<sup>2</sup> B<sup>2</sup>, of an independently tilted grain platform frame. 17th. The combination, with the countershaft F, of the reel operating shaft L, and pivoted bearing for its lower end, as set forth. 18th. In a harvester, the combination, with the grain platform frame and its carrier Q, of the overlapping guide bars Q<sup>2</sup> Q<sup>1</sup>, for the purpose set forth. 19th. In a harvester, the combination, with the grain platform frame having guiding and supporting slats Q<sup>3</sup> Q<sup>3</sup>, of the carrier Q, and overlapping guide bars Q<sup>4</sup> Q<sup>4</sup>, for the purposes set forth. 20th. In a harvester, the combination, with the grain platform frame having guiding and supporting slats Q<sup>3</sup> Q<sup>3</sup>, of the rollers Q<sup>1</sup>, Q<sup>2</sup>, carrier Q, overlapping guide bars Q<sup>4</sup>, Q<sup>4</sup>, and means for imparting motion to said roller Q<sup>1</sup>, as set forth.

**No. 42,187. Manufacture of Sensitive Plates and Films or other Media for Photographic Purposes.** (*Fabrication des plaques sensibilisées et toiles ou autres à l'usage de la photographie.*)

John Tyack Sandell, of London, England, 7th March, 1893; 6 years.

*Claim.*—1st. In the manufacture of photographic plates, films or other sensitive media, the combination of two or more superposed coatings of emulsion possessing different degrees of sensitiveness to light, substantially as and for the purpose specified. 2nd. The manufacture of photographic plates, films or other sensitive media by superposing coatings or layers of emulsion, possessing different degrees of sensitiveness to light, substantially as described. 3rd. As a new article of manufacture, a stratified sensitive plate, film or other medium for a photographic negative composed of two or more superposed coatings or layers of emulsion possessing in regular gradation from the undermost to the uppermost layer, progressively increased degrees of sensitiveness to light, as and for the purpose specified.

**No. 42,188. Heating and Welding by Electricity.**

(*Chauffage et soudage par l'électricité.*)

Henry Howard, of Halesowen, near Birmingham, England, 7th March, 1893; 6 years.

*Claim.*—In heating and welding with the electric arc, the combination of a main connected to one pole of the source of electricity, two or more pencils connected to the said main, two or more resistances each interposed between one of the pencils and the said main, and a second main connected at one end to the work to be heated or welded, and at the other end to the other pole of the source of electricity.

**No. 42,189. Boot and Shoe.** (*Chaussure.*)

Frank Mathews and Alexander Sabiston, both of Montreal, Province of Quebec, Canada, 7th March, 1893; 6 years.

*Claim.*—1st. A boot or shoe sole, containing within it a shield or protector impenetrable to dampness and of a wear resisting nature. 2nd. A boot or shoe sole, containing within it a shield or protector, of a greater wear resisting material than that composing the sole. 3rd. A boot or shoe sole, containing within it a shield or protector, of a metallic or like wear resisting nature. 4th. A boot or shoe sole,

containing within it a metallic protector. 5th. In combination, with the sole of a boot or shoe, a shield or protector of a metallic or like wear resisting nature interposed between the insole and outsole. 6th. In combination, with the sole of a boot or shoe, a sheet or layer of aluminum interposed between the insole and outsole, as shown.

**No. 42,190. Paper Making Machine.**

(*Machine pour la fabrication du papier.*)

Alexander S. Grosset, Newburgh, New York, 7th March, 1893; 6 years.

*Claim.*—1st. In a paper machine, the combination of the main or driving shaft provided with a gear, a countershaft having a gear meshing with first named gear, the pulley on said shaft, a shaft parallel to said countershaft having thereon a pulley and a removable pinion, said pulleys being connected by a bolt, and a press roll having on its axis, a removable spur gear adapted to mesh with said pinion, whereby the speed of the roll can be changed by changing said spur gears, substantially as set forth. 2nd. In a paper machine, the combination of the main driving shaft, a pair of bevel gears, one on said driving and one on a countershaft having two pulleys, said countershaft, two shafts parallel therewith, each having a pulley connected by a belt with one of the pulleys on the first named countershaft, and each being provided with a pinion meshing with a spur gear on the axis of a roll, and said spur gears and rolls, whereby both rolls are driven from one gear on the main shaft, substantially as described. 3rd. In a paper machine, the combination of the rolls of the main driving shaft, two bevel gears thereon, and intermediate mechanism for driving two or more rolls from each level gear, the rolls, driving shaft and intermediate mechanism being on a level, whereby the machinery is made accessible, the danger of being entangled therein is diminished and excessive friction avoided, substantially as set forth.

**No. 42,191. Brake Apparatus for Railways.**

(*Appareil de freins pour chemins de fer.*)

Charles Lugers, Brussels, Belgium, 7th March, 1893; 6 years.

*Claim.*—1st. In railway brake apparatus constructing the breaking device in the form of a friction disc or drum of a diameter less than that of the wheels, for the purpose of accelerating the diminution of the speed of rotation with reference to the speed of travel, and of utilizing the increase of the co-efficient of friction obtained by such retardation for compensating for the diminution of the co-efficient of friction resulting from heating, &c., of the parts of the braking device, and of producing thus a constant co-efficient of friction which, with a constant pressure approximately equal to the force of adhesion, will exert on the axles an action always near the skidding, without ever reaching this, and thus reducing to a minimum the time required for stopping the train. 2nd. The distributing valve for the brake cylinders, consisting essentially of the combination with the auxiliary reservoir H, of a valve for regulating the pressure proportional to the load on the vehicle, and an admission valve of special construction, the regulating valve being characterized by a double piston G, controlled by a spring R, subject to the load of the vehicle, and allowing the auxiliary reservoir only, to be charged with a pressure proportional to the load, while the admission valve consists of two pistons, L and K, fitting one within the other, and having between them a spring R<sup>2</sup>, which keeps L closed while it presses K downwards, when a decrease of pressure occurs in the train pipe X, and consequently in the space V, for allowing the compressed air of the reservoir H, to pass through t<sup>2</sup>, d<sup>1</sup>, and t<sup>3</sup>, to above L, which is thereby depressed, and thus gives access to the cylinder through t<sup>3</sup>, substantially as described with reference to the drawings. 3rd. The combination with the accumulator A, of the compressor with two pistons P<sup>1</sup>, P<sup>2</sup>, which are always maintained at the end of their stroke by a spring R<sup>2</sup>, but are moved forward by means of the air pressure in the accumulator A, which is put in communication with the space d, either by the cock F, or when first starting the space d, is supplied with steam through the cock F<sup>1</sup>, the compression of the air being effected by the piston P<sup>2</sup>, forced backward by the eccentric E, on the wheel axle, until the maximum pressure is attained in the accumulator, such pressure being then made to act on the piston P<sup>1</sup>, of the pressure regulator so as to compress the spring R<sup>2</sup> sufficiently for putting the space d in communication with the atmosphere through the passage l, and pipe t<sup>4</sup>, t<sup>5</sup>, so as to allow the pistons to be held back by the spring again, substantially as described with reference to the drawings.

**No. 42,192. Friction Clutches.**

(*Embrayage à friction.*)

James Francis McLaughlin, Philadelphia, Pennsylvania, U.S.A., 7th March, 1893; 6 years.

*Claim.*—1st. In a friction clutch, the combination, with a driving and a driven member to be coupled thereto, of clutch shoes mounted on one rotating member, and in operative relation to the other member, a non rotating screw fed shifter for forcing the shoes into engagement and toggle connections between the said shifter and shoes, substantially as described. 2nd. In a friction clutch, the combination of a driving and a driven member, and radial clutch shoes for connecting and disconnecting the same, with radial toggles, one for each shoe, and a non rotating screw fed shifter for actuating the toggles sim-

ultaneously, substantially as described. 3rd. In a friction clutch, the combination of a driving and a driven member, and clutch shoes for connecting and disconnecting the same, with adjustable toggles, one for each shoe, and a non rotating screw fed shifter for controlling the clutch shoe, substantially as described. 4th. In a friction clutch, the combination with a driving and driven member and clutch shoes for connecting and disconnecting the same, of toggles, one for each shoe, a shifter for controlling the clutch shoes, and locks for the toggles carried by the latter, whereby the shifter is relieved from strain when the two members of the clutch are coupled, substantially as described. 5th. In a friction clutch, the combination with a driving and driven member, and radial clutch shoes for connecting and disconnecting the same, of radial toggles, one for each clutch shoe, a shifter controlling the clutch shoes, and an adjustable stop on each toggle, locking it against accidental return movement, when the two members of the clutch are coupled, substantially as described.

**No. 42,193. Wire Nail. (Clou de fil de fer.)**

James Pender & Co., assignee of Eben Perkins, all of St. John's, New Brunswick, Canada, 7th March, 1893; 6 years.

*Claim.*—In the manufacture of wire nails, oxidizing or corroding the wire in a coil prior to making the nails.

**No. 42,194. Cancelling and Dating Stamp.**

(*Machine à maculer et dater.*)

William G. Moseley and Edward R. Bulloch, all of Grain Valley, Missouri, U.S.A., 8th March, 1893; 6 years.

*Claim.*—1st. In a stamp of the character described, the main portion provided with a recess and pivoted levers for dislodging the characters of the stamp one at a time at will, substantially as described. 2nd. In a stamp of the character described, the main portion provided with a recess and pivoted levers for dislodging the characters of the stamp, the free ends of which are located within the line of the outside of a projection on the stamp in close proximity to the ends of the levers and above them, and a set screw for tightening the characters of the stamp, substantially as described. 3rd. In a stamp of the character described, the main portion provided with a recess and movable pivotally supported partitions and pivoted levers for dislodging the characters of the stamp and a set screw for tightening the characters of the stamp, substantially as described.

**No. 42,195. Garment Support. (Support pour vêtements.)**

Leonard Guy Abbott, Syracuse, New York; William Wallace Guilford, West Medford, and Webster Fletcher, Putnam, Danvers, both of Massachusetts, all of U.S.A., 8th March, 1893; 6 years.

*Claim.*—The herein described garment suspending loop, consisting of a chain, a headed two-pronged staple connected to each end of the chain, the prongs of said staple being adapted to pass through a single opening in the material, and a concavo-convex anchor having a hole in the centre to receive both staple prongs, and openings at or near its edge diametrically opposite each other, the concavo side of the anchor being turned toward the material, the prongs of the staple being extended through the centre hole over the outside of the anchor in opposite directions and returned to the interior of the anchor through said openings the extremities of the prongs being concealed therein, substantially as described.

**No. 42,196. Hanger for Eaves Troughs.**

(*Pendant pour larmiers de toit.*)

Martin Bingham and Edward Rand, both of Shelton, Washington, U.S.A., 8th March, 1893; 6 years.

*Claim.*—1st. In an eaves trough hanger, the combination, with a stationary support, of a trough holder adjustably connected therewith and provided with a down turned hook at its inner end for engaging the adjacent edge of the trough, and with a T-shaped stud at its outer end and at right angles thereto, and a securing plate or strip provided at its outer end with a longitudinally disposed elongated slot adapted to receive said stud and be locked thereon in the manner described, the free portion of said plate being adapted to be bent over and secured upon the interior of the trough, substantially as set forth. 2nd. In an eaves trough hanger, the combination, with a trough holder provided at one end with an inwardly and downwardly turned hook, and at the opposite end with an outwardly projecting T-shaped stud disposed at right angles to the holder, of a flat plate provided at one end with a longitudinally disposed elongated slot for the reception of said stud, said plate being adapted to be bent down over the trough and secured thereto, substantially as set forth. 3rd. In an eaves trough hanger, the combination, with a vertically disposed stationary support provided with a longitudinal slot and a vertically adjustable trough holder provided with a registering slot, of a locking key, comprising a thumb piece, a tenon projecting therefrom, and a cross piece beveled, said cross piece being adapted to be inserted through said slots, and when turned bind the holder to the support, substantially as set forth. 4th. In an eaves trough hanger, the combination,

with a stationary support provided with a longitudinal slot and with a corresponding series of serrations or teeth at one side thereof, of an adjustable trough holder provided with a co-incident slot and series of serrations or teeth and with a shoulder adapted to bear against the adjacent face of the support and means for securing the holder to the support, substantially as set forth. 5th. In an eaves trough hanger, the combination, with a stationary support provided with a longitudinally disposed slot and an adjustable trough holder provided with means for securing the trough and with an elongated slot registering with the slot in the support, of a key provided with a T-head having cam-faces, said key being adapted to engage said slot to bind the holder to the support, substantially as set forth.

**No. 42,197. Signal for Railways.**

(*Signal de chemin de fer.*)

Frederick Alonzo Humpidge, Henry Hollingshead, both of Dutton, John Walter Humpidge and Edgar Clifford Humpidge, both of London, all of Ontario, Canada, 8th March, 1893; 6 years.

*Claim.*—1st. In a gravity pneumatic signaling apparatus for railways, the elevating of a weight connected to signal arms to change their position by a leverage mechanism actuated by the weight of a train, substantially as and for the purpose hereinbefore set forth. 2nd. In a railway signal, an artificial current of air produced by an air compressor to expand an expander to remove the support from the gravity weight to change the position of signal arms operated by lever mechanism actuated by the weight of a railway train, substantially as and for the purpose hereinbefore set forth. 3rd. In a railway signal the elevating of a weight connected to signal arms to change their position, operated by lever mechanism in combination with the artificial action of air produced by a compressor to expand, an expander to allow weights to drop and change arms to former position, substantially as and for the purpose hereinbefore set forth. 4th. The combination of a gravity bar F its projecting bar I, of a rod L, of a lever J, of a rod M, and hollow tube N<sup>1</sup>, together with lantern O<sup>1</sup> which is fully described and claimed in letters patent No. 36,501, all arranged and operated substantially as shown and specified and for the purpose before set forth. 5th. The combination of an expander b, of a trigger lever F<sup>1</sup>, of a quadrant W, of a hammer lever n, of a bell n<sup>2</sup>, substantially as and for the purpose hereinbefore set forth. 6th. The combination of a gravity bar F, of a lever B, of a crank rod g, of a rod h, of an angle lever i, of a rod c<sup>2</sup>, substantially as and for the purpose hereinbefore set forth. 7th. The combination of lever D, gravity bar F, crank rod support g<sup>2</sup>, of the crank g, of the rod h which is connected to air brake throttle l and steam throttle m, substantially as and for the purpose hereinbefore set forth. 8th. The combination of an air compressor of pipes having therein check valves, of an expander, of a rod a<sup>2</sup>, with jam nuts thereon connected to whistle throttle A<sup>2</sup>, substantially as and for the purpose hereinbefore set forth. 9th. In a railway signal the combination and application of an air compressor having a case Z, cylinder W, piston rod, Y with valves e<sup>2</sup> and f<sup>2</sup>, substantially as and for the purpose hereinbefore set forth. 10th. In a railway signal the combination of a cylinder, of an air tight lining C<sup>2</sup>, a piston and rod substantially as and for the purpose hereinbefore set forth. 11th. The combination of a lever shaft C<sup>2</sup> of a lever D<sup>2</sup>, of a lever d, of a roller E<sup>2</sup>, of a clutch C<sup>2</sup>, of a spring G<sup>2</sup>, substantially as and for the purpose hereinbefore set forth.

**No. 42,198. Machines for Scalping and Bolting Flour.**

(*Appareil à gravitation et blutoir.*)

John Metherell, Murfreesboro', Louis H. Ganier, jr., Nashville, and Charles O. Thomas, sr., Murfreesboro', all of Tennessee, U.S.A., 8th March, 1893; 6 years.

*Claim.* 1st. The combination, with a bolting reel, of driving sheaves engaging the head and adapted to revolve the reel, mechanism for rotating said driving sheaves and adjustable sheaves engaging the tail, as specified. 2nd. The combination substantially as described of a series of reels arranged one within the other, independent driving sheaves engaging each of said reels, a drive shaft and connections between the said drive shaft and the drive sheaves of the several reels, all substantially as set forth. 3rd. The combination substantially as described of a bolting reel, a conveyer casing extended within and from end to end of the reel, and having inlets at its ends and a discharge between its ends within the reel, and a conveyer in the said casing, substantially as set forth. 4th. The combination, with a bolting reel, of a casing within the reel provided with inlets and valved outlets, and a screw conveyer journaled in said casing, substantially as and for the purpose specified. 5th. The combination, with a bolting reel, and a casing supported with the same, projected beyond the head and tail and provided with an inlet at its ends and valved outlets, of a right and left screw conveyer journaled in said casing, as and for the purpose specified. 5th. The combination, with the head and tail plates of a bolting reel, of a conveyer centrally located within the reel and provided with inlet and outlet apertures, and a series of ribs, essentially diamond-shaped in cross section, arranged longitudinally around the conveyer between it and the bolting cloth of the reel, substantially as shown and described. 7th. The combination, with the head and tail plates of a reel of a series of circularly arranged ribs longitudinally located within the reel, some of which are

diamond-shaped in cross section and the others trough like, presenting essentially a broken diamond-shape in cross section, substantially as shown and described. 8th. The combination, with the head and tail plates of a reel of a series of circularly arranged ribs longitudinally located within the reel, some of which are diamond-shaped in cross section and the others trough like, representing essentially a broken diamond in cross section, rods projected through the diamond-shaped ribs and the head and tail plates, securing the latter at suitable distances apart, blocks attached within the broken diamond-shaped ribs at their ends, and bolts passed through said blocks into the head and tail plates of the reel, substantially as shown and described, and for the purpose specified. 9th. The combination, substantially as described, of a bolting reel, a conveyer casing within the same having inlets at its ends and a discharge intermediate its ends and a right and left hand screw conveyer operating in the said casing, substantially as set forth. 10th. An improved machine for scalping and bolting flour, comprising a plurality of bolting reels arranged one within the other and supported to revolve independently, whereby said reels may be revolved at different speeds and in opposite directions, and mechanism for revolving the adjacent ones of such reels in opposite directions whereby the stock will be bolted from one reel upon a clear portion of the next outer reel, that is to say upon a portion of the cloth of said outer reel not covered by the stock therein, all substantially as and for the purposes set forth. 11th. An improved machine, for scalping and bolting flour, comprising a plurality of reels arranged one within the other, and adapted to be revolved independently whereby the reels may be revolved independently and in opposite directions, and the clothing of said reels being of different degrees of fineness, the clothing grading from a coarse mesh on the centre reel, to a fine finishing mesh on the outer reel, substantially as set forth. 12th. An improved machine for scalping and bolting flour, comprising a series of independent reels arranged one within the other, and supports for said reels, the supports for each reel being independent of those of the others, whereby the reels are supported independently and may be revolved independently of each other, all substantially as set forth. 13th. In a machine, substantially as described, the combination of the series of reels arranged one within the other and made of different lengths, the centre reel being the longest and the outer reel the shortest, sheaves arranged to engage and support such reels, the sheaves supporting each reel being independent of those supporting the others, the main frame or casing and the supports for the sheaves, all substantially as and for the purposes set forth. 14th. The combination of a series of reels supported one within the other, a pair of driving sheaves for each reel arranged to engage such reel upon opposite sides of a line drawn vertically through its axis, gear wheels connected with said sheaves and arranged in trains on opposite sides of the centre of the machine, and a drive gear meshing the inner gears of each side train, substantially as set forth.

#### No. 42,199. Middlings Purifier.

(Machine à épurer les graux.)

Edwin Burr Whitmore and Lewis Emery, jr., both of Three Rivers, Michigan, U.S.A., 8th March, 1893; 6 years.

*Claim.*—In a middlings purifier, a vibrating shoe provided with two oblique series of spaced inclined cant boards, one series being in advance of the other, and the boards of which series are provided at their upper edges with middlings arresters extending downwardly at right angles thereto and located directly opposite and also at right angles to the boards of the rear series, substantially as and for the purposes set forth. 2nd. In a middlings purifier, a vibrating shoe, a fan, a dust chamber, a conveyer, a spout leading from the dust chamber to the conveyer, and two series of slats arranged one on each side of an air channel leading from the fan, substantially as and for the purpose set forth. 3rd. In a middlings purifier, a vibrating shoe, a fan, an air channel leading from the fan, a divider in front of the mouth of the fan, and a series of dust arresters on each side of the channel, substantially as and for the purpose set forth. 4th. In a middlings purifier, the combination of the cant boards, a fan adapted to draw the air therethrough and deliver it into a dust chamber, and a damper for connecting the dust chamber with the suction of the fan, substantially as described. 5th. In a middlings purifier, the combination of the separate devices, a fan having a suction channel connecting with the separating chamber, and a discharge connecting into a dust chamber, and a damper controlling a connection from the discharge side of the fan to its suction, substantially as described. 6th. In a middlings purifier, the combination with the separating devices, a channel leading from and returning thereto, a fan in said channel adapted to circulate the air, and a damper controlling a short circuit, including the fan and excluding the separating devices, substantially as described.

#### No. 42,200. Nut Lock. (Arrête-écrou.)

John Barlow and Robert Arthur Hall, both of Nottingham, England, 9th March, 1893; 6 years.

*Claim.*—A lock nut consisting of a longitudinally split bush threaded internally and of tapered external form, and a nut body formed with a tapered hole to fit the tapered exterior of the screw-threaded bush, substantially as herein shown and described and for the purpose stated.

#### 42,201. Feed Regulator for Grain Hoppers.

(Régulateur de l'alimentation des tremis à grain.)

George Swayne, Dalston, London, N.E., England, 9th March, 1893; 6 years.

*Claim.*—1st. In an improved device for regulating the feed of grain machines and the like, the apparatus or mechanism consisting of the several parts, constructed, combined and operating substantially as herein set forth, and for the purposes specified and shown by the accompanying drawing. 2nd. In an improved device for regulating the feed of grain machines and the like, the construction and use of a hopper or shoot A, A', and A'', with fixed partition B, the spindle I, carrying pulleys b and c, or handle in lieu thereof, and pinion e, the lever d, the fulcrum upon I, and linked by f, to a weighted lever g, upon a spindle J, carrying a shutter K'. The spindle L, carrying a toothed wheel M, and a cam k, the lever m, roller a, guide stay E, the rod F, and bracket G, upon a sliding shutter H, working in guides H', on A, A', substantially as and for the purposes herein described and shown by the drawing.

#### No. 42,202. Power Transmitter.

(Transmetteur de mouvement.)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In power transmitting apparatus, an epicyclic or differential train having belt connections between its wheels, substantially as set forth. 2nd. In power transmitting apparatus, an epicyclic or differential train having, in combination, with main belt wheels rotating in parallel planes and turning loosely upon a shaft, intermediate belt wheels mounted on an arm fixed to the shaft and placed tangential to the main wheels, and an endless belt passing around the main wheels and the intermediate wheels, substantially as set forth. 3rd. In a power transmitting apparatus, an epicyclic or differential train having belt connections between its wheels, and provided with additional intermediate wheels, so as to permit the main wheels of the train to rotate in the same direction, substantially as set forth. 4th. In power transmitting apparatus an epicyclic or differential train having, in combination, with main belt wheels rotating in parallel planes and turning loosely upon a shaft, two sets of intermediate belt wheels fixed to arms projecting in opposite directions from the shaft, such intermediate wheels being placed tangential to the main wheels, and an endless belt passing around such main and intermediate wheels, substantially as set forth. 5th. In power transmitting apparatus, involving an epicyclic or differential train having belt connections between the wheels, the combination of a plurality of belts and corresponding sets of wheels, substantially as set forth. 6th. In power transmitting apparatus, involving an epicyclic or differential train having belt connections between the wheels, the combination of a plurality of belts and corresponding sets of wheels, the wheels of the two or more sets being of different sizes, with the smaller wheels located within the larger wheels, substantially as set forth. 7th. In a power transmitting apparatus, the combination of a driven shaft with an epicyclic or differential train having belt connected wheels mounted thereon, a driving motor, connections from the motor to the two sides of the epicyclic train, and means for varying one of such connections, substantially as set forth. 8th. In power transmitting apparatus, the combination of a driven shaft, with an epicyclic or differential train having belt connected wheels mounted thereon, a driving motor, connections from the motor to the two sides of the epicyclic train, one of such connections being formed by expanding pulleys, and means for adjusting such pulleys simultaneously in opposite directions, substantially as set forth. 9th. In power transmitting apparatus, the combination of a driven shaft, with an epicyclic or differential train mounted thereon, and having an additional intermediate element in the connection between the main wheels of the train, a driving motor, similar connections from the motor to the main wheels of the epicyclic train, so as to drive such main wheels in the same direction, and means for varying one of such connections, substantially as set forth. 10th. In power transmitting apparatus, the combination of a driven shaft, with an epicyclic or differential train mounted thereon, and having belt connected wheels and an additional intermediate element in the connection between the main wheels of the train, a driving motor, similar connections from the motor to the main wheels of the epicyclic train, so as to drive such main wheels in the same direction, and means for varying one of such connections, substantially as set forth.

#### No. 42,203. Method of Controlling Electric Lights.

(Méthode de contrôler la lumière électrique.)

Albert Schrist, Denver, Colorado, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. The herein described method of controlling electric lights, which consists in making and breaking the electric light circuit by the use of two magnets alternately excited by closing a local battery circuit in which the magnets lie, substantially as described. 2nd. A method of controlling electric lights, consisting in making and breaking the electric light circuit by the use of one or more electro-magnets excited by a local battery current, as set forth.

**No. 42,204. Vaginal Syringe. (Seringue vaginale.)**

Joshua Meurne Wardell, Cadillac, Michigan, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In a vaginal syringe, a nozzle constructed with an inlet duct and with a discharge passage, said nozzle at its forward end provided with a series of jet orifices communicating with the inlet duct, substantially as described. 2nd. In a vaginal syringe, a nozzle constructed with an inlet duct and with a discharge passage, said nozzle at its forward end provided with a series of outwardly flaring jet orifices, arranged in a circle about the adjacent end of the discharge passage, to emit a funnel shaped spray, substantially as described. 3rd. In a vaginal syringe, a nozzle constructed with an inlet duct, a cylindrical passage *a*<sup>1</sup>, communicating with said duct, and a discharge passage, said nozzle at its forward end provided with outwardly flaring jet orifices communicating with the passage *a*<sup>1</sup>, and arranged annularly about the adjacent end of said discharge passage, substantially as described. 4th. In a vaginal syringe, a nozzle constructed with an inlet duct and with a discharge passage, and tubular projecting stems communicating respectively with said inlet duct and with said discharge passage, said nozzle provided with outwardly flaring jet orifices communicating with the inlet duct, to afford a funnel shaped spray, substantially as described. 5th. In a vaginal syringe, a nozzle constructed with an inlet duct and a discharge passage, means of forcing liquid through said duct, and a waste pipe connected with the discharge passage, said nozzle provided with outwardly flaring jet orifices communicating said duct to afford a funnel shaped spray, substantially as described. 6th. In a vaginal syringe, a nozzle constructed with an inlet duct, with a discharge passage, a tubular tip located at the forward end of the nozzle, an annular passage located about the tip between the tip and the adjacent portion of the nozzle, said tip and adjacent portion of the nozzle provided at their outer ends with intermediate outwardly flaring jet orifices to afford a funnel shaped spray, substantially as described.

**No. 42,205. Trimming Machine. (Machine à recéper.)**

William Ross Fox, Grand Rapids, Michigan, U.S.A., 9th March, 1893; 6 years.

*Claim.* 1st. In combination, the bed or frame, the knife and carriage with operating means therefor, the swinging gage arranged on the bed and the pivotal connection between the gage and the frame in the plane of the cutting line and below the same, substantially as described. 2nd. In combination, the bed or frame, the knife and carriage with operating means therefor, the swinging gage and the pivotal connection between the gage and bed comprising the arm connected to the gage extending under the frame and pivoted at its front end thereto in the plane of the cutting line, substantially as described. 3rd. In combination, the slotted frame, the knife and carriage, the gage and the pivotal connection extending therefrom through the slot in the frame below the line of cut, substantially as described. 4th. In combination, the slotted frame, the knife carriage and knife, the gage, the pivotal connection extending therefrom through the slot to the under side of the frame and the clamp for the gage extending through the slot, substantially as described. 5th. In combination, the slotted frame, the knife and carriage, the gage, the forked bracket extending from its under side through the slot to the lower side of the frame to which it is pivoted and the clamp for the gage extending between the forks of the bracket, substantially as described. 6th. In combination, the frame, the knife carriage and knife, the swinging gage with means for clamping the same in place and the setting stop carried by the gage to set the same accurately in proper position as it is swung from side to side, substantially as described. 7th. In combination, the frame, the knife carriage and knife, the swinging gage and the vertically movable pin carried by the gage for stopping the same in accurate position, substantially as described. 8th. In combination, the frame, the knife carriage and knife, the gage and the vertically movable stop pin on the gage adapted to enter the holes formed in the bed, substantially as described. 9th. In combination, the carriage, the knife and the frame comprising the bed and the vertical portion in rear of the carriage, the swinging gage arranged on the bed in front of the carriage and the wings or shields arranged on the frame in rear of the carriage and on the opposite side thereof from the swinging gage, substantially as described. 10th. In combination, the gage, the bed and the stop carried by the gage and adjustable thereon, substantially as described. 11th. In combination, the gage, the bed, the laterally adjustable boss carried by the gage, and the stop carried by the boss, substantially as described. 12th. In combination, the gage having the opening, the boss of smaller diameter adapted to said opening, and having a flange with openings, the screws passing through said openings and of smaller diameter than said openings and the stop passing through the boss to engage the table or bed, substantially as described.

**No. 42,206. Corset. (Corset.)**

Thomas Luther Lackie Lewis, Toronto, Ontario, Canada, 9th March, 1893; 6 years.

*Claim.*—1st. As a new article of manufacture, the corset or bodice adapted to humane environment, provided with a series of pockets, and a series of stays or steels of highly tempered spring steel ribbon, magnetized, plated with non-corrosive metal, and polished, inserted

therein, substantially as described. 2nd. The combination with a corset or bodice adapted to humane environment, and provided with a series of pockets, and a series of stays or steels of highly tempered spring steel ribbon, magnetized, plated with non-corrosive metal and highly polished, inserted therein, of an opening *c*, made to one side of the top of the pocket, as and for the purpose specified. 3rd. The combination with a corset or bodice adapted to humane environment, and provided with a series of pockets, and a series of stays or steels of highly tempered spring metal ribbon, magnetized, plated with non-corrosive metal and highly polished, inserted therein, of an opening *c*, made to one side of the top of the pocket, and cross braces *d*, as and for the purpose specified.

**No. 42,207. Bank or Check Book.**

(*Livret de banque et chèque.*)

Selden Rich Hopkins, New York, State of New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. A bank check book, comprising a certificate of a deposit, and a number of blank certified checks, each good for a specified amount indicated thereon, the sum total of said checks when drawn for their full limit values being equal to the amount of the deposit, substantially as described. 2nd. A bank check book, comprising a certificate of deposit, a number of blank certified checks, each good for a specified amount indicated thereon, the sum total of said checks when drawn for their full limit values being equal to the amount of the deposit, and an agreement between the issuing party and the depositor, substantially as described. 3rd. A bank check book, comprising a certificate of deposit, a number of blank certified checks, each good for a specified amount indicated thereon, the sum total of said checks when drawn for their full limit values being equal to the amount of the deposit, an agreement between the issuing party and the depositor, and a description of the depositor, substantially as described.

**No. 42,208. Type Setter. (Machine à composer.)**

John Loudon McMillan, Ileon, New York, U. S. A., 9th March, 1893; 6 years.

*Claim.*—1st. In a type setting machine, the combination of cases or reservoirs for containing one class of type, cases or reservoirs for containing another class of type, and releasing or ejecting mechanism common to both sets of cases, adapted and arranged to act in connection with either set of cases at will. 2nd. In a type setting machine, the combination of a plurality of sets of cases or reservoirs for containing types, releasing or ejecting devices for controlling the exit of types from said cases, and a key board having finger keys adapted to individually actuate a plurality of releasing or ejecting devices, one at a time. 3rd. In combination, with two or more sets of type cases or reservoirs, and with releasing or ejecting devices adapted to control the exit of the types from the cases, a shift key adapted and arranged to vary the position of the cases and ejecting devices one in relation to the other, and thereby to cause said ejecting devices to deliver type from one or another set of cases at will. 4th. In combination, with two or more sets of type cases or reservoirs, and with ejecting fingers to deliver types therefrom, a shiftable frame or carriage provided with mechanism or actuating the ejecting fingers, and a shifting device connected with said carriage and serving to move the same, whereby the mechanism for actuating the ejecting fingers is caused to engage with and actuate the fingers of one or another set of cases at will. 5th. In combination, with type reservoirs or cases, and with fingers *E*, carriage *S*, actuating rods mounted in said carriage, and provided with stems or studs *x*, rock shaft *V*, connected with the carriage, and a shift key *X*, connected with and serving to turn said rock shaft. 6th. In combination, with type cases or reservoirs, and with fingers controlling the exit of types therefrom, a shifting carriage carrying mechanism for actuating the ejecting devices, a spring for moving said carriage in one direction, and a shift key connected with and serving to move the carriage in the opposite direction. 7th. In combination, with type reservoirs or cases, and with fingers controlling the exit of types therefrom, a carriage movable relatively to said cases, actuating mechanism mounted in said carriage and adapted to move said controlling fingers, a spring for moving the carriage in one direction, a shift key connected with and serving to limit the movement of the carriage. 8th. In a type setting machine, the combination, with a suitable supporting frame, and a series of frames or carriers being movable toward and from one another, whereby their respective type cases or reservoirs may be exposed to a view. 9th. In a type setting machine, the combination, of a supporting frame provided with a post or standard, and a series of carriers or frames provided with type cases or reservoirs and hinged to swing about said post, substantially as and for the purpose set forth. 10th. In a type setting machine, the combination of a main frame, a series of type reservoir carriers mounted upon said frame and movable toward and from one another, and retaining devices for holding said carriers in their normal positions. 11th. In a type setting machine, the combination with a supporting frame provided with a series of seats or notches, of a series of carriers provided with type reservoirs or cases with lugs to enter the seats or notches, said carriers being movable substantially as described and shown, to carry the lugs into and out of

the seats or notches. 12th. In a type setting machine, the combination with a main supporting post or standard, a series of carriers provided with type reservoirs and connected with the supporting post by hinges of varying lengths, whereby they are adapted to fold one behind another, as described and shown. 13th. In a type setting machine, the combination of a supporting post or standard, a series of frames or carriers provided with ears to encircle said standard, and a cam working beneath said ears and adapted to lift them vertically and thereby to lift the frames or carriers. 14th. The combination in a type setting machine, of a main frame provided with an upright post or standard  $A^4$  and recessed plate  $A^5$ ; carriers or frames  $B$  having ears  $i$  encircling post or standard  $A^4$  and provided with lugs  $l$  to enter the recesses  $j$  of plate  $A^5$ , and cam lever  $F$  located between the plate  $A^5$  of the main frame  $A$  and the ears  $i$  of carriers  $B$ , and serving to lift and hold up said carriers. 15th. In combination with swinging carriers  $B$  provided with lugs  $l$  of plate  $A^5$ , provided with seats  $j$  and with stop  $k$ . 16th. In a type setting machine, the combination of two type channels or reservoirs, and a finger common to both of said channels and serving to deliver type from either at will. 17th. In a type setting machine, the combination with two type channels or reservoirs, of an intermediate finger, movable at will toward either channel and adapted to deliver a type therefrom. 18th. In a type setting machine, the combination of a block  $B^1$  provided with channels  $a$ , and intermediate partitions  $d$  and  $e$ , a type rest or plate  $D$  beneath said block provided with openings  $c$  and finger  $E$  arranged beneath the partitions  $c$  and movable laterally in both directions. 19th. In combination with block or body  $B^1$  having channels  $a$  and partitions  $d$  and  $e$ , a type rest or support beneath said partitions, ejecting fingers located between the body  $B^1$  and type rest, and depending lips or flanges  $f$  formed upon one side of partitions  $d$  next to channels containing thin type, substantially as and for the purpose set forth. 20th. In combination with block or body  $B^1$  having channels  $a$  and intermediate partitions  $d$  and  $e$ , type rest or plate  $D$ , beneath said channels, provided with openings  $c$ , directly below the partition  $d$ ; ejecting fingers  $E$ , located beneath the partition  $e$ , and guards  $E^2$ , extending over the opening  $c$ , substantially as and for the purpose set forth. 21st. In combination with a block or body containing type channels  $a$ , a type rest or plate  $D$ , beneath said channels, provided with openings  $c$ ; a series of fingers  $E$ , provided with blocks  $E^1$ , and movable across the openings  $c$ ; and guards  $E^2$ , having each a depending tail extending between two proximate blocks  $E^1$ . 22nd. In combination with a block or body provided with type channels, a type rest or support beneath said channels, provided with type outlets and a series of ejecting fingers located between the mouths of the channels and the type rest, said fingers being provided with blocks  $E^1$ , having overlapping wings  $g$ , whereby they are caused to guide and steady one another in their movements. 23rd. In combination with a type rest or support, having openings for the escape of type, ejecting fingers movable over the same and provided with depressions  $f^2$ , and a block or body above the ejecting fingers provided with type channels  $a$ , and with a rib  $f^1$ , to enter the depressions  $f^2$ , and prevent their types from working backward. 24th. In combination with block  $B^1$ , having channels  $a$ , type rest  $D$ , provided with openings  $c$ , ejecting fingers  $E$ , provided with blocks  $E^1$ , and retaining bar  $D$ , located in rear of the blocks  $E^1$ , and serving to retain them in place. 25th. In a type setting machine, the combination of block  $B^1$ , provided with channels  $a$ , a plate or type rest  $D$ , having openings  $c$ , shorter than the types and laterally offset from or out of line with the channels  $a$ , and a curved wall or guard  $n$ , extending downward below the plate from the rear end of each opening  $c$ , to prevent backward movement of the types prior to their assuming a predetermined angle or inclination. 26th. In combination, with block  $B^1$ , having channels  $a$ , and bevelled lower front corner; type rest or plate  $D$ , having opening  $c$ , laterally offset from the channels  $a$ , of block  $B^1$ , and curved walls or guards  $n$ , extending downward from the rear ends of the openings  $c$ . 27th. In combination, with block or body  $B^1$ , having channels  $a$ , and partition  $d$ , bevelled or cut away at the lower front corner; a type rest  $D$ , located beneath block  $B^1$ , and provided with openings directly through it from its upper to its lower side, said openings being laterally offset from or cut out of line with the channels  $a$ ; chutes  $G$ , located beneath the openings  $c$ , and provided with curved rear walls or guards  $n$ , and ejecting fingers  $E$ , adapted to deliver types laterally from the channels  $a$ , to the opening  $c$ . In combination, with plate or type rest  $D$ , having openings  $c$ , directly through it; chutes  $G$ , beneath said openings, provided with curved walls or guards  $n$ , and gravitating gates  $H$ , located within the chutes immediately below said walls or guards and forming continuations thereof, substantially as and for the purpose set forth. 29th. In a typesetting machine, the combination with channelled block  $B^1$ , of the type rest  $D$ , secured to but detachable from said block, and forming a support for the ejecting devices, substantially as shown and described, whereby the block  $B^1$  may be swung from its normal position without permitting escape of type from its channels, and whereby also access can be had to the ejecting devices when necessary. 30th. In a type setting machine, the combination with the type reservoirs and with ejecting fingers of a series of rods or rock shafts each provided with a stud or stem to engage with and move one of the ejecting fingers when rocked or turned. 31st. In combination, with type reservoirs, ejecting fingers  $E$ , provided with blocks  $E$ , having notches  $h$ , and rocking rods or shafts

provided with studs or stems  $x$ , to enter the notches  $h$ . 32nd. In combination, with type reservoirs, ejecting fingers  $E$ , controlling the delivery of types therefrom, and provided with blocks  $E^1$ , having notches  $h$ , rocking rods or shafts  $S^1$  and  $S^2$ , provided with studs or stems  $x$ , to enter the notches  $h$ , and means for rocking or turning the rods. 33rd. In combination, with type reservoirs, ejecting fingers  $E$ , formed with blocks  $E^1$ , having notches  $h$ , concentric rock shafts  $S^1$  and  $S^2$ , provided with studs  $x$ , and key levers connected with and serving to rock said shafts independently. 34th. In combination, with two type reservoirs, an intermediate finger for controlling the delivery of types therefrom, a rock shaft connected with and serving to move said finger, and to key levers connected with said rock shaft, and serving to rock the same in one or the other direction at will. 35th. In combination, with solid rod or rock shaft  $S^2$ , tubular rod or rock shaft  $S^1$ , encircling rod  $S^1$ , both rods being provided with studs  $x$ , and type delivering devices adapted and arranged to be actuated by said studs. 36th. In combination, with concentric rods or shafts  $S^1$  and  $S^2$ , each provided with two studs  $x$ , and adapted to be rocked in both directions, four type reservoirs arranged one behind another and each provided with ejecting fingers adapted to be actuated by the studs  $x$ , said reservoirs being so located relatively that when one stud of each rod is in engagement with an ejecting finger, the other stud of each rod shall not be in engagement with an ejecting finger. 37th. In combination, with two type cases or reservoirs located one in rear of another, ejecting fingers controlling the delivery of types therefrom, a rock shaft or rod provided with two studs, and movable substantially as set forth, whereby one stud may be carried into engagement with, and the other stud be simultaneously carried out of engagement with the ejecting finger which it controls. 38th. In combination, with four frames or carriers arranged one behind another, and each provided with type reservoirs, fingers for controlling the delivery of types from the reservoirs of each frame, a carriage located and movable beneath the reservoirs, and rock shafts mounted in said frame, and arranged in pairs, one rock shaft within another, each rock shaft being provided with two studs whereby one finger of each rock shaft is caused to engage alternately with the ejecting fingers of two different carriers or frames, as the carriage is moved to one or another position. 39th. In combination, with case or reservoir carriers  $BB$ ,  $BB$ , and with fingers  $E$ , provided with blocks  $E^1$ , carriage  $C$ , movable beneath the carriers  $B$ , rock shafts  $S^1$  and  $S^2$ , mounted in said carriage and provided respectively with two studs  $x$ ,  $x$ , and finger keys  $T^6$ ,  $T^6$ , connected in pairs with each rock shaft and serving to rock the same in either direction at will. 40th. In a type setting machine, the combination with type reservoirs and with suitable delivery devices controlling the discharge of types therefrom, of rock shafts having studs to actuate the delivery devices, and with radial stems, sliding bars provided with lugs to engage with said stems, the pins of the respective bars bearing upon opposite sides of the stems, and springs connected with the sliding bars and serving to hold their lugs in contact with the stems, substantially as and for the purpose set forth. 41st. In a type setting machine, the combination with a rock shaft, one or more provided with a stud  $x$ , and with a stem  $x^1$ , two sliding bars  $T$  and  $T^1$ , provided respectively with lugs  $y$  and  $y^1$ , arranged to bear against opposite sides of the stem  $x^1$ , and springs  $T^3$ , connected with and serving to move the bars longitudinally. 42nd. In combination with the type reservoirs, and with fingers for controlling the exit of types therefrom, a series of rock shafts, each provided with a stud  $x$ , to actuate one of said fingers, and with a stem  $x^1$ , bars  $T$ ,  $T^1$ , provided respectively with lugs or pins  $y$  and  $y^1$ , to bear against opposite sides of the stems  $x^1$ , springs  $T^3$ , connected with said bars, threaded stems connected with said springs, adjusting nuts applied to the threaded stems, and key levers connected with and serving to turn the rock shafts. 43rd. In a type setting machine, the combination with rods or rock shafts  $S^1$ , of sliding bars,  $T$ ,  $T^1$ , springs  $T^3$ , and anti-friction rollers  $y^2$ , for supporting the bars  $T$ ,  $T^1$ . 44th. In a type setting machine, the combination of rock shaft  $S$ , stems  $x^1$ , projecting from said rock shafts, bars  $T$ ,  $T^1$ , provided respectively with pins  $y$  and  $y^1$ , springs  $T^3$ , and adjustable stops  $x^2$ , to determine the movement of the bars  $T$  and  $T^1$ . 45th. In a type setting machine, the combination of type reservoirs, delivery devices for controlling the exit of types therefrom, central rods  $S^2$ , provided with studs  $x$ , to actuate certain of the delivery devices, tubular rods  $S^1$ , encircling the rods  $S^2$ , and provided with studs  $x$ , to actuate certain others of the delivery devices, pivot points or bearings  $S^4$ , for the central rods, and bushings  $S^5$ , interposed between the central rods, and the encircling rods to centre and sustain the latter. 46th. In combination with type reservoirs, and with controlling fingers governing the exit of types therefrom, a series of separable race plates located below the reservoir, one behind another, and converging towards a common point. 47th. In combination with type reservoirs arranged in groups or series, one group behind another, a series of separable race plates also arranged one behind another, said race plates extending from the respective groups or reservoirs towards a common point. 48th. In combination with type reservoirs arranged in groups or series, one group behind another, a series of separable race plates arranged one behind another, and each provided with channels or races converging to a common point, said race plates extending from the respective groups of reservoirs towards a common point. 49th. In combination with type reservoirs arranged in groups or series, one group behind another, and with delivery devices controlling the exit of types therefrom, a

line galley to receive the types, and a series of race plates arranged one behind another and extending from the reservoirs to the line galley, said race plates being adapted to be swung together or moved apart at their lower ends at will. 50th. In combination with the type reservoirs arranged in groups, one group behind another, swinging race plates I. 51st. In combination with a main frame and with type reservoirs arranged in groups, one group behind another, race plates I, provided with lugs, seated in bearings in said frame, race block K, and a locking device for locking the race plates in proper relation to block K. 52nd. In a type setting machine, the combination, with race block K, of a series of separable race plates I, arranged one behind another and converging toward said block, substantially as and for the purpose set forth. 53rd. In a type setting machine, the combination of a series of type reservoirs arranged in groups, one group behind another, a series of race plates arranged one behind another each provided with a central race, and with branch races opening into the central race, and a race block K, having a single raceway coincident with the central races of the several race plates. 54th. In a type setting machine, the combination of a series of race plates I, provided with notches in their lower ends, a race block K, with which the race plates communicate, and guiding ribs *r*, carried by block K, and adapted to fit the notches of the race plates, and to guide said plates to and hold them in position. 55th. In a type setting machine, the combination of race block K, race plates I, and locking device M. 56th. In a type setting machine, the combination, with race block K, and race plates I, of locking lever M, provided with yielding extension M'. 57th. In combination, with race plates I, covering plates pivotally sustained, and adapted to swing toward and from the race plates. 58th. In combination, with race plates I, having supporting lugs or journals, bars *p*, provided with supporting lugs *p'*, and carrying cover plates I. 59th. In combination, with race plates I, arranged one behind another, and with race block K, having raceway *s*, common to all the race plates, pendulous gate O, located at the foot of said raceway. 60th. In combination, with race plates I, arranged one behind another, race block K, provided with raceway *s*, common to all the race plates, gravitating gate O, located at the foot of said raceway, and a stop to limit the play of said gate. 61st. In combination, with race block K, and its gravitating gate O, spring plate P, located directly in front of said gate. 62nd. In combination, with race block K, and its pendulous gate O, a cover plate P, located in front of said gate and adapted to be moved aside to uncover the raceway and the gate. 63rd. In combination, with race block K, having a central raceway, removable plate K', forming one side of said raceway. 64th. In combination, with race block K, line galley Q, provided in an opening in its side to afford access to the bodies of the types. 65th. In a type setting machine, the combination of a series of chutes through which types are delivered, and a series of intermediate race plates extending from the chutes to the race block, a portion of said plates being curved, substantially as described, to cause them to join their respective chutes at approximately the same angle. 66th. In a type setting machine, the combination, with a line galley, of a reciprocating bunter, and an actuating crank therefor provided with an adjustable crank pin, whereby the movement of the bunter may be varied.

**No. 42,209. Hat Case. (Boîte à chapeau.)**

Albert Grouleff, Grayling, Michigan, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In a hat case, the combination with the top and bottom, of a connecting frame composed of two series of separated strips radially arranged, and outer semi-cylindrical casing on the outer series of strips, a ring located in a groove between the strips in the top and bottom and a semi-cylindrical door secured to and connecting the rings, substantially as described. 2nd. In a hat case, the combination with the top and bottom of a vertical frame connecting the two, consisting of separated radially arranged strips, a semi-cylindrical casing on the outer strip and a semi-cylindrical door slidingly engaging between the strips, a flexible felt strip on the inner face of the outer strip bearing against the outer face of the door and adapted to make a dust proof joint between the two and a flexible strip on the door, substantially as described. 3rd. In a hat case, the combination with the top and bottom, of a connecting frame composed of two series of separated strips radially arranged, a semi-cylindrical door between the strips, an outer semi-cylindrical casing on the outer series of strips, and cross frames secured to the inner strips, substantially as described.

**No. 42,210. Hanger for Electric Lights. (Pendant pour lumières électriques.)**

Herbert L. Holt, Ellsworth, Maine, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In an electric light hanger, the combination of a revolvable socket, adjusting disks, one of which is pivotally suspended from said socket, and telescopic tubes connected with the other of said disks and adapted to support the electric lamp and enclose the electric cords passing through said socket and adjusting disks, substantially as set forth. 2nd. In an electric light hanger, the combination of a supporting socket, adjusting disks, one of which is pivotally suspended from said socket and receiving and accommodating the electric cord therefrom, and telescopic lamp supporting

tubes connected with the other of said disks and receiving and enclosing the electric cords passing therethrough, substantially as set forth. 3rd. In an electric light hanger, the combination, with a supporting plate having a series of depending shouldered lugs of a revolvable flanged socket resting and working upon said shouldered lugs, adjusting disks, one of which is pivotally suspended from said socket and receiving the electric cord, and telescopic lamp carrying tubes connected with the other of said disks and enclosing the electric cords passing therethrough, substantially as set forth. 4th. In an electric light hanger, the combination of a revolvable supporting socket, hollow adjusting disks, one of which is pivotally suspended from said socket and receiving the electric cord therefrom, telescopic supporting tubes, one of which is connected at one end to one of the said hollow adjusting disks, and inclosing and carrying the electric cord and similar hollow lamp adjusting disks, one of which is connected to the outer end of another of the telescopic tubes and supporting the electric lamp, substantially as set forth. 5th. In an electric light hanger, the combination of a supporting socket, hollow cup shaped disks having overlapping flanges, a clamping bolt clamping said disks adjustably together, supporting links pivotally connected with said socket and fixedly to one of said disks, telescopic supporting tubes connected with the other of said adjustable disks, and similar hollow cup shaped disks secured to the outermost of said telescopic tubes and adjustably carrying the lamp, the electric cord passing through said socket, the opposite adjusting disks, and intermediate telescopic tubes to the lamp, substantially as set forth. 6th. In an electric light hanger, the combination of a supporting socket, hollow cup shaped disks working adjacent to said socket and provided with overlapping flanges, a clamping bolt adjustably clamping said disks together, elastic washers interposed between the head of said bolt and said disks, supporting arms pivotally connected with said socket and fixedly to one of said disks, telescopic supporting tubes, one of which is connected at one end to the other of said disks, and similar hollow cup shaped disks, one of which receives one end of one of said telescopic tubes and adjustably carrying the lamp, the electric cord passing through said socket and entirely inclosed by the opposite adjusting disks and the intermediate adjusting tubes, substantially as set forth.

**No. 42,211. Gear Cutting Machine.**

(*Mécanisme pour tailler les engrenages.*)

John Sherman, Cleveland, Ohio, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. The combination, with screw E, having enlargement E<sup>1</sup>, of loose clutch sleeves I<sup>1</sup>, I<sup>2</sup>, worm gear E<sup>2</sup>, keyed on to said sleeve I<sup>1</sup>, worm screw shaft H, meshing with said gear E<sup>2</sup>, and cone pulley G<sup>2</sup>, for giving rotary motion to said screw E, the cone pulley G, and the quadrant arm connecting the shafts of the said pulleys, substantially as and for the purpose specified. 2nd. The combination of a screw E, having enlargement E<sup>1</sup>, loose clutch sleeves I<sup>1</sup>, I<sup>2</sup>, gear E<sup>2</sup>, and bevel gear J<sup>2</sup>, keyed on to said sleeves, clutch sleeve I, mounted on said enlargement, and means for shifting said clutch sleeve, worm screw shaft H, and the connected cone pulleys, gear H<sup>2</sup>, gear and short shaft J, and bevel pinion meshing with said bevel gear J<sup>2</sup>, arranged to operate in the manner and for the purpose specified. 3rd. The combination with the feed wheel C<sup>2</sup>, and worm screw shaft P, of shaft Q, each journaled in the bracket M, and connected to revolve in conjunction by gears *g*, *g*, wheel R, mounted on said shaft Q, and having the friction gear wheel R, mounted on the hub of said wheel R, said gear having recesses and springs *s*, *s*, bearing plate *r*, jam nuts *r*<sup>2</sup>, the shaft N, having gearing teeth *n*, meshing with said friction gear R<sup>2</sup>, and pulley D, mounted on said shaft N, all arranged to operate substantially as and for the purpose specified. 4th. The combination, with feed wheel C<sup>2</sup>, and worm shaft P, of shaft Q, each journaled in the bracket M, and connected to revolve in conjunction by gear *g*, *g*, wheel R, mounted on shaft Q, and having a notch, of the stop pawl T, lever U, having hook *u*, and means for operating said lever, hook and pawl, substantially as described, for releasing said wheel R, whereby intermittent revolving movements are imparted to said feed wheel C<sup>2</sup>, through the medium of the friction gear R<sup>2</sup>, substantially as and for the purpose specified.

**No. 42,212. Galvanic Battery.**

(*Batterie galvanique.*)

Walter Ambus Crowders, Chicago, Illinois, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In a galvanic battery, a cell, a porous cup consisting of an earthenware tube open at both ends arranged with its lower end at the bottom of the cell, and a sealing substance around its lower end joining it to the bottom of the cell, whereby its lower end is closed and it is fastened in position in the cell. 2nd. A galvanic battery cell having a layer of wax on its bottom and an open ended tube of porous earthenware with its bottom end sealed in said layer of wax to constitute the porous cup. 3rd. A galvanic battery cell comprising a carbon cup as the negative electrode, an open ended tube of porous earthenware inclosing said cup, and a sealing layer of wax on the bottom of the cell closing the bottom of said earthenware tube and securing the carbon cup in place. 4th. In a galvanic battery, the combination of the battery cell, an up-

right negative electrode, a connection plate of copper coated with mercury arranged within the cell to be submerged in the electrolyte, a circuit conductor leading from said plate, and an upright positive electrode arranged to rest upon and make contact with said plate beneath the surface of the electrolyte, whereby it is connected with said conductor. 5th. In a galvanic battery, the combination of the battery cell, the upright negative electrode, the upright positive electrode, a connection plate of copper coated with mercury arranged at the lower part of the cell beneath and supporting the positive electrode, and a circuit conductor leading from said plate, whereby said plate constitutes a submerged connection for joining the positive electrode to the circuit in such manner that the connection is made by simply placing the electrolyte in the cell so that it shall rest upon said plate, and whereby, also, local action between said plate and the positive electrode is prevented. 6th. The combination, with a galvanic battery cell, of a chamber arranged over the cell to receive the fumes therefrom and containing a substance capable of absorbing or neutralizing said fumes. 7th. The combination, with a galvanic battery cell, of a cover therefor constructed to constitute a chamber in communication with the battery cell, and adapted to contain a substance for neutralizing or absorbing the fumes from the cell. 8th. The combination, with a galvanic battery, of a chamber arranged thereover containing solid metallic salts for absorbing the gases generated in the battery. 9th. The combination, with a galvanic battery, of a chamber arranged thereover containing the salts of iron, copper, or manganese to absorb the gases generated in the battery. 10th. The combination, with a galvanic battery cell, of a cover fitting over said cell constructed with a tray which is formed with perforations communicating with the positive compartment of the battery and adapted to admit fumes from said compartment into the tray, a substance in said tray capable of absorbing or neutralizing said fumes, and a cover for inclosing the top of said tray to confine the fumes therein.

**No. 42,213. Car Wheel. (Roue de chars.)**

Wolcott J. Parmelee, Scranton, Pennsylvania, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In the manufacture of car wheels, the method of forming the tread, which consists in casting a circumferential series of cold hard metallic plates into the body of the wheels any desired distance, so as to chill the wheel to a predetermined depth, and causing the remaining portion that is not embedded in the wheel, to project beyond the same from a corrugated surface, substantially as set forth. 2nd. A car wheel having a series of plates cast in the body thereof to form the tread of the wheel, substantially as set forth. 3rd. A car wheel having a circumferential series of parallel plates cast therein to form the tread, substantially as set forth. 4th. A car wheel having a series of parallel cold metallic plates cast into the body thereof and projecting beyond the same to form the tread, substantially as set forth. 5th. A car wheel, having a circumferential series of parallel diagonally arranged metallic plates cast therein to form the tread, substantially as set forth. 6th. A car wheel having a series of parallel diagonally arranged cold steel plates cast into the body thereof and having spaces between the same to form a notched or corrugated tread for the wheel, substantially as set forth. 7th. A car wheel having a circumferential series of diagonally arranged and regularly spaced steel plates cast into the body thereof and projecting beyond the same in parallel planes with the portion of the cast metal therebetween, to form the tread of the wheel, substantially as set forth.

**No. 42,214. Means of Connecting Dash Boards to Vehicles. (Moyen d'assujétir les garde-crottes aux voitures.)**

Edward Everett, St. Catharines, Ontario, Canada, 9th March, 1893; 6 years.

*Claim.*—A dash board frame covered with the usual material and having recesses formed in its bottom rail to receive the hooked ends of bolts arranged to secure the dash board frame to the body of the vehicle, substantially as and for the purpose specified. 2nd. A dash board frame covered with the usual material and having recesses formed in its bottom rail to receive the hooked ends of bolts arranged to secure the dash board frame to the body of the vehicle, in combination with the feet G, shaped to extend over and butt against the bottom rail A; substantially as and for the purpose specified.

**No. 42,215. Method of Tunnelling and Mining Under Water. (Méthode de miner et tunneler sous l'eau.)**

Alfred William Palmer and Herbert Hines, both of New York, State of New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. An improved method of producing tunnels for mining under water, which consists in sinking a shaft or caisson into the bed of a body of water, and projecting from the shaft or caisson tunnels or headings, substantially as shown and described. 2nd. An improved method of tunnelling or mining under water, which consists in sinking into the bed of a body of water a hollow shaft or caisson, and providing the hollow shaft or caisson with removable sections, and projecting tunnels or headings from the points in the shaft where the removable sections are located, as and for the purpose specified. 3rd. An improved process of tunnelling or mining

under water, which consists in sinking a hollow shaft or caisson in the bed of a stream or other body of water, and projecting therefrom and at different angles tunnels or headings directly from the shaft, as and for the purpose specified. 4th. The combination, with a shaft or caisson sunk in the bed of a stream or other body of water, of a tunnel or heading projected from the shaft or caisson at angles thereto, and at predetermined points between its ends or below its lower extremity, as and for the purpose specified.

**No. 42,216. Combined Commode and Household Receptacle. (Bureau et ustensile de ménage combinés.)**

Charles Hercule Damase Sincennes, of Montreal, Quebec, Canada, 9th March, 1893; 6 years.

*Claim.*—1st. A combined commode and household receptacle, comprising a casing divided into two compartments, one of which has a hinged apertured lid provided with elastic packing around its outside edges for the purpose set forth, and the other compartment provided with a hinged cover carrying a boot block on its under-side, and adapted when opened to fall over the said apertured lid and present such boot block for use, and a hinged lid or cover to close the casing as a whole, carrying an elastic disc or cushion on its under-side adapted to fit and effect a positive air tight closing of the aperture in the before mentioned lid, as set forth. 2nd. The combination of casing A, suitably partitioned apertured top section C', with elastic packing around its outer edges, top section D', with boot block D'', carried on the underside of same, and main hinged cover L, carrying an elastic packing adapted to fit and effectively close the aperture in said top section C', as shown and described.

**No. 42,217. Pole for Vehicles. (Timon de voiture.)**

William Luther Pike, Groton, New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. The herein described bracket for a vehicle pole, comprising an arm A, means for securing the pole at one end to the cross bar B, at its opposite end, and having its lower face reinforced. 2nd. The herein described bracket for a vehicle pole, having its forward end provided with a jaw for receiving the pole, its rear end provided with longitudinal and lateral supports, and its lower face reinforced. 3rd. The herein described bracket for a vehicle pole, having its forward end adapted to receive the pole, its rear end adapted to receive the cross bar B, and a brace secured at or near the respective ends of the bracket, and a bridge interposed, substantially centrally between the brace and body of the bracket, substantially as described for the purposes set forth.

**No. 42,218. Automatic Safety Stop for Engine Governors. (Arrêt automatique de sûreté pour gouverneur de machines à vapeur.)**

James Barclay, Sioux City, Iowa, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In an automatic safety stop for engine governors, the combination with a governor of means controlled by the motive agent for supporting the governor when the motive agent is cut off, substantially as set forth. 2nd. In an automatic safety stop for engine governors, the combination with a governor, of a support for the governor when the motive agent is cut off, said support being controlled by the motive agent and adapted to be moved from under the governor while the engine is running, substantially as described. 3rd. An automatic safety stop for engine governors, provided with a stop lever controlled by the motive agent of the engine, and adapted to support the governor when the motive agent is shut off, substantially as shown and described. 4th. An automatic safety stop for automatic governors, comprising a lever adapted to support the governor in a normal position, and a spring tube connected with the said lever and connected with the steam supply for the engine, substantially as shown and described. 5th. An automatic safety stop for engine governors, comprising a lever adapted to support the governor in a normal position, a link connected with an extension of the said lever, a spring tube closed at one end and connected at this closed end with the said link, and a pipe connected with the said tube and also connected with the steam supply, substantially as shown and described.

**No. 42,219. Bleaching Compound.**

(Composé pour blanchir.)

William B. Brittingham, New York, State of New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—A bleacher comprising essentially the tungstate of an alkali and chlorine.

**No. 42,220. Safety Car. (Char de sûreté.)**

Jefferson A. Beaumont, Woodville, Mississippi, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In a safety car, a movable section having inclined edges, a series of movable bolts actuated by a crank in the upper part of the section, and tongues in the lower part, substantially as described. 2nd. In a safety car, having a series of openings therein formed with outwardly inclined walls, removable sections fitted in said openings formed with inclined edges, and sliding bolts for re-

taining the sections in place and releasing them when drawn back, and a crank for operating said bolts simultaneously, substantially as described.

### No. 42,221. Fire Extinguisher.

(*Extincteur d'incendie.*)

Robert Wilkinson Newton, Providence, Rhode Island, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In an automatic fire extinguisher, the combination with the nozzle and the valve seat surrounding the same, of a valve of inferior metal covered with a sheet of precious metal adapted to protect the valve and the valve seat against corrosion, as described. 2nd. In an automatic fire extinguisher, the combination with the nozzle and the valve seat surrounding the same, of the valve body 9, provided with a recess at its upper surface, and the valve disk 10, formed of a sheet of inferior metal covered with a sheet of precious metal, as described. 3rd. In an automatic fire extinguisher, the combination with the nozzle 2, and valve seat 4, of the valve body 9, provided with the projections 11, on opposite sides thereof, the valve disk 10, formed of a sheet of inferior metal covered with precious metal and the devices for securing the valve to its seat, as described. 4th. The combination, as herein set forth, in an automatic fire extinguisher, with the nozzle 2, the valve seat 4, and the valve, of a spring interposed between the valve body and the thrust arms 12, adapted to be compressed so as to bear solidly on the valve body and hold the same against internal pressure in the normal condition and follow, by its own resiliency, the thrust arms during the weakening of the solder by heat, while holding the valve to its seat, as described. 5th. In an automatic fire extinguisher, the combination with the discharge nozzle and a valve adapted to be released by the action of heat, of a distributor consisting in a central truncated cone, the base of which is surrounded by a perforated annular groove and a perforated outwardly dished annular rim, adapted to distribute the water, as described. 6th. In an automatic fire extinguisher, in combination, the nozzle 2, the valve seat 4, a valve for closing the outlet, a spring bearing on the valve, the thrust arms 12 bearing on the spring and holding the same in the normal condition, metal to metal, to form a rigid thrust, the thrust block 15, the thrust plates 16, secured to the thrust block by solder, means, substantially as described, for strengthening the solder-joint, the yoke 5, and the screw threaded thrust pin, the whole adapted to hold the valve to its seat rigidly and permit the solder joint to yield while the valve is held to its seat, as described. 7th. In an automatic fire extinguisher, the combination with the nozzle 2, the valve seat 4, the yoke 5, the valve and the thrust block 15, provided with the thrust arms 12, and thrust plates 16, of the perforated and screw threaded cone 6, the screw threaded thrust pin 7, and the deflector 8, screw threaded and adapted to lock the thrust pin in the required position, as described. 8th. In a thrust block adapted to hold the valve of an automatic fire extinguisher to its seat and release the same by the action of heat on solder, of thrust plates secured to the thrust block by solder, and the means herein described to strengthen the solder joint, as described. 9th. In an automatic fire extinguisher, the combination with the outlet, a valve for closing the outlet, and a frame supporting a thrust pin, of a device, intermediate the thrust pin and the valve, consisting of two oppositely inclined arms, a thrust block and plates secured by solder adapted to hold the valve in place until one or both of the holding plates are released by heat, as described. 10th. In an automatic fire extinguisher, the combination, with the outlet and the valve for closing the outlet, of a yoke or frame, having at its lower end a deflector, and a thrust pin adjustable toward and from the outlet, a thrust block, two oppositely inclined arms interposed between the thrust block and the valve, and plates secured to the thrust block by solder, as described. 11th. A device for holding the valve of an automatic fire extinguisher, or sprinkler, against the outlet opening, consisting of a block to one surface of which the ends of two oppositely inclined arms, and two thrust plates are secured by solder fusible at a low temperature, as described. 12th. In an automatic fire extinguisher or sprinkler, the combination, with the outlet, the valve, and a device for holding the valve in place adapted to be released by the action of heat, of a thrust pin adapted to bear against the block, and force the valve to its seat and hold the same, as described. 13th. The combination, with the nipple 19, and the valve seat 20, of the yoke 21, the thrust pin 23, and the deflector 24, of the thrust block 28, the plates 29, secured by solder to the upper surface of the same, the oppositely inclined arms 27, and the valve 25, adapted to hold the valve to its seat until released by heat, as described. 14th. In an automatic fire extinguisher or sprinkler, the combination, with the nipple 19, and the valve seat 20, of the valve 25, provided with the slot 26, the arms 27, having their upper ends resting in the slot 13, the thrust block 28, the plates 24, secured to the thrust block by solder, the yoke 21, the deflector 24, and the thrust pin 23, adapted to force the valve to its seat, as described. 15th. In an automatic fire extinguisher or sprinkler, the combination, with the nipple 19, and the outlet surrounded by a valve seat 7, of the yoke 21, the deflector 24, and the thrust pin 23, provided with the rounded end, supported by the yoke, the thrust block 28, having a cavity on its lower part adapted to receive the rounded end of the thrust pin, the plates 29, secured to the thrust block by solder, the oppositely inclined arms 27, bearing on the thrust block at the spread ends, and in the groove 26, of the valve

25, at the ends placed close together, and the valve 25, the whole adapted to force the valve to its seat, or release the same, and to be released automatically by heat, as described. 16th. In an automatic fire extinguisher or sprinkler, the combination, with the outlet, the valve for closing the outlet, and the device for holding the valve to its seat until released by heat, of the yoke 21, the screw threaded thrust pin 23, and the deflector 24, secured to the thrust pin adapted to force the valve to its seat and release the same by turning the deflector, as described. 17th. In a thrust block adapted to hold the valve of an automatic sprinkler to its seat and release the same by the action of heat or solder, the combination, with a thrust block 15, having an annular groove, the semi-cylindrical thrust plate 16, the lower edges of which are seated in said annular groove, and the valve disc 9, partially contained between the upper edges of the plates 16, 16, and secured thereto by solder, of the struts 12, 12, the lower edges of which bear against the block 15, and the semi-cylindrical plates 16, 16, and the spring 13, interposed between the upper ends of the struts 12, and the lower surface of the valve disc, as described. 18th. An automatic fire extinguisher or sprinkler, covered with bees wax, as and for the purpose herein described. 19th. An automatic fire extinguisher or sprinkler, covered with bees wax, and then coated with lamp black, as described. 20th. An automatic fire extinguisher or sprinkler, having its moving parts and parts adjacent covered with bees wax. 21st. An automatic fire extinguisher or sprinkler, having the parts secured thereto by solder, covered by bees wax and coated with lamp black, as described.

### No. 42,222. Machine for Moulding Pulp.

(*Machine pour mouler la pulpe.*)

Mark L. Deering, Brooklyn, New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. In a pulp moulding machine, the mould having its bottom and inner wall composed of the platform and former, which are moved vertically by suitable power, and its outer wall composed of a stationary head, and a series of sections adapted to rest on the platform surrounding the former and head, and to be moved vertically with the platform and former, combined with means for guiding the sections forward and backward, whereby direct pressure against the top and sides of the former can be produced in a mould with rigid walls, substantially as described. 2nd. In a pulp moulding machine, the combination of the platform, the former fixed thereon, the system of movable sections adapted to rest on the platform, surrounding the former, and to be lifted by the platform, means by which the sections are forced inward when they are lifted, the head extending down between the upper ends of the sections, a covering for the space between these and the head, and mechanism whereby the platform is raised and lowered, substantially as described. 3rd. In a pulp moulding machine, the combination of the platform, the former fixed thereon, the system of movable sections adapted to rest on the platform surrounding the former, a casing or frame inclosing the sections, a series of links or toggles between the sections and frame arranged to force the sections inward when they are lifted, the head extending down between the upper ends of the sections, a covering for the space between these and the head, and mechanism whereby the platform and with it the sections and former are raised and lowered, substantially as described. 4th. In a pulp moulding machine, the combination of a platform, a head above the platform, one of these parts forming the lower and the other the upper end of the mould, and one of them having a vertical movement, the former fixed on the platform, a system of movable sections adapted to surround the former and head, and to rest on the platform, a casing or frame inclosing the sections, a series of links or toggles between the sections and frame, arranged to be actuated by the moving end of the mould and to force the sections inward, a covering as the plate 17, for the space between the upper ends of the sections and the head, and mechanism whereby the end of the mould constructed to move is forced towards the opposite end, substantially as described. 5th. In a pulp moulding machine, the combination of the platform, the former fixed thereon, the system of movable sections adapted to rest on the platform surrounding the former, a casing or frame inclosing the sections, a series of links or toggles between the sections and frame arranged to force the sections inward when they are lifted, the head extending down between the upper end of the sections, the plate 17 arranged to rest on top of the sections, and to close the space between these and the head and to slide on the head, and mechanism whereby the platform, and with it the sections and former are raised and lowered, substantially as described. 6th. In a pulp moulding machine, the combination of the platform, the former fixed thereon, the system of movable sections adapted to rest on the platform, surrounding the former, and to be lifted by the platform, means by which the sections are forced inward when they are lifted, the head extending down between the upper ends of the sections, the plate 17 on the head, provided with a series of radial slots through which pass bolts 29, connecting the plate to the ends of the movable sections, and mechanism whereby the platform is raised and lowered, substantially as described. 7th. In a pulp moulding machine, the combination of an external casing or frame, a series of sections 22, links or toggles connecting these with the frame, a series of sections 25, each inserted between and extending in front of two of the sections 22, and having on the back a projection 26, and arms 28 bearing against the sections 22, guides 27 on the frame adapted to



receive the projections 26, a platform on which the sections rest while the article is being moulded, and mechanism whereby the platform is raised and lowered, substantially as described. 8th. In a pulp moulding machine, the combination of an external casing or frame, a series of sections 22, links 23, pivoted at their inner ends to these sections and at their outer ends to the frame, and adapted to co-act with these as toggles, a series of sections 25 each inserted between and extending in front of two of the sections 22, and having on the back a projection, and arms bearing against the sections 22, guides on the frame for the sections 25, a platform on which all the sections rest while the article is being moulded, a former on the platform, a head above the former, the plate 17 on the head and on top of the sections, and mechanism whereby the platform is raised and lowered, substantially as described. 9th. In a machine for moulding pulp, the combination of a platform, a former on the platform, a system of sections constructed and arranged to inclose the former and to contract around it, mechanism whereby the sections are actuated, and a head provided with a plate having a cutting edge 21 adapted to co-act with the faces of the sections for the purpose of removing the surplus material, substantially as described. 10th. In a machine for moulding pulp, the combination of a platform, a former on the platform, a system of sections constructed and arranged to inclose the former, and to contract around it, mechanism whereby the sections are actuated, and a head provided with a plate having a cutting edge 21, adapted to co-act with the faces of the sections, and a rabbit 20, whereby a chine may be formed, substantially as described. 11th. In a pulp moulding machine, the combination of a platform having an opening or openings 14 therein for the introduction of pulp to the mould, a former on the platform, a system of movable sections adapted to rest on the platform surrounding the former, and to contract about it and to recede from it, a top for the mould, and mechanism whereby the sections are actuated, the openings 14 being so located as to be closed by the sections as they slide inward, substantially as described. 12th. The lifting mechanism consisting of the combination of the large cylinder containing the piston 38, having a cavity 39 therein wider in one direction than in another, the small cylinder 40 connected near its top with the bottom of the large cylinder by a channel 41, the shaft 34, extending through the piston into the cylinder 40, and the block 36, thicker in one direction than in another, corresponding to the cavity 39, and adapted to turn on the shaft as an axis, and to fit into the cavity 39, when it is turned the proper way, and when turned another way to rest on the top of the piston 38, substantially as described.

**No. 42,223. Road Cart. (*Désobligeante.*)**

William McClung, Bowmanville, Ontario, Canada, 9th March, 1893; 6 years.

*Claim.*—1st. The C spring F, in connection with the spring body loop G, the shaft spring A, in connection with the body loop B, the swing seat D, pivoted at E, and running in groove M, at side of body and held in position by spring bolt I, substantially as described and shown. 2nd. In a road cart, the springs F, G, A, and I, the body loop B, the swing seat D, the groove M, the seat end and mud fender, substantially and for the purpose hereinbefore set forth.

**No. 42,224. Aerial Machine. (*Machine aérienne.*)**

Sunter Beauregard Batty, New York, State of New York, U.S.A., 9th March, 1893; 6 years.

*Claim.*—1st. An aerial machine provided with a balloon, supporting a car and having an aluminum shell, and an interior framework for strengthening the shell, substantially as shown and described. 2nd. An aerial machine provided with a balloon shell, and means for withdrawing the air from the said shell, substantially as shown and described. 3rd. An aerial machine provided with a balloon shell, and devices for forming a vacuum in the said shell and subsequently charging the shell with a gas, substantially as shown and described. 4th. An aerial machine provided with a propeller adapted to act as a rudder, substantially as shown and described. 5th. An aerial machine, to which a forward motion is imparted by the firing of explosives within a suitable holder attached to the machine, substantially as shown and described. 6th. An aerial machine provided with a propeller in the shape of a holder, and pellets exploded at suitable intervals in the said holder, substantially as shown and described. 7th. An aerial machine provided with a cup shaped holder mounted to swing sidewise to act as a rudder, substantially as shown and described. 8th. In an aerial machine, a propeller provided with a cup shaped pivoted holder, and means, substantially as described, for imparting a sidewise motion to the said propeller, so that the latter is adapted to act as a rudder for the machine, as set forth. 9th. An aerial machine provided with a propeller, and a feeding device to deliver explosives to the propeller, substantially as shown and described. 10th. An aerial machine provided with a propeller having a holder, a feed pipe secured on the said holder, and containing the explosives, and a delivery mechanism connected with the said pipe and adapted to deliver one explosive at a time from the pipe to the said holder, substantially as shown and described. 11th. An aerial machine provided with a feeding device for the explosives to feed the latter to the propeller, as set forth. 12th. An aerial machine provided with a feed pipe for containing the explosives, and a delivery piston for carrying one explosive at a time from the feed pipe to the propeller, substantially

as shown and described. 13th. An aerial machine, provided with a propeller having a holder, and an explosive receiver mounted yieldingly in the said holder, substantially as shown and described. 14th. An aerial machine provided with an electric circuit adapted to be closed by an explosive, the latter being ignited by the electric current on closing the circuit, substantially as shown and described. 15th. An aerial machine provided with an explosive delivery mechanism actuated by a clock work, substantially as shown and described. 16th. An aerial machine provided with an electric igniting device for firing the explosives, substantially as shown and described. 17th. An aerial machine provided with a propelling mechanism comprising a holder, a feed pipe for containing the explosives and connected with the said holder, an automatic delivery device for discharging the explosives one at a time from the pipe into the said holder, and an igniting device for firing the explosive after its delivery to the holder, substantially as shown and described. 18th. An aerial machine provided with a propelling mechanism comprising a holder, a feed pipe for containing the explosives and connected with the said holder, an automatic delivery device for discharging the explosives one at a time from the pipe into the said holder, an igniting device for firing the explosive after its delivery to the holder, and a yieldingly mounted receiver arranged in the said holder and adapted to support the explosive for firing the same, substantially as shown and described. 19th. An aerial machine, comprising a balloon, a car supported thereon, a propeller arranged on the said balloon and provided with a holder for firing explosives, and an explosive feeding mechanism for feeding and delivering the explosives to the said holder, substantially as shown and described. 20th. An aerial machine, comprising a balloon, a car supported thereon, a propeller arranged on the said balloon and provided with a holder for firing explosives, an explosive feeding mechanism for feeding and delivering the explosives to the said holder, and an electric firing device extending from the said car to the said holder for firing the explosives therein, substantially as shown and described. 21st. An aerial machine provided with a balloon supporting a car, and a propeller held on the rear end of the car and made in the shape of a holder, and pellets adapted to be exploded within the said holder, to propel the machine forward, substantially as shown and described. 22nd. An aerial machine provided with a balloon supporting a car, and a propeller held on the rear end of the balloon and made in the shape of a holder, pellets adapted to be exploded within the said holder to propel the machine forward, and an igniting device for exploding the pellets in the said holder, substantially as shown and described. 23rd. An aerial machine comprising a balloon supporting a car, a propeller pivoted on the rear end of the said balloon and receiving a forward motion by the explosion of pellets in the said propeller, and steering wings fulcrumed on the sides of the said balloon, substantially as shown and described. 24th. An aerial machine provided with a balloon having side wings and adapted to be turned to any desired angle, substantially as shown and described. 25th. An aerial machine provided with a balloon having side wings and adapted to be turned to any desired angle, and means, substantially as described, for moving the said wings into an angular position, substantially as set forth. 26th. An aerial machine provided with a balloon having side wings and adapted to be turned to any desired angle, means, substantially as described, for moving the said wings into an angular position, and a locking device to hold the wings in a locked position, substantially as shown and described. 27th. An aerial machine comprising a balloon supporting a car, a propeller pivoted on the rear end of the said balloon and receiving a forward motion by the explosion of the pellets in the said propeller, steering wings fulcrumed on the sides of the said balloon, and means, substantially as described, for imparting a swinging motion to the said propeller to steer the machine sidewise, and means, substantially as described, for imparting a swinging motion to the said steering wings to cause the aerial machine to ascend and descend, substantially as shown and described. 28th. An aerial machine, comprising a balloon, a car supported on the balloon, and oars held on the said car, and manipulated by the operator located within the car, substantially as shown and described. 29th. An aerial machine, comprising a balloon, a car supported on the balloon, and oars held on the said car, and manipulated by the operator located within the car, the said oars being provided with blades having movable wings adapted to open and close, substantially as shown and described. 30th. An aerial machine, provided with an oar having a blade, and wings pivoted in the said blade, and adapted to open and close, substantially as shown and described. 31st. An aerial machine, comprising a balloon, a car supported by the said balloon, oars supported on the said car, and provided with blades having movable wings, wings pivoted on the sides of the balloon, and adapted to be manipulated from within the car, and a rudder arranged at the rear end of the said balloon, and adapted to be manipulated from within the car, substantially as shown and described. 32nd. An aerial machine, comprising a balloon, a car supported by the said balloon, oars supported on the said car, and provided with blades having movable wings, wings pivoted on the sides of the balloon, and adapted to be manipulated from within the car, a rudder arranged at the rear end of the said balloon, and adapted to be manipulated from within the car, and means, substantially as described, for moving the said balloon wings into an angular position and locking them therein, substantially as shown and described. 33rd. An aerial machine, comprising a balloon, a car supported by the said balloon,

oars supported on the said car, and provided with blades having movable wings, wings pivoted on the sides of the balloon, and adapted to be manipulated from within the car, a rudder arranged at the rear end of the said balloon, and adapted to be manipulated from within the car, and a treadle mechanism arranged in the said car, and adapted to be actuated by the operator's feet to impart a swinging motion to the said rudder, substantially as shown and described.

**No. 42,225. Combination Qualifying Chamber for Upright Pianos.** (*Chambre d'harmonie pour pianos droits.*)

John B. Mitchell, Bowmanville, Ontario, Canada, 9th March, 1893; 6 years.

*Claim.*—The combination of the sounding boards F, having a rim G, forming a sounding chamber, and connected together by the post J, and held in position by the screw K, all of which sustains the tone and gives it a better quality than is found in an ordinary upright piano, substantially as and for the purpose hereinbefore set forth.

**No. 42,226. Electrical Propulsion of Cars.**

(*Système de propulsion électrique pour chars.*)

Archibald H. Brintnell, Toronto, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. In a trolley system for electrical propulsion of cars, a completely encased trolley wire, a series of upwardly extending branch rods or wires, a series of downwardly extending plungers attached to longitudinal ties, which are successively depressed to complete the circuit through the rods and plungers and the encased wire, by a series of trolley wheels, flexibly attached to the end of the trolley arms, as and for the purpose specified. 2nd. The trolley wire K, the rods *l*, connected to it, extending upwardly at intervals through the casing, the ties M, having plungers *m*, designed to be successively brought by the trolley arms and wheel into contact with the rods *l*, more than one at a time, and the cross rod O, extending beneath each tie M, and having compression springs Q, situated beneath each end, as and for the purpose specified. 3rd. The trolley wire K, the rods *l*, connected to it and extending upwardly at intervals through the casing, the groove 2, having ties M, situated at intervals throughout its length, provided with plungers *m*, and actuated from the trolley arms and wheels, in combination, the water proof layer of material N, bar O, springs Q, and cross bars P, arranged as and for the purpose specified. 4th. The combination with the trolley wire *k*, the rods *l*, connected to it and extending upwardly at intervals through the casing, the groove 2, having ties M, situated at intervals throughout its length, and provided with the plungers *m*, of the trolley wheels G, having the metal central portion *g*, and the insulating side discs *g*<sup>1</sup>, the trolley wheels being connected to and held in position by the trolley arm F, connected to the motor as and for the purpose specified. 5th. The combination with the trolley wire K, the rods *l*, connected to it and extending upwardly at intervals through the casing, the groove 2, having ties M, situated at intervals throughout its length and provided with the plungers *m*, of the trolley wheels, the arms H, of which are pivotally connected to the journal spindle of the preceding wheel, as and for the purpose specified. 6th. The combination with the trolley wire K, the rods *l*, connected to it and extending upwardly at intervals through the casing, the groove 2, having ties M, plungers *m*, of the trolley wheels, the arms H, of which are pivotally connected to the journal spindle of the preceding wheel, being connected by a spiral spring to the spindle of the preceding forked journal, as and for the purpose specified.

**No. 42,227. Electrical Propulsion of Cars.**

(*Système de propulsion électrique pour chars.*)

Archibald H. Brintnell, Toronto, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. In a surface system for the electrical propulsion of cars a completely encased and insulated underground wire having a series of contact plates throughout its length situated within pit casings, a series of insulating bent levers provided with contact rods journalled in the top plate of the casing, the lower ends of the contact rods being nominally out of contact with the contact plates, in combination with the metal strips on the side bar of the truck frame and means whereby the lever is raised so that the lower plate and the upper ends of the contact rod is brought into contact with the metal strip C, simultaneously as and for the purpose specified. 2nd. In a surface system for the electrical propulsion of cars two completely encased and insulated underground wires having a series of contact plates throughout their length situated within pit casings, a series of insulated bent levers each provided with two contact rods journalled in the top plate of the casing, the lower ends of the contact rods being normally out of contact with the contact plates, in combination with the metal strips on the side bar of the truck frame and means whereby the lever is raised so that the lower ends of the contact rods are brought into contact with

the contact plate and the upper ends of the contact rods are brought into contact with the metal strips C, simultaneously as and for the purpose specified. 3rd. The underground wires D, extending through the pipe tubes I, and through the casings G, and having contact plates M, connected with the same, the insulated lever J, having contact rods L, and journalled in bearings and normally resting in the longitudinal groove K, in the plate H, in combination with the metal strips *c*, and raising dog or lever whereby the lower and upper ends of the rods L, are simultaneously brought into contact with the plates M, and metal strips *c*, as and for the purpose specified. 4th. The combination with the underground wires D, extending through the pipes or tubes I, and through the casings G, and having contact plates M, connected to the same, the insulated lever J, having contact rods L, and journalled in bearings and normally resting in the longitudinal groove K, in the plate H, and the metal strips *c*, secured to the side bar of the truck frame, of the toggle jointed bar N, receding block O, and means whereby the toggle jointed bar N, is straightened so that the downward pressure of the receding block operates to raise the lever J, as and for the purpose specified. 5th. The combination with the underground wires D, extending through pipes or tubes I, and through the casings G, and having contact plates M, connected to the same, the insulated lever J, having contact rods L, and journalled in bearings and normally resting in the longitudinal groove K, in the plate H, and the metal strips *c*, secured to the side bar of the truck frame, of the toggle jointed bar N, receding block O, resting on one end of the segment and the bent lever S, resting upon the other, and means whereby the toggle-jointed bar N, is straightened, as and for the purpose specified. 6th. The combination with the underground wires D, extending through the pipes or tubes I, and through the casings G, and having contact plates M, connected to the same, the insulated lever J, having contact rods L, journalled in bearings and normally resting in the longitudinal groove K, in the plate H, and the metal strips *c*, secured to the side bar of the truck frame, of the toggle jointed bar N, receding block O, toothed segment P, meshing with the rack Q, resting on the friction roller R, upon one end of the segment and the bent lever S, having the friction roller resting on the other end of the segment, the friction roller T, located in the upper end of the bent lever S, beneath the bent lever J, and means whereby the toggle jointed bar is straightened, as and for the purpose specified. 7th. The combination with the underground wires D, extending through the pipes or tubes I, and through the casings G, and having contact plates M, connected to the same, the insulated lever J, journalled in bearings and normally resting in the longitudinal groove K, in the plate H, and the metal strips C, secured to the side bar of the truck frame, of the toggle jointed bar N, and the pressure wheel E, designed to straighten the toggle jointed bar as it passes over it and tilt the lever S, upon its pivot so as to raise the insulated lever J, into position to complete the circuit, as shown and for the purpose specified.

**No. 42,228. Mangle.** (*Calandre.*)

Menzo E. Wendell, Troy, New York, U. S. A., 10th March, 1893; 6 years.

*Claim.*—1st. A mangle, comprising a primary heated roll, a series of clothed rolls spaced about its periphery, a secondary heated roll, and a doffer interposed between the last two of the series of clothed rolls, substantially as specified. 2nd. A mangle, comprising a primary heated roll, a series of clothed rolls spaced upon its periphery, a secondary heated roll, a doffer interposed between the last two of the clothed rolls, and a guide plate interposed between the secondary heated roll and the last clothed roll, substantially as specified. 3rd. The primary heated roll, the first clothed roll, and a pivoted feed board having a curved feed plate, substantially as specified. 4th. A vertically movable goods box, and a pivoted feed board, in combination with the rolls of a mangle, substantially as specified. 5th. A pivoted goods box, and a pivoted feed board, in combination, with the rolls of a mangle, substantially as specified. 6th. A feed board connected with a goods box, and the latter pivotally connected with the frame work, in combination, with the rolls, substantially as specified. 7th. A goods box pivotally connected with the frame work, and provided with means for adjusting the same upon its pivot, and connected with a feed board to vary the position of a feed board, by the adjustment of the goods box, substantially as specified. 8th. A goods box pivotally connected with a mangle, and provided with means for vertical adjustment, substantially as specified. 9th. A feed board pivotally suspended upon the frame work and provided with a curved feed plate, and means for retaining the board and feed plate in an adjusted position, substantially as specified. 10th. The combination, with the standard and a tie rod, of a bracket secured to the tie rod, and to the standard at points at opposite sides of the standard, and a device mounted in the standard and in line with the tie rod, substantially as specified. 11th. A standard, a bracket, a tie rod, and a gear stud, constructed and arranged, substantially as specified. 12th. The combination, with the bearing boxes of a roll, of pins, pivoted cams extended below their pivots in the form of gears, a threaded shaft *f*, and intermediate power conveying devices for moving the cams upon their pivots, substantially as specified. 13th. The combination, with the bearing boxes of a roll, of pins and geared cams and gearing connecting the cams at a point below their pivots with a cam operating shaft, substantially as specified. 14th. A bifurcated cam

provided with pivot bearings and having one of the bifurcations extended beyond the other, and formed for operative connection with cam operating gearing, substantially as specified.

**No. 42,229. Seat for Vehicles. (Siège de voiture.)**

William Hodge, Guelph, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. In seats for vehicles adapted to be placed in different positions so as to form a single or double seated vehicle, stays F and I hinged or connected to hangers G, H, J and K, in combination with seats B and D, and back board L, substantially as described. 2nd. In seats for vehicles adapted to be placed in different positions, stays F and I hinged or connected to hangers G, H, J and K, in combination with seats B and D, pivot or hinge E, fastened to both ends of seat D, and to the sides of the body A, substantially as and for the purposes hereinbefore set forth.

**No. 42,230. Potato Planter. (Semoir à patates.)**

Stephen Essex, Providence, Rhode Island, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In a potato planter, an endless conveyor provided with a series of pockets adapted to receive the potatoes, singly, in combination with one or more lifting and lateral pressure relieving devices located at the lower side of the hopper or potato reservoir and contiguous to the conveyer, substantially as described. 2nd. In a potato planter provided with an endless conveyor arranged to receive potatoes, a hopper surmounting and communicating with the conveyer, having a vertical side arranged in the same vertical plane with one of the retaining sides of the conveyer, substantially as hereinbefore described. 3rd. In a potato planter, an endless conveyor provided with a series of pockets adapted to receive the potatoes singly, in combination with one or more lower lifting and lateral pressure relieving devices A, and one or more pressure relieving devices B, arranged at substantially right angles to the said lifting devices, substantially as described and for the purpose set forth. 4th. In a potato planter, a conveyer, in combination with one or more lifting and lateral pressure relieving devices, and a hopper provided with a vertical side arranged in the same plane with one of the vertical retaining sides of the conveyer, substantially as set forth. 5th. In a potato planter, an endless conveyor having vertical retaining sides, in combination with a brush or clearer, and a hopper provided with a vertical side arranged in the same plane with one of the said sides of the conveyer, substantially as hereinbefore set forth. 6th. In a potato planter, an endless conveyor, in combination with one or more lifting and lateral pressure relieving devices, a revolving brush or clearer, and a hopper communicating with the conveyer, substantially as hereinbefore set forth. 7th. In a potato planter, the combination of an endless conveyor provided with a series of pockets or cells arranged to receive potatoes, sprocket wheels carrying the conveyer, a revolving brush or clearer, a hopper provided with a vertical side, a discharge tube, a scraper or coverer, a roller, one or more lifting and lateral pressure relieving devices arranged in the same plane with the conveyer sides, and mechanism for operating the said parts, substantially as shown. 8th. In a potato planter, the combination with a hopper and a suitably mounted endless conveyor arranged to receive potatoes intermittently therefrom, of vertical parallel retaining sides between which the conveyer travels, having a portion A, of one of said sides movable in a vertical direction, a movable portion B of the hopper arranged in the same vertical plane with said conveyer side, and mechanism for intermittently actuating the said parts A and B, substantially as hereinbefore described and for the purpose specified.

**No. 42,231. Farm Gate. (Barrière.)**

Charles Devlin, Pembroke, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. The combination of extension G, G, with rollers B<sup>1</sup> and B<sup>2</sup>. 2nd. The combination of extension G, G, with rollers B<sup>1</sup> and B<sup>2</sup>, and track rail C, substantially as and for the purpose hereinbefore set forth.

**No. 42,232. Fire Escape. (Sauveteur d'incendie.)**

William Wallace Towne, Kingsey Falls, Quebec, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. In a fire escape, the combination with a cross bar adapted to be secured outside a window opening, and having two pulleys journaled thereon, of a portable bench adapted to be placed on the ground under the said window, a spindle journaled on the said bench, a brake wheel secured to the said spindle, a brake lever pivoted to the said bench, a helical groove formed on the said spindle, an endless cord passing over the pulleys on the said bar, and passed several times around the said spindle, two hooks on the said cord, and belts adapted to be secured to the said hooks, substantially as set forth. 2nd. In a fire escape, the combination with the cross bar G, of the two pulleys H, the collars I, I, chains J, and hooks K, substantially as set forth. 3rd. In a fire escape, the combination with the bench A, having a fast bearing B, at one side and a sliding bearing C at the other side of the spindle D, having helical grooves formed on its surface, brake wheel E, and lever brake F, substantially as set forth.

**No. 42,233. Sole for Footwear. (Semelle pour chaussures.)**  
Ferdinand Ephraim, San Francisco, California, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. As an improved article, soles for boots, shoes, etc., having a layer of metal or metal gauze interposed between the inner and outer soles, and of nails, brads, etc., secured to said inner layer and projecting through the outer sole. 2nd. An improvement in the art of making boots, shoes, and other soles, which consists in inserting a layer of metal or gauze cloth between the inner and outer soles, and securing a series of nails, brads, etc., to the intermediate layer, and permitting the free ends thereof projecting beyond the outer sole. 3rd. The combination, with a boot, shoe, etc., of the sole thereof, of the layer of metal or gauze cloth interposed between the inner and outer sole of the boot or shoe, and of the series of nails, brads, etc., secured to said metal plate or gauze cloth and projecting beyond the outer sole. 4th. As an improved article of manufacture, a rubber boot, shoe, or similar article, having an inner lining or layer of metal or wire gauze interposed within the sole or heel thereof, or both, and a series of nails, brads, etc., secured to said lining and projecting beyond the outer face of the sole or heel. 5th. The combination, with the sole of a boot, shoe, or similar article, of the inner lining located between the outer and inner sole, and of the nails, brads, etc., passing through the outer sole, the same having their inner end secured to the inner lining, and the outer end projecting beyond the surface of the outer sole.

**No. 42,234. Galvanic Battery. (Batterie galvanique.)**

Walter Ambus Crowder, Chicago, Illinois, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In a galvanic battery, the jar thereof provided with an overflow receptacle arranged to receive and hold the excess of electrolytic liquid as it increases in volume and prevent its overflowing the cell, substantially as specified. 2nd. In combination with a galvanic battery, an overflow receptacle with the battery jar and in connection with the compartment containing the negative electrolyte adapted to receive the excess of liquid when its level rises and before it rises to the level of the jar, substantially as specified. 3rd. In combination with a galvanic battery, a removable receptacle in the battery jar with its top at a level lower than the top of the jar, whereby it is adapted to receive the overflow of the electrolytic liquid and prevent the overflowing of the cell, substantially as specified.

**No. 42,235. Spring Back for Vehicle Seats.**

(*Dossier à ressort pour sièges de voiture.*)

Robert Torrance, D.D., executor of the last will and testament of John B. Armstrong, Guelph, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. In a "lazy back" for vehicles, the combination with a back rail of a series of flexible supports each composed of a rod and a tapered strap section, said sections being integral, substantially as and for the purposes specified. 2nd. In a "lazy back" for vehicles, the combination with a seat back and a back rail of interposed, flexible or spring connections, each of said connections having a tapered strap end for attachment to the back rail, and a rod end provided with a collar or eye for attachment to the seat back, substantially as and for the purposes specified. 3rd. The spring attachment herein described, for securing easy backs to vehicles, consisting of the rod section *d*, having the strap section *d'*, continuous therewith, substantially as and for the purposes specified. 4th. In a "lazy back" for vehicles, the combination with a seat back and a seat of the interposed, tapered, flexible supports M, substantially as and for the purposes specified.

**No. 42,236. Machine for Harvesting, Threshing and Fanning Grain. (Moissonneuse, machine à battre et tarare-cribleur combinés)**

William Jackson Conroy, Aylmer, Quebec, Canada, 10th March, 1893; 6 years.

*Claim.*—The combination of the main driving wheel A, communicating the motive power by shafts E, E, E, with the cutting gear B, and the canvas belts or carriers C, C, to deliver the grain to the threshing drum D, and the gram and straw after separation to the fanning mill J, the open belt or carrier C, to carry off the straw, the gearing F, F, to convey motion to the carriers and fanning mill, and G, a connecting rod, which with I, provides the vibrating power to work J, the screens of the fanning mill.

**No. 42,237. Top. (Toupie.)**

Theophile Bedard, St. Henry, and Narcisse Vermette, Montreal, all in Quebec, Canada, 10th March, 1893; 6 years.

*Claim.*—1st. A top spinning device consisting of a spindle journaled in a hollow casing, the lower end of the spindle passing a short distance through the said casing, two cords secured at different points to the said spindle, the said cords passing out through perforations in the said casing, and attached to the said spindle in such a manner that when one cord is wound on the spindle the other is unwound, substantially as set forth. 2nd. The combination with

the top G having a socket *g* of the spindle C journaled in the chamber A, and the cords D and E secured to the said spindle, substantially as set forth.

**No. 42,238. Mangle. (Calandre)**

Thomas S. Wiles, Albany, and Menzo E. Wendell, Troy, all in the State of New York, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. The combination with a clothed drum of a series of separate stationary ironing bars, substantially as specified. 2nd. The combination, with a clothed drum of a series of separate ironing bars capable of slight radial movement, substantially as specified. 3rd. The combination, with a clothed drum of a series of hollow stationary bars adapted to be heated and means for separating the drum from the bars, substantially as specified. 4th. The combination, with a clothed drum adapted to be rotated, of a series of separated hollow ironing bars over a portion only of the drum, whereby goods carried by the drum and between it and the bars are uniformly and successively pressed and freed from the vapour produced, substantially as specified. 5th. The combination, with a clothed drum of a series of stationary separated bars adapted to be heated and mounted to yieldingly bear upon the periphery of the drum, substantially as specified. 6th. The combination with a clothed drum and co-operating separated ironing devices of a steam chest and a superimposed clothed roller, substantially as and for the purpose specified. 7th. The combination of a clothed drum, a series of separately stationary ironing devices arranged about a portion of periphery of said drum, and a steam chest and coaxing clothed roller arranged and operating to finish the opposite side to that acted upon by the drum and ironing devices, substantially as specified. 8th. The combination of a rotative clothed drum, a series of heated ironing devices, a rotative clothed roller, a stationary steam chest, means for elevating and depressing the drum and connecting devices for elevating and depressing the roller, substantially as specified. 9th. The combination, with an arched series of stationary separated ironing bars, a clothed drum mounted in reciprocating bearings and means for elevating and depressing said bearings, substantially as specified. 10th. The combination, with a series of stationary ironing bars, a clothed drum mounted in reciprocating boxes, screw threaded standards for the boxes, rotative nuts mounted on the screws, and gearing for rotating the nuts for the purpose of elevating and depressing the drum, substantially as specified. 11th. The combination, with a drum mounted in sliding boxes, of screw threaded standards non-rotatably connected with the boxes, steps perforated for the passage of the standards, and adapted to receive worm geared nuts fitted to the threads of the standards, a worm meshing with the nuts, and sprocket and chain connections between the gear and a hand wheel arranged in convenient access to an operator, substantially as specified. 12th. The combination, with a drum and its shaft, and drum elevating and depressing devices comprising screw threaded standards, of shaft embracing links, levers, and a clothed roll mounted for reciprocation by the levers, substantially as specified. 13th. The combination, with a rotative drum, of a series of hollow stationary ironing bars, each having a face conforming more or less to the periphery of the drum and having a receiving bevel, substantially as specified. 14th. The combination, with a rotative drum, of a series of bars, each provided with a bevelled receiving edge on its working face, and each having said working face more or less conforming to the periphery of the drum, and each having its remaining portions protected by a non-conductive covering, substantially as specified.

**No. 42,239. Washing Machine. (Machine à blanchir.)**

William Semmens, Hamilton, Ontario, Canada, 10th March, 1893; 6 years.

*Claim.*—In a clothes washer, the combination of the receptacle A, provided with lateral bent arm levers F, having box bearings G, and pivoted on the stationary pins *m*, of rigid angle castings *n*, the transverse bar E, provided with brushes H, which support the vertical levers D, of washer, the cross bar L, the horizontal hand lever I, having handles J and K, and the drawer T, in two sections, hinged at U, substantially as and for the purpose hereinbefore set forth.

**No. 42,240. Gully. (Entrée d'égout.)**

Lewis Skaife, Montreal, Quebec, Canada, 10th March, 1893; 6 years.

*Claim.*—In a street gully, the combination with a length of vitrified pipe in which the outlet is formed of a metal pin or hanger introduced into the pipe through a score formed therein, and the metal shed trap suspended on such pin or hanger, as and for the purposes set forth.

**No. 42,241. Shaft Support for Vehicles. (Support pour essieux de voiture.)**

Ebenezer Miller, Fredericton, New Brunswick, Canada, 10th March, 1893; 6 years.

*Claim.*—The combination of spring holder and arm E, E, and its attachment to the axle yoke D, substantially as and for the purpose hereinbefore set forth.

**No. 42,242. Covering for Roofs and Floors.**

(*Couverture pour toitures et planchers.*)

Robert Augustus Chesebrough, New York, State of New York, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. A roof or floor comprising tiles laid in mineral wax and resting upon a suitable support, substantially as set forth. 2nd. A roof or floor comprising tiles laid in prepared mineral wax and resting upon a suitable support, substantially as set forth. 3rd. A roof or floor formed of tiles laid on heavy paper coated with mineral wax, the tiles being embedded in an additional outside coating of the same, substantially as set forth.

**42,243. Lamps and Candelabra for Burning Light or Volatile Oils. (Lampes et chandeliers pour brûler les huiles légères et volatiles.)**

Herbert Ernest Newton Mason, Birmingham, England, 10th March, 1893; 6 years.

*Claim.*—1st. The arrangement or combination of the pinion *s*, crank wheel and pin *r*<sup>2</sup> *r*<sup>3</sup> crank rod *d*<sup>3</sup>, ball jointed piston rod *d*<sup>2</sup>, *d*<sup>3</sup>, *d*<sup>4</sup>, *d*<sup>5</sup>, and slotted guide tube *g*, substantially as described and shown for actuating the piston by which the oil from a cylinder in communication with the storage reservoir is forced through a supply pipe to the oil container or wick dipping cup. 2nd. The combination or arrangement of the concentric oil feeding and overflow pipes of the lamp as hereinbefore described and shown. 3rd. The combination, with the concentric oil feeding and overflow pipes of the lamp of an oil container or wick dipping cup provided with a tubular bottom through which the said pipes pass to the oil container or wick dipping cup, and a screw socket or cup for screwing into the neck of the lamp body for forming a liquid tight joint as herein before described and shown. 4th. The telescopic arrangement hereinbefore described and shown of the upper parts of the concentric oil feeding and overflow pipes of the lamp for the purpose of adjusting the height of the said pipes in the oil container or wick dipping cup.

**No. 42,244. Steam Engine for Ship Steering Apparatus. (Machine à vapeur pour appareil à gouverner les navires.)**

Daniel M. Maxon, Bay City, Michigan, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. The combination in a steam engine of the cylinder carrying a piston and piston rod, and provided with steam inlet and exhaust ports, and a casing connected with the said ports with a valve within said casing for admitting steam pressure to both ends of the cylinder at the same time, and capable of controlling the movement of the piston by opening either of the exhaust ports, and passages or pipes for admitting steam to and from the casing, substantially as set forth. 2nd. The combination in a steam engine of the cylinder provided with steam inlet and exhaust ports, and carrying a piston and piston rod, a valve or valves connected with the said ports for controlling the movement of the steam, with the steam supply passages connected to the said valve casings, and each passage provided with a pressure retaining valve, for the purpose set forth and arranged, substantially as described. 3rd. The combination in a steam engine of the cylinder having supply and exhaust ports, and carrying a piston and piston rod, with a valve or valves contained in a casing and capable of admitting steam pressure to the cylinder on both sides of the piston at the same time, and of controlling the exhaust upon either side of the piston, the steam supply passages leading from the boiler to the opposite ends of the said valve casing, and with a pressure retaining valve in each passage for allowing the steam to pass to the cylinder and arresting the passage thereof from the cylinder, substantially as set forth. 4th. In a steam engine, the combination of the cylinder, having a steam inlet and exhaust ports and carrying a piston and piston rod, the valve contained in a casing and capable of admitting steam to both ends of the cylinder at the same time, and for opening the exhaust at either end of the cylinder, the supply pipes leading from the boiler to the opposite ends of the said valve casing, and provided with valves in proximity to the said casing for admitting steam pressure to the casing, and for closing the pipes against a return of the steam, substantially as set forth. 5th. In a steam engine, the combination of the cylinder, having ports for the supply and exhaust of steam, and carrying a piston and piston rod, a valve contained in a casing having supply and exhaust pipes, and arranged for admitting steam to both ends of the cylinder at the same time, and for exhausting the steam pressure from either end of the cylinder, the supply passages for admitting steam pressure from the boiler to the valve, and provided with pressure retaining valve in proximity to the said valve casing devices for operating the valve to open either exhaust port to the cylinder, and mechanism for automatically operating the valve to close the said exhaust port by the action of the piston, substantially as set forth. 6th. In a steam engine, the combination of the cylinder carrying a piston and piston rod, and having steam supply and exhaust ports, with a valve capable of supplying steam pressure upon both sides of the piston at the same time, and of controlling the movement of the piston by the exhaustion of pressure from either side thereof, means for moving the valve to reduce the pres-

sure on either side of the piston, and devices for automatically operating the valve to equalize the pressure upon both sides of the piston by the movement of the piston rod, substantially as set forth.

7th. In a steam engine, the combination of the cylinder carrying a piston and piston rod, and provided with steam admission and exhaust ports in each end, a valve for admitting steam pressure to both ends of the cylinder at the same time, and for exhausting the pressure from either end to move the piston, devices for operating the valve to open one of the said exhaust ports for moving the piston, and mechanism for automatically operating the valve to close the exhaust by the movement of the piston, substantially as set forth.

8th. In a steam engine, the combination of the cylinder carrying a piston and piston rod, the guide bars supported in guide ways on opposite sides of the cylinder, and with their ends permanently connected to the ends of the piston rod for moving the bars longitudinally, the casing having steam ports connected with the ends of the cylinder and provided with steam inlet and exhaust passages, the valves within the casings, and with their adjacent ends connected by a bar, the operating lines having their ends secured to the ends of the said connecting bar, and provided with loops  $q^1$ , and  $r^1$ , the sheaves  $o^1$ , mounted upon a support  $p^1$ , carried by one of the said guide bars for carrying the said loops, substantially as set forth.

9th. In a steam engine, the combination of the cylinder having steam ports and a valve, and carrying a piston, having a piston rod projecting from both ends of the cylinder, and provided with guide ways or openings in the opposite sides of its head supporting flanges, with the parallel bars on opposite sides of the cylinder and resting in said guide ways, and the cross heads secured to the opposite ends of the said bars and to the ends of the piston, substantially as set forth.

10th. In a steam engine, the combination of the cylinder carrying a piston and piston rod and provided with steam inlet and exhaust ports of the bars  $b$ , supported in guides on opposite sides of the cylinder and extending beyond each end of the cylinder, the cross heads  $i$ , secured to the ends of the said guide bars and to the outer end of the piston rod, the valve casings  $m$ , connected to the said ports on the cylinder, and provided with inlet and exhaust pipes, the valves  $o$ , within and with their ends projecting beyond the casings, the bar  $k^1$ , connected to the ends of the said valve with the operating lines  $m^1$ , and  $n^1$ , looped over sheaves  $o^1$ , mounted on a support moving with the piston, and with their inner ends secured to the opposite ends of the operating bar  $k^1$ , substantially as set forth.

11th. In a steam engine, the combination of the cylinder carrying a piston and piston rod, the valve casings having steam ports connected to the ends of the cylinder and located with their open ends in proximity to each other and provided with inlet and exhaust pipes with the valves  $o$ , within the casing, having their outer reduced ends projecting from the open ends of the casings, the packing  $m$ , and cap pieces  $r$ , secured by bolts  $r$ , and nuts  $r$ , to the outer ends of the valves, a bar for connecting the valves to each other, and extending over the said casings, the sheaves  $o^1$ , centrally located between the ends of the said bar, and mounted upon a support moving with the piston rod with the operating lines passed over supporting sheaves beyond the outer ends of the valves and looped over the said sheaves  $o^1$ , and with their ends secured to the outer ends of the said connecting bar, substantially as set forth.

12th. In a steam engine, the combination of the cylinder carrying a piston rod, the valve casings  $m$ , connected with the cylinder and provided with ports opening into the opposite ends of the cylinder and with inlet and exhaust ports of the valves  $o$ , within the casings and with their outer reduced ends projecting beyond the casings and provided with packing  $u$ , and with cap pieces  $r$ , outside of the packing, the bolts  $r$ , and nuts  $r$ , for holding the cap pieces and adjusting the packing, and the bar  $p$ , with its ends returned and secured to said bolts  $r$ , by nuts  $s$ , and  $t$ , and mechanism for moving the valves for opening the exhaust ports to either end of the cylinder, substantially as set forth.

13th. In a steam engine, the combination of the cylinder, carrying a piston and piston rod, the valve casings  $m$ , connected to the cylinder and provided with ports opening into the opposite ends of the cylinder, and with inlet and exhaust ports of the valve  $o$ , within the casings and with their outer reduced ends projecting beyond the casings and provided with packing  $u$ , and with caps  $r$ , outside of the packing, the bolts  $r$ , and nuts  $r$ , for holding the cap piece and adjusting the packing, and the bar  $p$ , with its ends returned and secured to said bolts  $r$ , by nuts  $s$ , and  $t$ , and mechanism for moving the valves for opening the exhaust ports to either end of the cylinder, substantially as set forth.

14th. In a steam engine, the combination of the cylinder, carrying a piston and piston rod, the valve casings secured to the cylinder, and provided with steam ports  $l$ , into the cylinder and having inlet ports  $e^1$ , and exhaust ports  $a^1$ , of the valves  $o$ , within the casings, and with their outer reduced ends projecting beyond the casings, the packing  $u$ , around the reduced ends, the caps  $r$ , bolts  $r$ , and nuts  $r$ , for retaining the packing, the bar  $p$ , with its ends returned, and secured to the ends of the valves, the operating bar  $k^1$ , secured to the bar  $p$ , and with its ends extending over the casing, and provided with stops  $u^1$ , with the pieces  $p^1$ , carried by a support moving with the piston rod, and engaging with the said stop  $u^1$ , when the piston has neared the end of its travel, and devices for operating the valves to move the piston, substantially as set forth.

15th. In a steam engine, the combination of the cylinder carrying a piston and piston rod, the guide bars supported in guide ways on opposite sides of the cylinder, and with their ends permanently connected to the ends of the piston rod, with the support  $p^1$ , secured to the middle

of one of the said guide bars, the valve casings having steam ports connecting with the ends of the cylinder, and provided with exhaust and inlet pipes, the valves within the casings for admitting steam pressure upon both sides of the piston at the same time, and for exhausting the pressure from either side to move the piston, and with their ends projecting beyond the inner adjacent ends of the casings, a bar connected to the ends of the valves, and extending over the casing, and provided at its ends with stops  $u^1$ , for engaging with the support  $p^1$ , when the piston neared the end of its travel, for the purpose set forth, substantially as described.

16th. In a steam engine, the combination of the cylinder provided with steam ports and valves, and carrying a piston having a piston rod projecting from both ends of the cylinder, the bed pieces carrying the cylinder, and projecting beyond the limit of travel of the piston, and provided with a pair of horizontal sheaves mounted upon the outer end portions of said bed piece, the horizontal sheaves mounted upon the ends of said piston rod, and the cables passed through the said sheaves upon the bed piece, and with the portions between the said sheaves looped over the sheaves on the piston, and with the coincident ends of the cables secured to a permanent support, substantially as set forth.

17th. In a steam engine, the combination of the cylinder having steam admission and exhaust ports, and a valve for regulating the passage of steam to and from the cylinder, the piston within the cylinder, and having a piston rod projecting from both ends of the cylinder, with the longitudinal guide bars carried by supports on opposite sides of the cylinder, the cross heads secured to the outer ends of the guide bars and to the ends of the piston, the cushions secured to the cross heads between the piston and guide bars, and the portions projecting from the outer sides of the cylinder heads for contact with the cushions when the piston has reached the end of its travels, substantially as set forth.

**No. 42,245. Method of and Machinery for Closing and Soldering Metallic Boxes.** (*Méthode et machine pour fermer et souder les boîtes métalliques.*)

Otto Asche, 7 Rue des Deux Gares, Paris, France, 10th March, 1893; 6 years.

*Claim.*—1st. The herein described method of soldering boxes, consisting in strengthening or forming a layer of tin or of solder at the extremities of the bodies of the box, then setting in the bottoms or covers inclose the edges or rims of the box, and finally causing to descend upon the edges or rims to be soldered, a hot plunger, which effects simultaneously the crushing of the setting in and the melting of the interposed solder, substantially as described.

2nd. The herein described soldering machine, consisting substantially of a hot plunger 9, actuated by a cam mechanism 4, for causing it to descend vertically, hinged collar 12, and disc 14, necessary for holding the box to be soldered during the crushing of the setting in and soldering, and, if necessary, providing the machine with a toothed wheel, operated by the cam mechanism, and levers 24, 25, 26, 27 and 28, said wheel operating a circular rail 30, provided with inclines pressing against slides 32, 32', for causing the automatic approach and withdrawal of the clamps 23, which serve at once to effect the setting in of the edges to be soldered, and for holding these edges during the whole time of action of the hot plunger, the whole as described.

3rd. The method of introducing the solder necessary for the soldering of the receptacle by means of a wire or metal strip strongly tinned all over, one end of which is allowed to project outside so as to serve for the ready opening as described above.

**No. 42,246. Steam Generator.** (*Générateur de vapeur.*)

Werter C. Higgins, Norwich, Connecticut, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In a steam generator, in combination with the front and back sections, a multiple of intermediate sections each having two hollow cross bars 22 and 24, at its upper section, and a return draft flue between said bars, and a vertical central column depending from the bar 22, within the combustion chamber, said column being connected with the sides of the section by lateral inclined pipes 27, substantially as and for the purpose specified.

2nd. In a generator, in combination with the front and back sections, each recessed on its inner side as set forth, a multiple of intermediate boiler sections having return draft flues 25, near the top, and hollow columns 26, and laterally extending pipes 27, within the combustion chamber, and upright hollow cross bars with the draft flues, substantially as and for the purpose specified.

3rd. In a generator, in combination front and rear sections, a front plate on the front section provided with an extension forming a chamber at the end of the draft flues, and having a smoke pipe collar, a door hinged to the front portion of the extension for cleaning the draft flues, a drop door hinged to the extension for regulating the draft, intermediate boiler sections having hollow columns with laterally extending pipes within the combustion chamber, as set forth, and hollow manifold sections connected with the lower portion of each of the boiler sections, in the manner and for the purpose specified.

4th. In a generator, in combination, an ash pit comprising a multiple of sections, a base, and a top rim, and a super imposed boiler consisting of front and back sections, intermediate sections having hollow columns with laterally extending pipes within the combustion chamber, as set forth, and manifold connections, substantially as described, and for the objects specified.

**No. 42,247. Two Wheeled Vehicle.***(Voiture à deux roues.)*

John F. Burrows, Saginaw, Michigan, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In a two wheeled vehicle, the combination with the body of a right angled frame depending from the body in the rear of the axle and between the wheels, and an adjustable clamp carried by the frame for securing the article supported on the frame, substantially as described. 2nd. In a two wheeled vehicle, a frame arranged at the rear axle between the wheels, and comprising upright bars connected with the vehicle body, horizontal arms extending from the lower ends of the bars, a board connecting the said horizontal arms with each other, and an adjustable cushioned arm held on the said transverse board to lock the article in place, substantially as described. 3rd. In a two wheeled vehicle, the combination with the axle and shafts, of springs having their rear ends secured to the axle and their forward ends to the shafts, and a right angled frame depending from the body in the rear of the axle and between the wheels, substantially as described. 4th. In a two wheeled vehicle, the combination with the axle and shafts, of springs having their rear ends to the axle, a body supported by the shafts, a right angled frame depending from the body in the rear of the axle and between the wheels, and means of securing an article on the said frame, substantially as described. 5th. In a two wheeled vehicle, the combination with the body and the frame depending from the same between the wheels, of a seat pivotally connected to the body, whereby provision is made for adjusting the seat forward or backward, as and for the purpose set forth.

**No. 42,248. Sulky Plow. (Charrue à siège.)**

William Sobey, Racine, Wisconsin, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In sulky plows, the combination with the front and rear furrow wheels, of an interposed yielding connection for communicating movement from one to the other of said wheels, substantially as described. 2nd. In sulky plows, the combination with the front and rear furrow wheels, and their standards, of suitable plates attached to said standards, cross connections between said plates, and a spring interposed in one of said cross connections, substantially as described. 3rd. In sulky plows, the combination with the front and rear furrow wheels and their standards, of suitable plates or extensions attached to said standards, and cross connections extending between said plates or extensions, substantially as described. 4th. In sulky plows, the combination with the front and rear furrow wheels, and their standards, of suitable quadrant plates attached to said standards, and cross connections between said quadrant plates and flexibly extended to the rims thereof, substantially as described. 5th. In sulky plows, the combination with the frame support, of the swivel mounted front and rear furrow wheels, the yielding connector extended between said wheels, and the swinging team pole co-acting with said wheels to shift the same, substantially as described. 6th. In sulky plows, the combination with the supporting frame and with the front and rear furrow wheels having standards swivelled in said frame, of the quadrant plates secured to said standards respectively, the chain and link connector extending between said plates and provided with an interposed spring, and the team pole suitably sustained by the front quadrant plate, substantially as described.

**No. 42,249. Phonograph Recorder.***(Régistre de phonographe.)*

Thomas Alva Edison, Llewellyn, Park, New Jersey, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. A phonograph recorder having for its recording point a cutting tool with a cutting edge in advance of the stock of the tool, which edge is made blunt to prevent the breaking of the recording material below the line of cutting, substantially as set forth. 2nd. A phonograph recorder having the cutting tool recording point, *a*, with its cutting edge provided with upper and lower edges *d, e*, to prevent the breaking of the material below the line of cutting, substantially as set forth. 3rd. A phonograph recorder having for its recording point a cutting tool with the cutting edge in advance of the stock of the tool, the thickness of said edge being greater than the thickness of the material that breaks away from the mass at the point of cutting, substantially as described.

**No. 42,250. Filter for Water. (Filtre.)**

Junius Albert Bowden, Detroit, Michigan, U.S.A., 10th March, 1893; 6 years.

*Claim.*—1st. In a filter, the combination, with the water inlet pipe of a filtered water discharge pipe terminating at the base of the filter and provided with a strainer, and a shield located above the strainer for supporting the mass of filtering material, substantially as described. 2nd. In a filter, the combination, with the water inlet conduit and a filtered water outlet conduit, a strainer located at the base of said filtered water outlet conduit, and oblique bottom upon which the mass of filtering material rests, the said strainer being located beneath the oblique support, and adapted to discharge water in washing upward from the lower part of the said oblique support whereby channels are formed in the filtering material, and

the filtering material constantly drops down along said oblique supports into said channels, substantially as and for the purpose described. 3rd. In a filter, the combination, with a filtered water discharge conduit leading from the base of the filter, and provided with a strainer of a series of depending pipes, extending down through the filter bed, and provided with strainers or perforated nozzles at their lower ends, and a valve adapted to direct the current of water from the main through the filtered water outlet pipe, into the mass of filtering material, substantially as and for the purpose described. 4th. In a filter, a valve and valve casing connected on the outside of the filter case with inlet pipe, filtered water outlet pipe and waste water outlet pipe, and adapted to connect within the filter case with the strainer below the filtering material, and with a space above it, substantially as and for the purpose described. 5th. In a filter, the combination, with an upright filtered water discharge pipe entering at the top of the case and extending down to the base of the filter, provided at its lower end with a perforated strainer of a valve at the top of the pipe adapted to register on the outside of the case with the water inlet, the filtered water outlet and the wash water outlet, and when in one position to admit water through into the top of the filtered case above the filter bed and at the same time to admit water out from the bottom of the filter bed to the filtered water outlet, and when in another position to admit water from the main through the upright pipe to the bottom of the filter bed, and to discharge water from above the filter bed to the wash water outlet, substantially as described. 6th. The combination, with a filter, of a filtered water outlet pipe adapted to be used as a wash water inlet pipe provided with a strainer at the inner end, a chamber surrounding said strainer and a shield above said chamber and strainer, substantially as and for the purpose described. 7th. In combination, with a filter and the feed water main leading thereto, an alum tank in shunt connection with said water main and valves adapted to control the entrance of alum water from said alum tank into said filtering tank, substantially as and for the purpose described.

**No. 42,251. Damper. (Régistre.)**

Alonzo Charles Mathews, Montreal, Quebec, Canada, assignee of Charles A. Couch, Columbus, Ohio, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. In a damper and heat deflector, the combination of the post or stem *a*, a conical or flaring surface deflector *b*, on said stem, a horizontal shaft or spindle *c*, also supported on said stem, and a deflecting ring *d*, suspended above said deflector *b*, said shaft being adapted to be journaled in a stove pipe or other conductor for the passage of the products of combustion, substantially as and for the purpose specified. 2nd. In a damper and heat deflector, the combination with the post or stem *a*, of a flaring deflector at each end thereof, and a transverse ring *d*, suspended between said deflectors, substantially as and for the purpose specified. 3rd. A damper and heat deflector comprising a shaft or spindle *c*, adapted to be journaled in a stove pipe, a truncated cone ring *d*, sleeved on said spindle or shaft, a post or stem *a*, supported by the shaft and having a deflecting plate *b*, at the lower end of said post, and a deflecting plate *g*, attached to the upper end of the said post, as set forth, for the purpose described. 4th. A damper and heat deflector, comprising inverted deflecting plates with flaring surfaces, one above and the other below, an annular ring in a stove pipe or other conductor, for the passage of the products of combustion, as set forth. 5th. A heat deflector, presenting a series of approximately inverted conical or flaring surfaces to the axis of the smoke flue, with an intermediate annular ring and intermediate spaces for the passage of the products of combustion, and means for connecting and operating the whole. 6th. A heat deflector formed of a series of deflecting plates placed in such relative positions one to the other and to the smoke flue or other conductor, for the products of combustion, so as to deflect the heat downward or backward while allowing a free exit for the smoke or other products of combustion. 7th. A heat deflector formed of a series of deflecting plates, the flaring surfaces of which vary in sectional area or diameter, as shown. 8th. A heat deflector formed of inverted deflecting plates approximately conical in form and separated by open spaces for the passage of the products of combustion, as set forth. 9th. A heat deflector formed of a series of heat deflectors circular in form with their deflecting surfaces, varying in sectional area or diameter and arranged concentrically together with intermediate spaces for the passage of the products of combustion, and means for connecting and operating the whole. 10th. A heat deflector, consisting of one or more deflecting plates, whose surfaces are convergently inclined to the axis of the smoke flue, and an annular ring with intermediate spaces for the passage of the smoke or gases. 11th. In a heat deflector, the combination of one or more deflecting plates *b, g*, having flaring surfaces, with an annular ring *d*, substantially as set forth.

**No. 42,252. Desk for Type Writing Machines.***(Pupitre pour clavigraphes.)*

Frederick Vetter, Rochester, New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The combination with the chamber of the type writer support mounted to slide within the same, and movable on a horizontal axis. 2nd. The combination with the chamber of the sliding carriage therein, and the platform adapted to receive the type writer, and sustained by said carriage on a horizontal axis.

3rd. The combination with the chamber of the sliding carriage therein, and the downwardly swinging platform sustained by the carriage. 4th. The combination with the chamber of the sliding carriage therein, the platform sustained by the carriage on the horizontal axis parallel with the movement of the same, the counter balance weight also sustained by the carriage on a horizontal axis, and suitable connections between the counter balance weight and the platform. 5th. The combination with the chamber provided with guides of the carriage movable back and forth therein, the downwardly swinging platform sustained by said carriage, the counter balance weight sustained by the carriage on a horizontal axis, the slotted arm carried by the counter balance weight, and the pin attached to the platform and engaging the slot in the arm. 6th. The combination with the desk having the transverse chamber of the sliding carriage, movable back and forth thereon, and the platform sustained by said carriage on a horizontal axis extending in the direction of the movement of the carriage. 7th. The combination of the chamber, the sliding carriage therein, the horizontal rock shaft mounted near one edge of the carriage and extended beyond the same, the platform sustained on the projecting end of the rock shaft, a second rock shaft mounted in the carriage, a counter balance weight thereon, a slotted arm carried by the second rock shaft, a pin on the platform engaging in the slot in the arm, and a retarding device adapted to rotate the movement of the platform. 8th. The combination with the chamber of the sliding carriage therein, a downwardly swinging platform sustained by the carriage, the pin projecting in its rear edge, the counter balance weight mounted in the carriage on a horizontal axis and the longitudinally and transversely slotted arm carried by the counter balance weight and adapted to receive the pin on the platform.

**No. 42,253. Tank for the Storage of Liquid.**

(*Réservoir pour l'emmagasinage des liquides.*)

John Galt, Toronto, Ontario, Canada, 11th March, 1893; 6 years.

*Claim.*—1st. An elevated tank for the storage of liquids comprising a vertical shell, a conical or dish shaped bottom, an annular bed plate connecting the said bottom to the said shell and an under structure to support said tank, substantially as described. 2nd. An elevated tank for the storage of liquids comprised of an under structure a tank consisting of a shell and bottom, and a flat annular bed plate resting upon said under structure and supporting said tank, an outer casing surrounding said tank, a space between said tank and outer casing, substantially as described. 3rd. An elevated tank for the storage of liquids comprised of an under structure, a tank supported on said under structure, said tank comprised of a vertical shell formed of a series of circular sections connected together and a dish shaped or conical shaped bottom, an annular bed plate connecting said dish shaped bottom to said vertical shell, a tubular pipe, an opening centrally through said dish shaped or conical shaped bottom in said tubular pipe, an overflow pipe, an opening at or near the top of said tank into said overflow pipe, a float located within said tank, a connecting rod passing through said float and projecting beyond the roof of the structure, said indicating rod extending down through the tank into the said tubular pipe, an outer casing located on the top of the said under structure and surrounding tank, said outer casing comprised of an inner and an outer wall with a space between them, a space between the inner side of said outer casing and the tank, a roof enclosing the tops of said outer casing, an overflow pipe in connection with a drain and an opening from the top of said tank into said overflow pipes, substantially as described.

**No. 42,254. Car Coupler. (Attelage de chars.)**

Franklin Dwight Broga, North Bay, New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The draw bar A formed with the hollow draw head A<sup>1</sup> having its cavity adapted to receive one end of the coupling link, and hollow arms B, B, extending from opposite sides of the draw head all cast in one piece of iron or steel, in combination with the spring actuated coupling pins *aa* seated in the arms BB, sheaves *bb* pivoted to the ends of said arms, shaft *c* pivoted to the draw head parallel with the coupling pins, and chains or cables *dd* passing over the sheaves and connected at the opposite ends to the coupling pins and aforesaid shaft, substantially in the manner set forth and shown. 2nd. In combination with the draw head A<sup>1</sup> provided with the hollow arms BB, spring actuated coupling pins *aa* in said arms and shaft *c* parallel with said pins, the caps *cc* removably connected to the free ends of said arms and provided with the bottom flanges *c*<sup>1</sup> and shields *c*<sup>2</sup>, the sheaves *bb* inserted between said flanges and shields and pivoted thereto, and the cables or chains *dd* running on the sheaves and connecting the coupling pins to the shaft *c*, substantially as described and shown.

**No. 42,255. Whip Lock and Socket Combined.**

(*Porte-fouet et serrure combinés.*)

Harry J. Saxton, St. Louis, Missouri, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The combined whip, lock and socket, comprising a whip socket, a lock chamber, a bolt located in said lock chamber, and having a head normally projecting into the path of a whip which may be inserted in said whip socket, and means for automatically

shooting said bolt, and manually retracting the same, substantially as set forth. 2nd. A combined whip, lock and socket, having an automatically shooting bolt adapted to lock a whip in the whip socket when said whip is inserted therein, and manual means for retracting said bolt when it is desired to release the whip, substantially as set forth. 3rd. A combined whip, lock and socket, having whip ejecting mechanism therein, the same arranged to automatically eject the whip, substantially as specified. 4th. The combined whip, lock and socket, having an automatically shooting bolt adapted to lock a whip in the socket when said whip is inserted therein, and provided with whip ejecting mechanism, the same arranged to automatically release and eject the whip, substantially as specified. 5th. A combined whip, lock and socket, comprising a whip socket 1, a lock chamber 5, in which the lower end of said whip socket is inserted, and projects a sufficient distance below the top plate of said lock chamber to form an additional separate chamber 6, a plunger 9, located in said chamber 6, and a spring 10, for urging said plunger upwardly, an automatically shooting bolt located in bearings transversely of said chamber 5, said bolt adapted to lock a whip in the whip socket, and manual means for retracting said bolt when it is desired to release the whip, substantially as set forth. 6th. The butt of a whip having a locking knob as 19, and said knob provided with two inclined surfaces 20 and 21, the surface 21, being located above the surface 20, thereby forming a shoulder 22, which is adapted to lock the whip within a whip socket, substantially as set forth.

**No. 42,256. Paper Holder. (Porte-papier.)**

Leopold Elias, Kosten, Prussia, 11th March, 1893; 6 years.

*Claim.*—1st. A paper holder consisting of single pieces, which are bent to a U-shape and the ends whereof are provided with hooks *cc*, for the purpose as described. 2nd. A paper holder consisting of single pieces, which are bent to a U-shape, and the ends whereof are provided with hooks *cc*, and which are connected one with another by means of the hooks *cc*, and of the bends *cc*, for the purpose described. 3rd. A paper holder consisting of single pieces of wire, which are bent to a U-shape, and the ends whereof are provided with hooks *cc*, and which are connected one with another by means of the hooks *cc*, and of the bends *cc*, for the purpose as described. 4th. A paper holder consisting of single pieces of wire, which are bent to a U-shape, and the ends whereof are provided with hooks *cc*, and with tablets in the middle part of the cross bar *a*, and which are connected one with another by means of the hooks *cc*, and of the bends *cc*, for the purpose as described.

**No. 42,257. Cartridge. (Cartouche.)**

William O'Hara Walker and Weldy Willberforce Walker, both of Stentenville, Ohio, and Moses F. Walker, Syracuse, New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The herein described cartridge, the same comprising an outer shell, a movable explosive carrier within the outer shell, and a rod extending from the carrier through the outer shell and provided with a lock at its outer extremity, substantially as and for the purpose set forth. 2nd. The herein described cartridge, the same comprising an outer shell, a movable carrier within the outer shell, means at one end of said shell for forcing the carrier toward the opposite end, a rod extending from the carrier through the outer shell, and lock for engaging said rod and holding the carrier against the action of said moving means, substantially as and for the purpose specified. 3rd. The herein described cartridge, the same comprising an outer shell, a movable carrier within the outer shell, means at one end of said shell for forcing the carrier toward the opposite end, a rod extending from the carrier through the outer shell, and an explosive for disengaging said lock and rod to permit the action of the carrier moving means, substantially as and for the purpose specified. 4th. The herein described cartridge, the same comprising an outer shell, a movable carrier within the outer shell, means at one end of said shell for forcing the carrier toward the opposite end, a rod extending from the carrier through the outer shell, a lock for engaging said rod and holding the carrier against the action of said moving means, an explosive for disengaging said lock and rod to permit the action of the carrier moving means, and a firing mechanism connected to bring the cartridge projecting force into action after the release of said rod, substantially as and for the purpose set forth. 5th. The herein described cartridge, the same comprising an outer shell, a movable carrier within the shell, an exhaust air chamber in front of and a compressed air chamber in the rear of the carrier, a rod extending from the carrier through the outer shell, and a lock for engaging said rod and holding the carrier against the action of said moving means, substantially as and for the purpose set forth. 6th. The herein described cartridge, the same comprising an outer shell, a movable carrier within the shell, a vacuum chamber and a compressed air chamber above and below the carrier, a rod extending from the carrier through the outer shell, a lock for engaging said rod and holding the carrier against the action of said moving means, an explosive for disengaging said lock and rod to permit movement of the carrier, and a firing mechanism connected to bring the cartridge projecting force into action after the release of said rod, substantially as and for the purpose speci-

7th. In a cartridge, the combination of an outer shell having a normally closed opening, an inner shell having an opening, to permit the passage of the air from the inner to the outer shell, a closed carrier shell movable beneath the opening in the inner shell, an opening in the front end of the outer shell, and a rod secured to the carrier and movable through the front opening, substantially as and for the purpose set forth. 8th. In a cartridge, the combination of an outer shell, having a normally closed opening, an inner shell having an opening to permit the passage of the air from the inner to the outer shell, a closed carrier shell movable beneath the opening in the inner shell, an opening in the front end of the outer shell, a rod secured to the carrier and movable through the front opening, seats on the outer shell, supports mounted in said seats, and a stop on said supports for engaging the outer end of said rod, substantially as and for the purpose specified. 9th. In a cartridge, the combination of an outer shell having a normally closed opening, an inner shell having an opening to permit the passage of the air from the inner to the outer shell, a closed carrier shell movable beneath the opening in the inner shell, an opening in the front end of the outer shell, a rod secured to the carrier and movable through the front opening, seats on the outer shell, pivoted levers having one end engaging said seats and the other end adapted to carry an explosive for separating said levers, and a stop on said supports for engaging the outer end of said rod, substantially as and for the purpose specified. 10th. In a cartridge, the combination of an outer shell having a normally closed opening, an inner shell having an opening to permit the passage of the air from the inner to the outer shell, a closed carrier shell movable beneath the opening in the inner shell, an opening in the front end of the outer shell, a rod secured to the carrier and movable through the front opening, seats on the outer shell, pivoted levers having one end engaging said seats and the other adapted to carry an explosive for separating said levers, a stop on said levers for engaging the outer end of said rod, levers connected to the former levers, and opposite poles of an electric circuit mounted on said latter levers, substantially as and for the purpose set forth. 11th. In a cartridge, the combination of an outer shell, an inner shell, a closed carrier movable within the inner shell and formed of less cross sectional area than the inner shell, yielding supports between the carrier and inner shell, and a rod extending from the carrier through the outer shell, and a lock for engaging the outer end of said rod, substantially as and for the purpose set forth. 12th. In a cartridge, the combination of an outer shell having a normally closed opening, an inner shell having an opening to permit the passage of the air from the inner to the outer shell, a closed carrier shell movable beneath the opening in the inner shell, said carrier being of less cross sectional area than the inner shell, yielding supports between the carrier and inner shell, and a rod extending from the carrier through the outer shell, substantially as and for the purpose specified.

**No. 42,248. Swinging Support for Basins.**

(Support mobile pour bassin.)

William Baxter Malcolm, Toronto, Ontario, Canada, 11th March, 1893; 6 years.

*Claim.*—1st. A basin fixed to a block connected to the parallel bars D, E, by means of the journal pins described in combination with a head supported in a vertical journal and having horizontal journals in which the journal pins of the parallel bars are carried, substantially as and for the purpose specified. 2nd. A basin fixed to a block connected to the parallel bars D, E, the inner ends of which are carried in horizontal journals formed in a revolvable head in combination with the ratchet wheel L, and pawl M, arranged substantially as and for the purpose specified.

**No. 42,250. Machine for Setting Tires.**

(Diable de forge.)

Isaac Lehmann, Ashcroft, British Columbia, Canada, 11th March, 1893; 18 years.

*Claim.*—The combination of an immersible platform A, swinging on its four iron supports f, and the one operating lever L, with its locking clevis V, and depressing pawl r, substantially as and for the purpose herebefore set forth.

**No. 42,260. Twister and Shuttle Spooler Combined.**

(Tordoir et espoir de navette combinés.)

William Houghton, Paris, Ontario, Canada, 11th March, 1893; 6 years.

*Claim.*—1st. A machine arranged to give any desired twist to yarn taken from a bobbin and to simultaneously wind the said yarn upon a shuttle spool ready for the loom, substantially as and for the purpose specified. 2nd. A machine having a series of bobbins revolved as the yarn is drawn from them, each piece of yarn from the spool being evenly and regularly guided by the reciprocating yarn guide on to a shuttle spool, which is revolved by contact with a rotating miller, substantially as and for the purpose specified. 3rd. A series of spindles F, each spindle carrying a bobbin of untwisted yarn and deriving motion from independent cords driven by the drum C, and deriving a variable rotating motion from the driving shaft of the

machine, in combination with a series of rollers U, revolved by the shaft V, and caused to revolve the spool K, substantially as and for the purpose specified. 4th. A series of spindles F, each spindle carrying a bobbin of untwisted yarn, and deriving motions from independent cords driven by the drum C, and deriving a variable rotating motion from the driving shaft of the machine, in combination with a series of rollers U, revolved by the shaft V, the shuttle spool K, carried on the pivoted bracket S, and revolved by resting upon the revolving roller U, substantially as and for the purpose specified. 5th. A series of spindles F, each spindle carrying a bobbin of untwisted yarn and deriving motion from independent cords driven by the drum C, and deriving a variable rotating motion from the driving shaft of the machine, in combination with a series of rollers U, revolved by the shaft V, the shuttle spool K, carried on the pivoted bracket S, and revolved by resting upon the revolving roller U, the guiding plate J, carried on the bar I, which derives a longitudinal reciprocating motion from the revolving of the cam O, substantially as and for the purpose specified.

**No. 42,261. Curtain Rod. (Porte-rideaux.)**

Pullman's Palace Car Company, assignee of Henry Howard Sessions, all of Chicago, Illinois, U.S.A., 11th March, 1893; 12 years.

*Claim.*—1st. A curtain rod for sleeping car berths, supported upon swinging arms pivotally connected to the car structure, and adapted to be swung into the berth space, substantially as described. 2nd. A curtain rod for sleeping car berths, supported upon swinging arms pivotally connected to the car structure, and adapted to be swung in the berth space so as to be concealed when the berth is made up, and suitable means for locking the rod in its extended position, substantially as described. 3rd. The combination, with the permanent partition walls between the upper berths of sleeping cars, of bracket studs projected from said walls, arms pivoted to said studs, and a rod carried by said arms toward their free ends, and adapted to be swung into the berth space between the partition walls, substantially as described. 4th. The combination, with sleeping cars, of curtain rods supported upon swinging arms pivotally connected to the car structure, and spring actuated locking bolts adapted to engage the arms and connected to a pivoted plate, whereby they may be simultaneously disengaged, substantially as described.

**No. 42,262. Curtain Rod. (Porte-rideaux.)**

Pullman's Palace Car Company, assignee of Henry Howard Sessions, all of Chicago, Illinois, U.S.A., 11th March, 1893; 12 years.

*Claim.*—1st. A curtain rod for sleeping car berths, supported upon the ends of arms whose opposite ends are adapted to slide in ways fixed to the walls of the upper berth space, substantially as described. 2nd. A curtain rod for sleeping car berths, supported upon the ends of arms, ways secured to the walls of the upper berth space, and said arms having a bearing on said ways, substantially as described. 3rd. A curtain rod for sleeping car berths, supported upon the ends of arms, ways formed by castings secured to the wall of the upper berth space and curved to conform thereto, an anti-friction roller travelling in said ways and connected with the ends of the arms, and suitable means for supporting said rod and arms with the curtains, substantially as described.

**No. 42,263. Process of Treating Sugar.**

(Procédé de traitement du sucre.)

Honourable George Alexander Drummond, Montreal, Quebec, Canada, assignee of Carl Steffen, Vienna, Austria, 11th March, 1893; 18 years.

*Claim.*—My improved process characterized by internally mixing the warm sugar mass as it comes from the vacuum pan or apparatus with poor molasses, and cooling the homogeneous mass whilst stirring so as to cause the crystals in the mother liquid to adhere to or become deposited on the sugar crystals previously formed in order to produce large crystals, then treating the mass in a lixiviating battery, whereby the entire crystallizable sugar is worn, and the mother liquor deprived of its crystals is passed off with the molasses, and can be again used for mixing such sugar mass in a subsequent operation, substantially as set forth, in the foregoing specification.

**No. 42,264. Truck for Moving Houses.**

(Diable pour transporter les maisons.)

Alexander G. Kent and Jacob H. Fisher, both of Solon, Iowa, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. In a house moving truck, as described, the combination, with a truck frame and its supporting rollers, of the metal bar 21, having the apertures 21<sup>a</sup>, the brake shoes bolted to the under side of said bars, the bolts 24, passing up through the apertures 21<sup>a</sup>, and having their upper ends threaded, the coiled springs 25, encircling the bolts 24 beneath the bars 21, and the hand nuts 26, mounted on the threaded ends of the bolts, substantially as specified. 2nd. The combination, with the beam 10, the curvilinear rack 13, having the series of slots 13<sup>a</sup>, the arms 11, connected to the beams 10, and taking through the slots of the rack, and nuts mounted on the threaded ends of the said arms, of the rear



truck 2, pivotally connected to the beam 10, and the tongue 8, connected to and extending forwardly from said rear truck and having a pin at its free end, adapted to engage the rack 13, substantially as set forth. 3rd. The pivoted rear truck 2 and the tongue 8, connected to and extending forwardly from the rear truck and having a pin at its free end, in combination with the rack 13, having the series of slots 13<sup>a</sup>, the arms 11, taking through the slots of the rack 13, and the nuts mounted on the threaded ends of the said arms, substantially as and for the purpose set forth.

**No. 42,265. Cow Milking Machine.**

(Appareil pour traire les vaches.)

Johan D. Frederiksen, Little Falls, New York, U.S.A., assignee of Jens Severin Jensen, Thisted, Denmark, 11th March, 1893; 6 years.

*Claim.*—1st. The combination, with a suction pump having induction and eduction valves, of an automatic relief valve whereby air is admitted to the pump cylinder, and the suction is regulated, substantially as set forth. 2nd. The combination, with a suction pump having induction and eduction valves, of an automatic relief valve whereby air is admitted to the pump cylinder, and a spring and nut whereby the load on the relief valve can be adjusted, substantially as set forth. 3rd. The combination, with a suction pump having induction and eduction valves, of an automatic relief valve, arranged in the piston of the pump, substantially as set forth. 4th. The combination, with a suction pump, of an automatic relief valve means whereby the load on the valve can be adjusted, and a stop whereby the adjustment of the load is limited, substantially as set forth. 5th. The combination, with a suction pump, of a relief valve, a spring bearing upon the same, a screw nut whereby the spring is adjusted, and a stop whereby the tightening movement of the nut is limited, substantially as set forth. 6th. The combination, with the suction pump, of a relief valve, a spring bearing upon the same, a screw nut whereby the spring is adjusted, and a stop whereby the releasing movement of the nut is limited, substantially as set forth. 7th. The combination, with the suction pump, of a relief valve, a spring bearing upon the same, a screw nut whereby the spring is adjusted, and stops on both sides of the nut whereby the movement of the nut in either direction is limited, substantially as set forth.

**No. 42,266. Air Compressing Pump.**

(Pompe de compression.)

The Genett Air Brake Company, Chicago, Illinois, assignee of Louis J. Genett, Marquette, Michigan, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The combination, with the cylinder and the suction and discharge valve chests of an air compressing pump, of a pair of suction valves and a pair of discharge valves arranged in the valve chest, a cylinder located in the valve chest between the suction and discharge valves, a piston arranged in the cylinder exposed to the air pressure created by the pump, and held against said pressure by a spring, and levers actuated by the piston to simultaneously unseat the two suction valves when an excess of air pressure moves the piston against the tension of the spring, substantially as described. 2nd. The combination, with the cylinder and the suction and discharge valve chest of an air compressing pump, of a pair of suction and a pair of discharge valves in the valve chest, a cylinder located within the valve chest between the suction and discharge valves, and opening at its upper portion into the ports leading from the discharge valves to the discharge pipe, a piston arranged in the cylinder exposed to the air pressure created by the pump, and held against said air pressure by a spring, and oscillating levers acting at one end upon the suction valves, and at the opposite end acted upon by the piston in its downward movement against the tension of the spring when an excess of pressure moves the piston, substantially as described. 3rd. The combination, with the cylinder and the discharge and suction valve chest of an air compressing pump, of a pair of suction valves and a pair of discharge valves in the valve chest, a cylinder located within the valve chest between the suction and the discharge valves, a nut in one end of the cylinder, a piston arranged in the cylinder having a piston rod passing through the nut and exposed to the air pressure created by the pump, a spring interposed between the piston and the nut, a collar secured to the piston below the nut, and a pair of oscillating levers pivoted to the valve chest, and provided respectively with pivoted pins to lift the suction valves when the piston is moved downward against the tension of the spring by an excess of air pressure, substantially as described.

**No. 42,267. Spring Pillow. (Resort pour oreillers.)**

Morris Lary, New York, assignee of William Henry Lewis, Rome, both in the State of New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. In a spring pillow, the covering A, a set of springs B therein consisting of a plurality of rows of connected springs C, C, the end springs of each row being secured directly to said covering, as by stitching *g*, whereby displacement of the set of springs is prevented. 2nd. In a spring pillow, a set of springs B, a longitudinal spring *k*, and a connecting head F, consisting of a shank portion *l*, embracing the end of said longitudinal spring, and a link portion *m*,

embracing the adjacent sides of the end springs of the rows by being bent there around. 3rd. In a spring pillow, a set of springs B, consisting of a plurality of rows of springs C, C, the longitudinal spring *k*, a connecting head F, consisting of a wire bent on itself, and having the shank portion *l* entering the end of said spring *k*, and the link portion *m*, embracing the adjacent sides of the end springs C, C, of the rows. 4th. In a spring pillow, a set of springs B, consisting of a plurality of rows of springs C, C, and the longitudinal spring *k*, a connecting head F, consisting of a wire bent on itself, and having the shank portion *l*, and constructed with an eye *n*, at one of its free ends, embracing the adjacent springs C, C, at the ends of the rows, and with an eye *o* at its other free end, embracing said springs, and the end on which said eye *n* is carried. 5th. In a spring pillow, a plurality of rows of springs C, C, intermediate longitudinal springs *k*, and a lateral tape D, coupled to said springs C, C, and consisting of a single thickness of tape constructed with a *k* *o* *p* at its inner side embracing said spring *k*.

**No. 42,268. Pump. (Pompe.)**

The National Vacuum Drying and Air Distilling Company, assignee of Adolph Bornholdt, all of Brooklyn, New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. The combination with the receiving tank or vessel, and the pump cylinder opening at one end into the lower part thereof, and provided at the other end with an inlet valve, and with a discharge valve controlling communication between the cylinder and vessel, the cylinders being provided with a series of jet openings near the inlet valve, substantially as described. 2nd. The combination of the receiving tank or vessel, a pump cylinder and piston, said cylinder having an inlet valve, and a discharge valve controlling communication with said vessel, the suction pipe leading to said inlet valve, and a pipe for liquid leading from said tank or vessel to said suction pipe, substantially as described. 3rd. The combination of the receiving tank or vessel, the pump cylinder having inlet and outlet valves, the suction pipe, a pipe for supplying liquid from said tank to said suction pipe, and a branch pipe beneath the main suction pipe conveying liquid matters to the cylinder by a separate inlet, substantially as described. 4th. The combination of the receiving tank or vessel, having at the top a discharge pipe containing a check valve, a separate pipe for liquid connected with said discharge pipe above the check valve, a pump cylinder, a suction pipe communicating therewith, a pipe for conveying liquid from the tank to the suction pipe, and inlet valves between the suction pipe and cylinder, and an outlet valve between the cylinder and tank, substantially as described.

**No. 42,269. Supply Station for Car Heating systems. (Station d'approvisionnement pour système de chauffage des chars.)**

The Consolidated Car Heating Company, Wheeling, West Virginia, U.S.A., assignee of James Finney McElroy, Albany, New York, U.S.A., 11th March, 1893; 6 years.

*Claim.*—1st. A supply station for a car heating system, in which a receptacle on the car is periodically supplied with a heating medium, said station comprising a fluid heater, a circulating system of piping extending to within proximity of the track, a pump in said circulating system, valves for connecting the outgoing and return pipe of said system with the car, a well in which said valves are located, and cover for said well controlling the action of the pump, substantially as described. 2nd. In a supply station for car heating systems, the combination, with a heater, of outgoing and return pipes communicating therewith, means for connecting said pipes to tanks on a car, a pump in the return pipe, a pipe leading from a water supply to the pump, a valve located in said pipe, an arm on the valve, a casing for the outer ends of the outgoing and return pipes, means for gaining access to said casing, and a connection between said means and an arm on the valve in the water supply pipe, substantially as described.

**No. 42,270. Road Cart. (Désobligeante.)**

James Scouler, Forest, and John Mason, Township of Bosanquet, all in Ontario, Canada, 13th March, 1893; 6 years.

*Claim.*—1st. The crank shaft E, formed with the crank arms *g*, and the body B, in combination with the jacks J, springs C, C, and axle A, substantially as shown and described, and for the purpose specified. 2nd. The crank shaft E, formed with the crank arms *g*, the body B, the jacks J, formed with the holes *n*, the springs C, C, and the axle A, in combination with the crank shaft G, formed with the crank arms *g*, the cross bar D, and the shafts S, S, substantially as shown and described and for the purpose specified.

**No. 42,271. Method of Making Boots and Shoes.**

(Méthode de fabrication de chaussures.)

The Boston Footwear Machine Company, Boston, assignee of George Whitefield Day, Haverhill, all in Massachusetts, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. The herein described method of making boots and shoes, the same consisting in attaching the upper to the sole right side out, and then trimming off the surplus edge of the upper from

the inside, substantially as described. 2nd. The herein described method of making boots and shoes, the same consisting in attaching the upper to the sole right side out and then cutting the surplus upper on an oblique or slanting line and removing the same, substantially as described.

**No. 42,272. Cutting Heads. (Porte-lames.)**

Warren B. Huther and Agnes E. Huther, both of Rochester, New York, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. The herein described circular disc B, provided with a major tooth B<sup>1</sup>, having one side B<sup>2</sup>, arranged in a plane substantially parallel with the plane of movement of said disc, and having its other side B<sup>3</sup>, inclined from its base towards its top whereby the top of said tooth is of less thickness than its base, said major tooth B<sup>1</sup>, having its top edge provided with a series of minor teeth b, formed with front and rear sides b<sup>2</sup>, b<sup>3</sup>, inclining downwardly from the former side B<sup>2</sup>, of the major tooth B<sup>1</sup>, towards the inclined side B<sup>3</sup>, of said tooth, and formed also with a sharp top edge b<sup>4</sup>, inclining in the same direction as the front and rear sides b<sup>2</sup>, b<sup>3</sup>, substantially as and for the purpose set forth. 2nd. The herein described circular disc B, provided with a major tooth B<sup>1</sup>, having one side B<sup>2</sup>, arranged in a plane substantially parallel with the plane of movement of said disc, and having its other side B<sup>3</sup>, inclined from its base towards its top whereby the top of said tooth is of less thickness than its base, said major tooth B<sup>1</sup>, having its top edge provided with a series of minor teeth b, formed with front and rear sides b<sup>2</sup>, b<sup>3</sup>, inclining downwardly from the former side B<sup>2</sup>, of the major tooth B<sup>1</sup>, towards the inclined side B<sup>3</sup>, of said tooth, and a second major tooth E, at the rear of the former tooth B<sup>1</sup>, having a top cutting edge of substantially the same width as the base of said former major tooth B<sup>1</sup>, substantially as and for the purpose specified. 3rd. The herein described circular disc B, provided with a pair of major teeth B<sup>1</sup>, B<sup>2</sup>, one in advance of the other having two of their opposite sides B<sup>3</sup>, B<sup>4</sup>, arranged in a plane substantially parallel with the plane of movement of said disc, and having their other two sides B<sup>5</sup>, B<sup>6</sup>, inclined from their bases towards their tops, whereby the tops of said teeth B<sup>1</sup>, B<sup>2</sup>, are of less thickness than their bases, said major teeth B<sup>1</sup>, B<sup>2</sup>, having their top edges provided with a series of minor teeth b, b<sup>1</sup>, having their respective front and rear sides b<sup>2</sup>, b<sup>3</sup>, b<sup>4</sup>, b<sup>5</sup>, inclining downwardly from the former sides B<sup>3</sup>, B<sup>4</sup>, of the major teeth B<sup>1</sup>, B<sup>2</sup>, towards the inclined sides B<sup>5</sup>, B<sup>6</sup>, of said teeth and an additional major tooth E, at the rear of one of the former major teeth, having a top cutting edge of substantially the same width as the bases of the former major teeth, substantially as and for the purpose set forth. 4th. The combination of a spindle A, a pair of circular discs B, C, each being provided with a series of major teeth, having two of their opposite sides arranged in planes substantially parallel with the plane of movement of said discs, and having their other sides inclined from their bases towards their tops, whereby the tops of said teeth are of less thickness than their bases, said major teeth being provided at their top edges with a series of minor teeth formed with their front and rear sides inclining downwardly from the former sides of the major teeth towards the inclined sides of said teeth, additional major teeth arranged at intervals on said discs, between the former major teeth, and formed with top cutting edges of substantially the same width as the bases of said former major teeth, and cutting plate D, mounted on said spindle A, and formed at one of its ends with a cutting edge d<sup>1</sup>, of substantially the same width as the distance between said circular discs B, C, substantially as and for the purpose specified.

**No. 42,273. Cultivator. (Scarificateur.)**

George Bennett Davison and Edward Morris, both of Utica, New York, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. A cultivator having its teeth connected longitudinally adjustable to the frame, as set forth. 2nd. In a cultivator, a tooth attachment consisting of a shoe mounted longitudinally adjustable on the frame, and the tooth secured to said shoe, as set forth. 3rd. The combination with the cultivator frame, of a shoe provided with a longitudinal seat for the draft bar of the frame, and with shoulders engaging opposite edges of said bar, and also with a longitudinal channel through its interior, a clip securing said shoe to the frame, and the tooth having its shank extending through the channel of the shoe and secured therein, as set forth. 4th. In combination with the frame, the tooth provided with an attaching shank curved in a vertical plane parallel with the line of draft, a shoe secured to the frame and formed with a longitudinal channel curved to conform to the aforesaid shank and receiving the same through it, and a clamping device retaining said shank in the shoe, as set forth. 5th. In combination with the frame, the tooth shank curved in the form of a segment of a circle in a vertical plane, a shoe attached to the frame and provided with a longitudinal channel curved to conform to the aforesaid shank end receiving the same through it, and a set screw retaining the shank in the shoe, all constructed and combined to maintain the point of the tooth a uniform distance beneath the frame during the adjustment of said tooth to various angles of inclination, as set forth. 6th. In combination with the oblique draft bar of the frame, and the tooth having its attaching shank curved in a vertical plane parallel with the line of the draft, a shoe provided with a correspondingly curved channel receiving through it the tooth shank, and formed with a seat for the

draft bar diagonal to the aforesaid channel, and a clip securing said shoe to said bar, as set forth and shown. 7th. In combination with the frame, and the tooth having its attaching shank arched in a vertical plane, a shoe secured to the under side of the frame, and formed with a correspondingly arched longitudinal channel for the reception of the aforesaid shank, and having the central portion of the top of said channel extending through the top of the shoe to bring a portion of the tooth shank to bear on the frame, as set forth. 8th. In combination with the frame, and the attaching shank of the tooth, a shoe provided with a channel for the reception of said shank and seated on the frame rotary in a horizontal plane, and a clamp securing the shoe in its position, as set forth. 9th. In combination with the frame, and the attaching shank of the tooth, a shoe provided with a channel for the reception of said shank, and formed with a horizontal plate and with segmental slots in said plate, and bolts passing through said slots and fastening the plate to the frame, as set forth. 10th. In combination with the frame, and the attaching shank of the tooth, a shoe provided with a channel for the reception of said shank, and formed with a horizontal plate on its top and with segmental slots in said plate, a washer seated upon said plate and on the under side of the draft bar, and provided with shoulders at opposite sides of said bar, a clip tie seated upon the top of the draft bar, and bolts connected to the clip tie and passing through the segmental slots of the aforesaid plate, and securing the same in its position, as specified. 11th. In combination with the draft bar and tooth shank, the shoe C, formed with the channel C<sup>1</sup>, top plate C<sup>11</sup>, annular rib u, and segmental slots u<sup>1</sup>, u<sup>1</sup>, the washer v, formed with the annular groove v<sup>1</sup>, and apertures v<sup>11</sup>, v<sup>11</sup>, the clip tie t, formed with the groove t<sup>1</sup>, and ears T<sup>11</sup>, T<sup>11</sup>, and the bolts p, p, passing through said ears and through the apertures of the washer and slots of the shoe top plate, substantially as described and shown. 12th. In combination with the frame, tooth shank, and attaching clip and bolts, the metal shoe C, consisting of a single casting formed with the arched channel C<sup>1</sup>, through the interior, screw threaded eye j, through its side, flanges n, n, on its top, and ears n<sup>1</sup>, n<sup>1</sup>, on opposite sides of its top, and the set screw o, in the eye j, substantially as described and shown. 13th. In combination with the frame and tooth shank, the metal shoe C, formed with the channel C<sup>1</sup>, parallel flanges n, n, on its top, and ears n<sup>1</sup>, n<sup>1</sup>, on opposite sides of the top, the clip tie t, formed with the groove t<sup>1</sup>, in its underside, and ears t<sup>11</sup>, t<sup>11</sup>, on opposite side of the groove, and the bolts p, p, passing through the ears of the clip tie and of the shoe, and provided with nuts for securing said parts to the frame, substantially as specified and shown. 14th. A cultivator having the diagonal draft bars A<sup>1</sup>, A<sup>1</sup>, formed straight longitudinally, the shoe C, seated movably longitudinally on the underside of the draft bar, and formed with shoulders or flanges n, n, engaging opposite sides of said bar, and with the internal channel C<sup>1</sup>, beneath the draft bar and diagonal to the flanges, screw threaded eye j through its side, and ears n<sup>1</sup>, n<sup>1</sup>, on its top, the tooth shank passing through the channel C<sup>1</sup>, the set screw o, in the eye engaging the side of the draft bar, the clip tie t, formed with the groove t<sup>1</sup>, and ears t<sup>11</sup>, t<sup>11</sup>, and bolts p, p, passing through the aforesaid ears and securing the shoe to the frame, substantially as described and shown. 15th. The combination with the laterally adjustable draft bars, of racks attached to said bars and extending with their free ends past each other, and a pinion between the lapping ends of said racks, and engaging the same, as and for the purpose set forth. 16th. The combination with the central draft bar and laterally adjustable side draft bars, of racks attached to said side draft bars and extending with their free ends past each other, a journal secured to the central draft bar, a pinion mounted on said journal and engaging the racks, a vertical shaft attached to said pinion, a brace supporting the upper end of the shaft, and a lever on said end of the shaft for turning the same, as set forth. 17th. The combination, with the adjustable side draft bars, of straight racks hinged to said bars and having their free ends extending past each other, and a pinion between said ends of the racks, as described and shown. 18th. The combination, with the central draft bar and laterally adjustable side draft bars, of the plate a, secured to the central draft bar and formed with the journal b, and yoke c, the shaft d, passing vertically through said yoke, pinion e, on the shaft beneath the yoke and seated on said journal, the lever f, attached to the upper end of the shaft, and the racks g, g, connected to the side draft bars and passing through the aforesaid yoke and engaging the pinion, as and for the purpose set forth. 19th. The combination with the central bar A, and adjustable side bars A<sup>1</sup>, A<sup>1</sup>, of the plate a, secured to the said central bar and formed with the journal o, yoke c, and guides h, h, the pinion e, mounted on said journal, the shaft d, journaled in the yoke and secured to the pinion, the lever f, attached to said shaft, and the racks g, g, extending from the side bars through the guides h, h, and engaging the pinion, substantially as described and shown. 20th. In combination with the adjustable side bars A<sup>1</sup>, A<sup>1</sup>, racks g, g, pinion e, and shaft a, the lever f, swivelled on said shaft, the crown wheel i, fixed to the shaft and provided with a plurality of lever holding bearings i<sup>1</sup>, i<sup>1</sup>, substantially as and for the purpose set forth. 21st. In combination with the adjustable side bars A<sup>1</sup>, A<sup>1</sup>, racks g, g, pinion e, and shaft d, the collar k, swivelled on said shaft and provided with ears k<sup>1</sup>, k<sup>1</sup>, the lever f, hinged to said ears, the crown wheel l, fixed to the shaft and provided with notches i<sup>1</sup>, i<sup>1</sup>, and the catch l, adapted to confine the free end of the lever f, substantially as set forth and shown.

**No. 42,274. Manufacture of Ammonia and Gas.***(Fabrication d'ammoniaque et de gaz.)*

The Hemm Process Company of Ridgely, assignee of Alphonse Hemm, of Springfield, Ill., U.S.A., 13th March, 1893; 6 years.

*Claim.*—The process of simultaneously and continuously making gas and ammonia, which consists in injecting air, or oxygen, and steam into a bed of incandescent fuel, controlling the temperature of the generator, first by introducing such proportions of steam and oxygen, or air, as to maintain a zone of combustion at a temperature sufficient to reduce the carbonic oxide C, O, practically all the carbonous oxide C, O<sup>2</sup>, formed by the complete combustion of the fuel, and to decompose practically all the steam so introduced in the blast, and second, by regulating the supply of fresh fuel to maintain beyond the zone of combustion a zone of distillation, cool enough not only to allow the formation of ammonia, but to prevent the disassociation of that already formed, leading off the ammonia and gas and separating them by condensers, washers or other suitable means, substantially as described.

**No. 42,275. Flax Harvester. (Moissonneuse pour le lin.)**

Wesley Morrow, of Millbrook, Ontario, Canada, 13th March, 1893; 6 years.

*Claim.*—1st. A series of fingers arranged in pairs around a shaft suitably journaled upon a support carried near the ground, each finger being acted upon by a spring so as to hold the members of each pair apart, in combination, with means for guiding the flax between the fingers and means for forcing the members of each pair of fingers together so as to grasp the flax forced between them, substantially as and for the purpose specified. 2nd. The shaft C, supported in suitable bearings on the grain table B, and geared to the driving mechanism of the harvester so as to derive a rotary movement, the fingers G, pivoted in pairs, around the shaft C, each finger being actuated by a spring H, in combination, with the inwardly curved spring plates E, substantially as and for the purpose specified. 3rd. The shaft C, supported in suitable bearings on the grain table B, and geared to the driving mechanism of the harvester so as to derive a rotary movement, the fingers G, pivoted in pairs around the shaft C, each finger being actuated by a spring H, in combination with the brackets D, noses b, and spring plates E, substantially as and for the purpose specified.

**No. 42,276. Mechanical Movement.***(Mouvement mécanique.)*

Charles Dunsford Jenkins, Boston, Massachusetts, U. S. A., 13th March, 1893; 6 years.

*Claim.*—The mechanical movement described by the mechanism, consisting of a rotary shaft having one or two eccentrics or cranks, a pair of straps pivoted to the latter, and a pair of toggles connected to said straps, such toggles consisting each of two parts, one of which is pivoted on a stationary fulcrum, and the other pivoted to the object to which the gyratory motion is to be conveyed, substantially as set forth.

**No. 42,277. Filter. (Filtre.)**

Junius A. Bowden, Detroit, Michigan, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. In a filter the combination with its case, of a water inlet pipe at its top, a horizontal rotating wash pipe at the bottom of the filter bed, a shield beneath the wash pipe and a horizontal perforated strainer beneath the shield, substantially as described. 2nd. In a filter, the combination of a case, a water inlet at the top, a horizontal rotating wash pipe at the bottom of the filter bed, a surface wash at the top of the filter bed, a shield beneath the filter bed and a horizontal perforated strainer beneath the shield, substantially as described. 3rd. In a filter, the combination, with its case, of a water inlet pipe a horizontal rotating wash pipe at the bottom of the filter bed, a shield beneath the filter bed, a drain pipe, and a horizontal perforated strainer beneath the shield, substantially as described. 4th. In a filter, the combination, with its case, of a water inlet pipe at its top, a horizontal rotating wash pipe at the bottom of the filter bed, a shield beneath the latter, a drain pipe adapted to drain off water above the surface, a horizontal perforated strainer beneath said shield, and an air vent valve located above the surface of the filter bed, substantially as described. 5th. The combination, with a filter, of one or more horizontal wash pipes F located near the bottom of the filter bed, each provided with a row of perforations, and adapted to be rotated by means projecting to the exterior of the filter case, substantially as described. 6th. The combination, with a filter, of a strainer G at the base of the filter, provided with an interior nozzle communicating with the filtered water outlet, said nozzle provided with an extension to the exterior of the case, whereby the nozzle may be rotated and its discharge orifices brought successively opposite every portion of the perforated strainer, substantially as and for the purpose described. 7th. The combination, with a perforated strainer and in-

terior nozzle, with means for rotating the nozzle as described, of an opening or openings g and valve G<sup>3</sup>, the stem of said valve projecting to the exterior of the case, whereby the valve may be caused to open or close the said orifices at the will of the operator, substantially as described. 8th. The filter wash pipe F provided with a row of perforations and an interior valve adapted to open and close said perforations, said valve provided with a stem extending to the exterior of the filter case, whereby said valve is actuated, substantially as described. 9th. The combination of a filter of a fixed centrally located surface wash at the top of a filter bed, horizontally perforated and adapted to direct its stream of wash water in a horizontal direction across the top of the surface of the bed from the centre toward the sides of the case, substantially as described. 10th. The combination, with a filter, of a fixed centrally located surface wash at the top of the filter bed, horizontally perforated and adapted to direct its stream of wash water in a horizontal direction across the top surface of the bed from the centre toward the sides of the case, and a drain pipe located at the surface of the filter bed, substantially as and for the purpose described.

**No. 42,278. Photographic Camera.***(Camera photographique.)*

Daniel James Tapley, Newton, New Jersey, U.S.A., 13th March, 1893; 18 years.

*Claim.*—1st. The lens block C, supplementing the tubular opening i, in the camera front, forming a lens seat and section of lens tube, as described. 2nd. The swinging or sliding cap and diaphragm A, in combination with the lens tube i, and lens L, as described. 3rd. The outer case combining the functions of satchel and light shield in combination with the lens and exposing device, as described.

**No. 42,279. Propelling Device for Electric Cars.***(Appareil de propulsion pour chars électriques.)*

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 13th March, 1893; 6 years.

*Claim.* 1st. The combination, with a shaft or axle, of a wheel rigidly mounted thereon, a band passing around said wheel, a plate adjacent to the periphery of the wheel, a pivot for said plate and a suitable support therefor, one end of the band being connected to the plate above its pivot, and the other end of the band being connected to the plate below its pivot, and means for reciprocating said plate, whereby when moved in one direction the band is loosened, and when moved in the opposite direction, the band is tightened and turns said wheel, substantially as described. 2nd. The combination of a shaft or axle, clutch wheels rigidly mounted thereon, a band passing around each wheel and connected to plates on opposite sides of their pivots, and means for reciprocating said plates alternately, substantially as described. 3rd. The combination of a shaft or axle, clutch wheels mounted thereon, a band passing around each wheel and each connected to a plate on opposite sides of its pivot, means for turning said plates on their pivots, limiting stops for the plates, and mechanism for reciprocating the plates alternately, substantially as described. 4th. The combination of the propelling rod, a clutch wheel, a band extending around the clutch wheel, a plate adjacent to the periphery of the clutch wheel, a pivot for said plate, two posts on said plate, one on each side of the pivot, one end of the band being connected to one post and the other end to the second post, and means for limiting the movement of the plate on its pivot, substantially as described. 5th. The combination of a wheel mounted on a shaft or axle, a plate adjacent to the periphery of said wheel, a chain passing around the wheel and connected to the plate on two sides of its pivot, and means for turning the plate on its pivot and reciprocating it, whereby the chain is loosened when moved in one direction, and is tightened and turns the wheel when the plate is moved in the opposite direction, substantially as described. 6th. The combination of the motor shaft, having oppositely placed crank arms, propelling rods operated thereby, and the clutches, each composed of a clutch wheel and chain passing around the wheel and connected to a plate adjacent to the periphery of the wheel and reciprocated by the motor, substantially as described. 7th. The combination of the clutch wheel, the pivoted plate adjacent to its periphery, having two posts arranged on opposite sides of the pivot, and a band composed of several separately removable strands connected to said posts, substantially as described. 8th. The combination, with the motor shaft, of a vehicle and reciprocating pitman connected to the shaft, means for raising and lowering the said head, whereby the speed may be varied without changing the speed of rotation of the motor shaft, of a connection between the propelling rod and vehicle axle, consisting of a clutch wheel and an arm centered on the axle, a plate adjacent to the periphery of the wheel and carried by said arm, a band passing around the wheel and connected to the plate on opposite sides of its pivot, and means for reciprocating the plate, substantially as described. 9th. A clutch wheel, in combination with a chain passing around the wheel and anchored to a reciprocating plate, said chain being made of links pivoted together, their inner or working faces being notched, substantially as described.

**No. 42,280. Crank Axle for Wheeled Vehicles.***(Axe coudré pour voitures à roues.)*

Melville L. Dewitt, Sprague's Mills, Maine, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. In a crank axle for forward wheels, an axle proper having a set off therein, bars attached to said axle and at right angles thereto, metal plates attached to the sides of said bars and having their forward ends turned up, and a pole pivotally attached to the forward ends of said bars, substantially as and for the purposes set forth. 2nd. In a crank axle for forward wheels, an axle proper having a set off therein, parallel bars rigidly secured to said set off portion of the axle and at right angles thereto, and having on top thereof circle irons for supporting the vehicle body, metal plates attached to the sides of said bars and having their forward ends turned up, a rod set in said forward ends, and a pole pivotally attached to said rod between said bars, substantially as and for the purposes set forth. 3rd. In a crank axle for forward wheels, and axle proper having a set off therein, parallel bars rigidly secured to said set off portion of the axle and at right angles thereto and having their front ends turned upward, a rod set in said turned up portions, a pole pivotally attached to said rod, a metal plate passing over said bars, firmly attached thereto, and securely fastened at each end to the axle bed, forming a rocker plate, curved braces extending from the upright parts of said axle to and firmly attached to said turned up ends of said side metal plates by means of said rods, and braces rigidly connecting the set off portion with the said parallel bars, substantially as and for the purposes set forth.

**No. 42,281. Hanger for Electric Lamps.***(Suspension pour lampes électriques.)*

Allen Gardiner Ingalls, Daniel McLean and James Hartley Gordon, all of the city of Ottawa, Ontario, Canada, 13th March, 1893; 6 years.

*Claim.*—1st. In an electric lamp hanger, the beam F, provided with rods B and E, arranged of trapezium form with post A, as set forth. 2nd. In an electric lamp hanger, the rod B, provided with socket B', having strut 2, and guys b, secured to each side of the post A, through the part P, and to the hinge plate I, as set forth. 3rd. In an electric lamp hanger, the beam F, and rod E, having support T, secured to the hinge plate T, substantially as set forth. 4th. In an electric lamp hanger, the rod T, strut E', and guy K, the last mentioned being fastened at one end to the post A, and at the other to the hinge plate I, and supported in its middle part by the strut E', and nearer the hinge plate I, by the part J, substantially as set forth. 5th. In an electric lamp hanger, the rods B and D, secured midway through the socket B', one end of said rods fastened to the post A, and the other to the hinge plate I, and to the part J, substantially as set forth. 6th. In an electric lamp hanger, the rod E, having struts f, and guys a, secured to the post A, through the part P, and to the hinge plate I, substantially as hereinbefore set forth. 7th. In an electric lamp hanger, the beam F, supported by the rod G, and abutment n, secured to the post A, and having hand wheel L, and shaft l, and chain wheel R, chain W, and chain wheel R', as shown and described. 8th. In an electric lamp hanger, the triangular piece J, to support the rods B, D and T, prolonged at its upper end to receive the circuit wires, substantially as set forth. 9th. In an electric lamp hanger, the triangular piece J, having brace U, connecting it with the hinge plate I, as set forth. 10th. In an electric lamp hanger, the rod C, and socket C', made to receive brace O, and guys c and o, fastened at one end to the hinge plate H, and at the other to the lamp supporting head r, as set forth. 11th. In an electric lamp hanger, the hinge plate H, having an incline plate and support i, and the circuit wire carrier m, as set forth. 12th. In an electric lamp hanger, the beam F, the rod T, the rod B, the hand and chain wheels L and R, and triangle J, as shown and described. 13th. In an electric lamp hanger, the rods B and D, with fastening B', and triangle J, as described. 14th. In an electric lamp hanger, the hinge 4, made up of plates H and I, and rod I', joining the rods B and C, as set forth. 15th. In an electric lamp hanger, the hinge 4, provided with the chain wheel R', the wire holder u, and supporting incline plane i, as set forth. 16th. In an electric lamp hanger, the triangle J, fastened to the rods B and D, supporting guy K, and joined to hinge plate I, by brace u, as set forth. 17th. In an electric lamp hanger, the beam F, having a lug at its outer extremity fastened to the post A, at its inner extremity, and having a guy M, fastened to the lug at its outer extremity, and to the post at its inner extremity, and provided with a tightening nut m, as and for the purpose set forth. 18th. In an electric lamp hanger, the cam latch S, articulated to the hinge plate T, to engage with the hinge plate H, and having the connecting rod s, substantially as set forth.

**No. 42,282. Guard for Car Wheels.***(Garde pour roues de chars.)*

George Gordon Christie, Assignee of Walter Wormley Peay, both of Toronto, Ontario, Canada, 13th March, 1893; 6 years.

*Claim.*—1st. A car wheel guard composed of a frame adapted to fit and secured to the convex side of the brake shoe, and having a vertical shaft carried therein having a foot on its lower end, a spring encircling said shaft and a pin through the shaft and engaged by the spring, substantially as shown and described.

**No. 42,283. Adjustable Step Bearing Device.***(Appareil ajustable pour coussinets de marches.)*

Charles Dunsford Jenkins, Boston, Massachusetts, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. The herein described adjustable step bearing consisting of the internally screw threaded base or frame A, a screw threaded plug B working therein and having a worm wheel B', and an adjustable worm D meshing in the teeth of said worm wheel, substantially as and for the purpose set forth.

**No. 42,284. Pulverizer. (Broyeur.)**

Lillie Frances Seaver, administratrix of the estate of Frank William Seaver, both of Boston, Massachusetts, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. A pulverizer or crusher consisting of a stationary conical shell having in its upper end a concentric recess or bearing surface, a rotary ring mounted in said recess and formed with feed orifices through which passes the material to be crushed, a shaft loosely journaled in said ring eccentric thereto and extended downward within the shell, a stationary fulcrum or bearing for the lower end of said shaft, and a conical pulverizing drum (1) mounted on said shaft within the shell, substantially as shown and described. 2nd. A pulverizer or crusher consisting of the stationary perforated base plate A, the conical shell B, secured to said base plate and provided in its upper end with a concentric recess or bearing surface B', the rotary ring C mounted in said recess and having on its periphery an angular groove c, the bolts c' passed through the shell and engaged loosely in said groove, the shaft E eccentric to said rotary ring and loosely journaled therein, the stationary fulcrum A' for the lower end of said shaft and the conical gyratory drum F mounted on said shaft, substantially as shown and described.

**No. 42,285. Heating Furnace. (Calorifère.)**

Damase Marcel Poirier, St. Ferdinand, Quebec, Canada, 13th March, 1893; 6 years.

*Claim.*—1st. In a heating furnace, the combination of hot air pipes d with pipes c arranged as set forth and for the purpose hereinbefore described. 2nd. In a heating furnace, the combination of hot air pipes d pipes c and check draft or dampers h by which the hot air may be directed in any one or more of pipes d to different compartments or rooms to be heated, substantially as and for the purpose hereinbefore set forth.

**No. 42,286. Phonograph. (Phonographe.)**

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. In a phonograph, the combination with the phonogram cylinder adapted to receive two blanks thereon placed end to end, of two recorders mounted upon the machine and acting upon the separate blanks, substantially as set forth. 2nd. In a phonograph, the combination with the recorder mounted thereon, of a second recorder having an independent diaphragm and recording point connected rigidly with the first recorder, whereby the two recorders may be raised and lowered by a single movement, substantially as set forth. 3rd. In a phonograph, the combination with a swinging spectacle frame, of a recorder secured in the eye of said frame, and a second recorder rigidly connected to and supported from the first recorder, substantially as set forth. 4th. In a phonograph, the combination with two recorders with separate diaphragms, of a bar or frame connecting such recorders rigidly together, whereby the two recorders may be raised and lowered by a single movement, and a speaking tube common to both of said recorders, substantially as set forth.

**No. 42,287. Stove Pipe and Collar Holder Combined.***(Tuyau de poêle et porte-collet combinés.)*

Clarence Coleman Gregory, Sandwich, Illinois, U.S.A., 13th March, 1893; 6 years.

*Claim.*—1st. As an improved article of manufacture, a stove pipe collar having a number of arms secured thereto, said arms being bowed or bent inwardly at one point to bear against the surface of the pipe, the free ends of some of the arms being bent outwardly to engage with the inner surface of the wall, and one or more of the free ends bent in the opposite direction to form a stop for the entering end of the pipe, substantially as set forth. 2nd. The combination, with a stove pipe, of a collar, provided with a number of spring holding arms, the outer ends of which are rigidly secured to said collar, the opposite or free end of some of these arms being bent outwardly to engage with the inner surface of the wall so as to hold the collar in place, and the ends of the other arm or arms bent in the opposite direction to form a stop for the entering end of the pipe, said arms bearing against the surface of the pipe at a point between their respective ends to prevent the same from backing out, substantially as and for the purpose set forth. 3rd. The combination, with a stove pipe, of a collar provided with a number of spring holding arms arranged in a double series, substantially as and for the purpose set forth.

**No. 42,288. Car Coupler. (Attelage de chars)**

Jefferson Kindelberger, Webster Toms, William Toms, and Mary A. Allen, all of San Diego, California, U.S.A., 14th March, 1893; 12 years.

*Claim.*—1st. A car coupler consisting of the draw head A, the arrow headed tongues secured therein, the cams mounted in said tongues and operated by the arm *d*<sup>1</sup>, of the spring F, secured to the upper side of the draw head, and arranged to hold the tongue against the lower side of the draw head, substantially as described. 2nd. The combination of draw head, the tongues passing through the same and secured at its inner end by the bolt *b*, as shown, while the other end thereof is provided with the pointed ends having the shoulders C, the cams mounted in the tongues near the head thereof, the arm *b*<sup>1</sup>, connected with the standard E, by the operating chain, and the spring F, secured to the upper side of the draw head, as set forth. 3rd. The combination, with a railway car, of the draw head A, provided with the tongue B, the spiral spring G, the oblong cam D, pivotally mounted in the tongue and adapted to press against the head of the other tongue and thus separate the heads thereof, the spring F, secured to the inner side of the draw head and passing downwardly against the tongue, the transverse shaft *d*, and the arm *b*<sup>1</sup>, adapted to actuate the cam, substantially as described.

**No. 42,289. Safety Attachment for Cars.**

(Appareil de sûreté pour chars.)

Robert J. Spearing, Francis P. Buck, Cyrus A. French, all of Sherbrooke, Quebec, Canada, and George Van Dyke, of Lancaster, New Hampshire, U.S.A., 14th March, 1893; 6 years.

*Claim.*—1st. In combination, with a car, a safety attachment having tripping rod F, carried in the shoe C<sup>1</sup>, serving to set the air brakes, all as described and for the purposes set forth. 2nd. The tripping rod F, carried in the shoe C<sup>1</sup>, in combination with mechanism connecting with air brakes of the car, substantially as described, and for the purposes set forth. 3rd. In combination, with the tripping rod F, the shoe C<sup>1</sup>, torpedo H, the U bar H<sup>1</sup>, lever F<sup>6</sup>, springs F<sup>3</sup>, F<sup>9</sup>, F<sup>10</sup>, and H<sup>2</sup>, substantially as described, and for the purposes set forth. 4th. In combination, with safety attachment as described, the valve E, the check E<sup>3</sup>, stem E<sup>1</sup>, and spring E<sup>2</sup>, as and for the purposes described. 5th. In combination, with a safety attachment, the beam G<sup>3</sup>, the anchor plates K and G, the U bar G<sup>4</sup>, the standards or arms C<sup>1</sup>, C<sup>2</sup>, and C<sup>3</sup>, and the shoe C<sup>4</sup>, having aperture and flange, as and for the purposes described. 6th. In combination, with a car truck, the tripping rod F, for setting the brakes by contact with the rail, as set forth. 7th. In combination, with the car truck, the single flanged shoe, as and for the purpose set forth. 8th. In combination, with a safety shoe, the torpedo H, U bar H<sup>1</sup>, and spring H<sup>2</sup>, as described and for the purpose set forth. 9th. In combination, with a tripping rod F, the lever F<sup>6</sup>, the spring F<sup>3</sup>, F<sup>9</sup>, F<sup>10</sup>, as and for the purposes described. 10th. In combination, with the air brakes, the valve E, substantially as described. 11th. In combination, with the air brakes, the branch pipe O<sup>6</sup>, bottle O, as and for the purposes set forth. 12th. In combination, with the shoe C<sup>1</sup>, the branch pipe O<sup>6</sup>, and bottle stop O, substantially as described, and for the purpose set forth. 13th. In combination, with the air pipes extending to the shoe C<sup>1</sup>, the bottle stop P, as described, carried in the shoe C<sup>1</sup>, for the purpose of setting the air brakes in case of accident, by contact with the rail.

**No. 42,290. Ankle Supporter.**

(Support pour la cheville du pied.)

John Gibbs Pugsley, South Norwalk, Connecticut, U.S.A., 14th March, 1893; 6 years.

*Claim.*—1st. An ankle supporter having a sole and side of one piece of material stiffened, the side extending up to the ankle and molded to shape for fitting the same and the supporter being entirely open at the rear, so as to accommodate different widths of heels and ankles and not to interfere with the forward and backward movement of the parts upon the ankle joint, substantially as set forth. 2nd. An ankle supporter having a sole and two side pieces of one piece of material moulded to shape for fitting the ankle and stiffened and extending up at each side of the ankle, the supporter being open at the rear to accommodate differences in widths of heel and ankle and not to interfere with the forward and backward movement of the parts upon the ankle-joint, substantially as set forth. 3rd. An ankle supporter, having a sole and side of one piece of material, moulded to shape for fitting the ankle and stiffened by a plate permanently connected with the material and extending up at the side of the ankle, the supporter being open at the rear to accommodate differences in widths of heel and ankle and not to interfere with the forward and backward movement of the parts upon the ankle joint, substantially as set forth.

**No. 42,291. Car Coupler. (Attelage de chars.)**

Conrad H. Carpenter, Linnus, Texas, U.S.A., 14th March, 1893; 6 years.

*Claim.*—In a car coupling, the combination of the opposite horizontally disposed draw hooks pivoted intermediate of their ends

and having rearwardly extending shanks, said hooks having bevelled front ends forming a flaring mouth and having the opposite edges of their necks curved and forming a circular opening, springs for holding the extending shanks separated to close the hook and a link arranged edgewise, substantially as described. 2nd. In a car coupling, the combination of the opposite horizontally disposed pivoted hooks having rearwardly extending shanks, a spiral spring interposed between the shanks and holding the same separated, spiral springs engaging the shanks at the outer faces thereof, a pulley mounted on one of the shanks and a chain secured to the other shank and passing around the pulley and adapted to draw the shanks together to open the hooks, substantially as described. 3rd. In a car coupling, the combination of the opposite horizontally disposed pivoted hooks having rearwardly extending shanks, a spiral spring interposed between the shanks and holding the same separated and closing the hooks, spiral springs engaging the outer faces of the shanks, a pulley mounted on one of the shanks, a chain secured to the other shank and passing around the pulley and extending to one side of the car, a pulley arranged at that side of the car, and a lever fulcrumed on the car, and connected with the chain, substantially as described. 4th. In a car coupling, the combination of the opposite pivoted hooks, a rod extending outward from the car and a link suspended edgewise from the rod, substantially as described. 5th. In a car coupling, the combination of the opposite pivoted hooks, the horizontally disposed resilient rod arranged above the hooks, and the link provided at its upper edge with an eye arranged on said rod, whereby the link is suspended edgewise from the rod, substantially as described.

**No. 42,292. Cultivator and Seeding Machine.**

(Cultivateur et semoir.)

Walter Coulthard, Oshawa, Ontario, Canada, 14th March, 1893; 6 years.

*Claim.*—1st. In seeding machines and cultivators with independent drag bars, or drag bars arranged in sections or on sectional frames having a tooth holder made in two parts, the combination of mechanism by which such two parts are separated or clamped together for the removal, reception and retaining of movable teeth or hoes, substantially as specified. 2nd. In seeding machines and cultivators, the combination of a tooth holder made in two parts with grooves or receptacles for drill hoes, stiff teeth and spring teeth, projections in rear of each part with sloping or wedge shaped outer sides and a lever clamp pivotally attached to such projections for clamping the two parts together, and furnished with a wedge to separate the same substantially as and for the purposes specified. 3rd. In seeding machines and cultivators, the combination of a tooth holder made in two parts with grooves or receptacles for drill hoes, stiff teeth or spring teeth mechanism to separate and clamp together such two parts as specified drag bars either independent or in sections or sectional frames attached either directly or indirectly to the front of a frame mounted on an axle and wheels and with or without a zig-zagging mechanism or mechanism for clearing obstructions, substantially as and for the purposes specified. 4th. In seeding machines and cultivators having teeth or hoes attached to independent drag bars or to any drag bars arranged in sections or on sectional frames and connected either directly or indirectly with a frame mounted on wheels, and a pole or tongue, the combination of mechanism whereby the frame is tilted for altering the angle of the teeth, substantially as specified. 5th. In such machines the combination of a pole yoke or guide with an opening to permit the vertical motion of the frame with a frame mounted on an axle and wheels, drag bars either independent or arranged in sections or on sectional frames furnished with hoes or teeth and connected either directly or indirectly to the front of the frame and with or without zig-zagging or clearing mechanism, a pole or tongue and mechanism to tilt the frame, substantially as and for the purposes specified. 6th. In such machines, the combination of a bracket rigidly fastened to a pole or tongue, a bell crank lever having a cross piece on the front arm thereof pivotally fulcrumed in said bracket, straps or hangers on each side of such cross piece pivotally connected therewith and with a frame, a retaining mechanism for such lever, an axle and wheels, drag bars either independent or arranged in sections or sectional frames furnished with hoes or teeth and connected either directly or indirectly with the front of the frame, and with or without a zig-zagging or clearing mechanism, a pole or tongue and a pole yoke or guide having an opening to permit the vertical motion of the frame, substantially as and for the purposes specified.

**No. 42,293. Spring for Vehicles.**

(Ressort pour voitures.)

John Calvin Shepherd, Tilsonburg, Ontario, Canada, 14th March, 1893; 6 years.

*Claim.*—The combination, of the supporting beam C, the upright clamp E, and the diagonally pulling spiral springs F, F', with the body of any ordinary two wheeled vehicle, substantially as and for the purpose hereinbefore set forth.

**No. 42,294. Wire for Making Pegs.***(Fil de fer pour faire les chevilles.)*

Olivier Bresse, jr., Nicolas Consigny and Arsene Consigny, all of the city of Quebec, Quebec, Canada, 14th March, 1893; 6 years.

*Claim.*—1st. A wire for making pegs for boots and shoes, having a helical groove or grooves formed on its surface, substantially as set forth. 2nd. A wire for making pegs having helical grooves formed on its surface, a space being left between each groove, substantially as set forth.

**No. 42,295. Oil Stoves. (Poêle à huile)**

Maurice G. Benedict, Coldwater, Michigan, U.S.A., 14th March, 1893; 6 years.

*Claim.*—1st. In an oil burning heating stove, the combination of the base, an oil burner located therein, a combustion chamber surrounding said burner, a heating drum located above said combustion chamber divided by annular walls into three compartments, one of said compartments being directly above said combustion chamber and provided with a mouth opening downward into said combustion chamber, the second of said compartments being annular in form and surrounding the first, and provided with an exit opening at the top and with inlet flues at the bottom, and third or outermost of said chambers being also annular in form, and provided at its upper side with outlet openings, and at its lower side being connected by passageways that lead between the flues from said combustion chamber, substantially as and for the purpose described. 2nd. In an oil heating stove, the combination of a base, a burner located therein, a combustion chamber, an annular flue at the summit of and surrounding said combustion chamber, inlet flues leading from beneath said combustion chamber upward along the sides thereof, and entering said annular flue, and outlet flues leading from the upper side of said annular flue through an interposed drum, and discharging into a heating chamber communicating with the open air at the top of said heater, substantially as and for the purpose described. 3rd. In combination with the base of an oil stove, a combustion chamber having formed integral therewith an annular heating chamber located horizontally around the top of the combustion chamber, a number of upright flues leading into said annular chamber from below said combustion chamber, and an equal number of outlet flues leading from above said annular chamber, and communicating with the outer air through an interposed heating chamber, in which all of said last mentioned flues unite, substantially as and for the purpose described. 4th. In an oil heating stove, the combination of a combustion chamber, a base and burner supported therein, a heating chamber located above said combustion chamber, provided with an internal space adapted to receive the products of combustion and to pass part of them therethrough into the open air, and to deflect another part of them around the under side and to the outer walls of said chamber, and a casing adapted to confine the deflected products of combustion, and direct them against the outer walls of said heating chamber, substantially as and for the purpose specified.

**No. 42,296. Pipe Wrench. (Clé à tuyaux.)**

Gustaf Gunzanson, San Francisco, California, U.S.A., 14th March, 1893; 6 years.

*Claim.*—1st. In a self adjusting wrench plyers and tongs for screwing pipes and fittings, the combination of a jaw A, having two series of graduated teeth  $m$  and  $n$ , at an angle to each other  $m, l, n$ , determined by the angle of leverage  $e, i, l$ , for gripping the pipes on two sides equally opposite the grip of jaw B, with which jaw it is hinged by the bolt  $c$ , all substantially as set forth. 2nd. The combination in a wrench, plyers and tongs for screwing pipes and fittings, etc., of a self adjusting jaw B, extended as a lever and having a curved series of graduated teeth  $o$ , constructed after the angle of leverage  $e, i, l$ , which may be varied according to purpose, the jaw gripping the various pipes at this same angle, and directly opposite the two grips of jaw A, with which it is hinged by the pivot  $c$ , all substantially as shown and described.

**No. 42,297. Boat Propeller. (Propulseur pour vaisseaux.)**

Thomas Dummill Clapham, Ashurst, New Zealand, 14th March, 1893; 6 years.

*Claim.*—In an apparatus for propelling boats and for storage of air in the same, the combination of an air pump  $g$ , having suction valve  $g^1$ , delivery valve  $g^2$ , delivery pipe  $i$ , cap  $g^3$ , piston  $h$ , piston rod  $h^1$ , and the cross head  $h^2$ , secured by the said rod, with guide  $h^3$ , plates  $b$  and  $c$ , and rowlock  $d$ , as and for the purposes set forth.

**42,298. Stenographer's Table.***(Table de sténographe.)*

Thomas Pinkney, Toronto, Ontario, Canada, 14th March, 1893; 6 years.

*Claim.*—1st. In a stenographer's tablet, the sliding rest having flanges along its sides as a means whereby it is guided longitudinally along the top of the tablet, substantially as shown and described. 2nd. In a stenographer's tablet, the combination of the sliding rest having flanges on its longitudinal sides, with the case of the tablet having an inclined upper side, substantially as shown and described. 3rd. In a stenographer's tablet, the combination of the sliding rest

flanged along its longitudinal sides and adapted to fit the top of the tablet, the case of the tablet having an inclined upper side, and the transverse slots formed in said upper side, substantially as shown and described. 4th. In a stenographer's tablet, the receiving drum having a hollow shank, a circular series of holes in one of the heads of said drum, a spindle within said hollow shank, a spiral spring connected at its opposite to said shank and drum respectively, and a disc on said spindle having a pin to engage in any of said holes in the drum head, substantially as shown and described. 5th. In a stenographer's tablet, the combination of the receiving drum journaled within the case of the tablet and having means as specified whereby it can be detached and connected to the spindle within it, the rod and means thereon to liberate the drum from the spindle within it, the pinion on the end of said spindle whereby it is revolved, and the wheel to mesh with said pinion and having an external means whereby the wheel is operated, substantially as shown and described. 6th. In a stenographer's tablet, the combination of a receiving drum having means as specified whereby it is operated from the outside of the tablet, the storage drum from which the strip of writing material is drawn, and said strip of writing material connected at its end to said receiving and storage drum, substantially as shown and described. 7th. In a stenographer's tablet, the combination of the case having an inclined upper side, a receiving drum journaled within said case, a storage drum journaled within said case, a strip of writing material attached at its opposite ends to said receiving and storage drums, and the brake spring to bear on one of the heads of said storage drum, substantially as shown and described. 8th. In a stenographer's tablet, the combination of the case having an inclined upper side, a receiving drum journaled within said case, a strip of writing material attached at its ends to said receiving and storage drums, a brake spring to bear on one of the heads of said storage drum and a bar supported in said case transversely and having a rubber or other analogous covering, substantially as shown and described. 9th. In a stenographer's tablet, the combination of the case having an inclined upper side as specified, the sliding rest having flanges along its sides so as to guide it along the said upper side of the case, the receiving drum journaled within said case, the knob and gear mechanism whereby to operate said receiving drum, a pawl to secure said drum from unwinding, the storage drum on which a strip of writing material is wound or stored, the strip of writing material connected to said receiving and storage drums as specified, the transverse openings or slots in the case through which said strip passes beneath said sliding rest, a brake spring to bear on said storage drum, and a bar having covering as specified, and located beneath one of said transverse slots, substantially as shown and described.

**No. 42,299. Lid for Milk Cans.***(Couvercle de boîte à lait.)*

William Albert Clark, Toronto, Ontario, Canada, 14th March, 1893; 6 years.

*Claim.*—1st. The combination, with a milk can, of a lid having a receptacle filled with ice, and extending downwardly below the neck of the can into the milk, as and for the purpose specified. 2nd. The combination, with a milk can A, having the usual neck B, of a lid C, provided with a receptacle D, filled with ice and having a screwed cap or cover E, fitting into the corresponding thread in the receptacle and provided with a handle F, as and for the purpose specified. 3rd. The combination, with a milk can, of a lid having a receptacle filled with ice, and extending downwardly below the neck of the can into the milk, the milk can having extending upwardly from its shoulder at the side of the neck, a tube communicating with the top of the can, as and for the purpose specified.

**No. 42,300. Oil Can Casing.***(Chemise pour bidon à huile.)*

Samanthy Jane Schooley and Bessy McDonald, assignees of Charles Henry Schooley, all of Toronto, Ontario, Canada, 16th March, 1893; 6 years

*Claim.*—A casing A, having rockers C, formed on one side of it, and made to fit the can B, from which the spout E projects, substantially as and for the purpose specified.

**No. 42,301. Dental Chair. (Chaise de chirurgie.)**

Aron P. Gould, Canton, Ohio, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. The combination, with a base, a body portion, a body supporting stem, a screw journaled in the base, and having a screw threaded engagement with the body supporting stem, of an electric motor for rotating said screw, a switch, means for manually operating said switch to reverse the motion of the armature of said motor, and means for automatically stopping the motor when the body portion has reached a certain level, substantially as set forth. 2nd. The combination, with a base, a body portion, a body supporting stem, a screw journaled in the base, and having a screw threaded engagement with the body supporting stem, of an electric motor for actuating said screw, a switch, and a connection between the switch and the body supporting stem, and means carried by the body supporting stem for actuating said connection. 3rd. In combination, with a base, a body portion, a body supporting stem, a screw for

actuating the body supporting stem, provided with a gear wheel, of an electric motor the armature shaft of which is provided with a clutch gear in engagement with the first named gear, a gear shipper, and means for automatically stopping the armature shaft of the motor to prevent the body portion raising or lowering too far, substantially as set forth. 4th. The combination, with a chair body, of a base A, having a vertical aperture *d*, and a vertical groove *m*, a chair supporting stem D, a tongue *n*, adapted to slide in said groove, said tongue having shoulders *t*, *t'*, that engage and move a switch bar *p*, connected to the switch S, by which the current of electricity to the motor is interrupted to stop the motor. 5th. The combination, in a dental chair, of a base and body portion, said body portion adapted for vertical adjustment in said base, a dental tool connected to said chair, and a prime mover for simultaneously rotating said tool, and moving vertically said body portion, and means for throwing the body raising mechanism out of engagement with the prime mover.

**No. 42,302. Cattle Guard. (Garde-bétail.)**

George W. Miller, Kalamazoo, Michigan, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. Surface cattle guard sections composed of a plate of metal bent to form ribs with slanting sides, alternating with flat portions, said flat portions being provided with a series of upwardly extending tongues or projections, substantially as set forth. 2nd. Surface cattle guard sections composed of a plate of metal bent to form ribs with slanting sides, alternating with flat portions, said flat portions being provided with a series of upwardly extending tongues or projections, and said ribs having portions of the metal at the ends folded over to close said ends and from a closed inclined end, substantially as set forth.

**No. 42,303. Metal Tubes. (Tube de métal.)**

George H. Everson, Pittsburgh, Pennsylvania, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. The process described of lining pipes, consisting in placing the metal which is to form the lining upon a hard mandrel, rolling this lining until it has the desired thickness, then placing the pipe which is to be lined upon the lining, and rolling both the pipe and the lining upon the mandrel to any desired degree, substantially as shown. 2nd. The process of covering pipes or tubes, consisting in placing the pipe upon a lubricated mandrel, rolling the pipe to the desired thickness, placing the covering material around the pipe upon the mandrel, and then rolling both the covering material and the pipe to any desired degree, substantially as set forth. 3rd. The process herein described of both lining and covering pipes of hard material with other metals, consisting in placing the lining upon a hard lubricating mandrel, rolling the lining until it fits tightly upon the mandrel and is reduced to the required thickness, placing the tube upon the lining and rolling both the tube and the lining, placing the covering upon the tube thus rolled, and then rolling the covering, the tube and the lining, substantially as specified.

**No. 42,304. Heel Nailing Machine.**

(Machine à clouer les talons.)

Harold Arthur Webster, Haverhill, Massachusetts, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. In a heel nailing machine, a group or series of elements, comprising a nail holding or receiving templet, a heel holder adapted to retain a heel in operative relation to the templet, a top lift spanker and holder, which is interchangeable in position, with a heel held by said heel holder, a shoe support, and gang of drivers, said support and drivers being located at opposite sides of the point occupied successively by the heel and top lift and in line with said point, combined with operating mechanism adapted to impart a cycle of movements to the movable members of said group, whereby first the heel seat of a shoe is brought in contact with a heel held on the templet by the heel holder, and the nails are forced from the templet into the heel and heel seat, secondly the attached heel and templet are separated to permit the top lift spanker to be moved to the position formerly occupied by the heel, and thirdly, the top lift spanker and shoe support are caused to co-operate in affixing the top lift to the heel, as set forth. 2nd. In a heel nailing machine, the combination with a nail holding or receiving templet, of a heel holder adapted to hold a heel in operative relation to the templet, a shoe support, movable toward and from the templet, means for reciprocating the shoe support, to move alternately toward and from the templet, a gang of drivers, whereby the nails are forced from the templet into the heel and heel seat, the reciprocating movements of the heel support, causing it to first press a heel seat thereon against a heel hold by the holder, while the nails are being driven, and to then separate the attached heel from the templet, to permit placing a top lift in the position formerly occupied by the heel, and means for the spanking a top lift on to the heel after the separation of the heel from the templet, as set forth. 3rd. In a heel nailing machine, the combination of the following elements, viz., a shoe support, a gang of drivers, one of said elements being movable relatively to the other, a nail holding or receiving templet arranged between the shoe support and drivers,

and a heel holder adapted to hold a heel in operative relation to said shoe support and drivers, and a heel holder adapted to hold a heel in operative relation to said templet, as set forth. 4th. In a heel nailing machine, the combination of the following elements, viz., a shoe support, a gang of drivers, one of said elements being movable relatively to the other, means for reciprocating said movable element to carry it alternately toward and from the other element, a movable templet arranged between the shoe support and drivers, and a heel holder adapted to hold a heel in operative relation to the templet, and a top lift holder and spanker adjacent to the heel holder, whereby a top lift may be interposed between the templet and heel, to be spanked on, as set forth. 5th. The combination of a gang of drivers, a shoe support movable toward and from said drivers, a movable templet interposed between the drivers, and support and yieldingly pressed toward the support, means for moving the support to cause it to force the templet and a heel interposed between the support and templet toward the drivers, whereby the drivers are caused to force the nails from the templet into the heel, and a latch or detent adapted to arrest the templet at the end of the movement imparted to it by the support, whereby time is afforded for the separation of the heel from the templet by the opposite movement of the support, and the interposition of a top lift between the templet and the heel, the templet being set for acting by said movement, so that when the latch or detent is moved to release the templet, the latter will force the top lift to place and solidify the heel, as set forth. 6th. The combination of a gang of drivers, a shoe support movable toward and from said drivers, a yielding templet interposed between the drivers and support, and adapted to be displaced from its normal position by the movement of the support toward the drivers, said movement causing the drivers to force the nails from the templet into a heel interposed between the templet and support, a latch or detent adapted to arrest the templet at the end of the movement imparted to it by the support, whereby time is afforded for the separation of the heel from the templet by the retreating movement of the support, the templet being set for action by the said movement, an automatic means for displacing the latch or detent and thereby releasing the templet, as set forth. 7th. In a heel nailing machine, the combination of a gang of drivers, a shoe support movable toward and from said drivers, a yielding templet interposed between the drivers and support, and a templet displacing device whereby the templet may be temporarily held in inoperative position, as set forth. 8th. In a heel nailing machine, the combination of a movable shoe support, a movable templet arranged in the path of movement of the shoe support, a gang of drivers, and a nail block or loader adapted to move on fixed guides in a direction at right angles to the path of movement of the shoe support, whereby the loader and drivers may be placed alternately in line with the templet and shoe support, and means for automatically discharging nails from the loader into the templet, as set forth. 9th. The combination with a shoe support of a shoe centering device, comprising an adjustable block or head adapted to bear on the rear portion of a shoe on said support, two arms arranged to bear on opposite sides of the shoe, and means for adjusting said arms to the width of the portions of the shoe with which they are engaged, as set forth. 10th. The combination with a shoe support of a shoe centering device, comprising in its construction two independently adjustable slides, a block affixed to one of the said slides and adapted to bear on the rear portion of a shoe, a pair of arms each pivotally connected at one end to the other slide, the other ends of said arms being arranged to bear on opposite sides of the shoe, fixed supports on which the outer edges of said arms bear, and means for adjusting said slides, as set forth. 11th. A heel attaching machine containing the following instrumentalities, viz.: a shoe support, a group of drivers, means to move one of the said parts in a right line toward and from each other, a templet or nail holder located between the said support and drivers and movable in the same right line, devices to hold a heel in operative relation to the templet, a top lift holder or spanker, and actuating devices for the above named parts, whereby the heel blank is compacted upon the supported shoe, the nails driven, the heel withdrawn from the templet, the top lift inserted between the templet and heel, and the top lift spanked on, the said operations being in succession in the order named and taking place during a single cycle of movement of the said actuating mechanism. 12th. In a heel attaching machine, the following instrumentalities, viz.: a shoe support, a group of drivers, a templet or nail holder interposed between the said shoe support and drivers, means to move the said parts toward and from each other substantially as herein described, devices to hold a heel blank in operative relation to the templet, a top lift spanker, and an independent device such as a weight or equivalent to move the spanker toward the shoe support, for the purposes specified. 13th. In a heel attaching machine, the following instrumentalities, viz.: a templet or nail holder, a group of drivers, a horizontally movable device having a group of nail holding recesses, the said drivers and recesses being adapted to be brought interchangeably into operative position with relation to said templet or nail holder as required, and for the purposes set forth. 14th. In a heel attaching machine, a shoe support, and a group of drivers and means to move one of the said elements toward and from each other, combined with a templet or spanker located between the said shoe support and drivers, and an independent device as a weight or spring to move the templet or spanker toward the shoe support. 15th. In a heel attaching machine, a shoe support, a

gage for the rear of the heel part of the shoe, side gauges, and means to adjust and proportion the distance between the side gages definitely with relation to the rear gauge, as and for the purposes set forth.

**No. 42,305. Automatic Temperature Regulator.**

(*Régulateur automatique de la température.*)

Alexander Sheels, Glasgow, Scotland, 16th March, 1893; 6 years.

*Claim.*—1st. An apparatus for regulating the temperature of an interior constructed and operating substantially as hereinbefore set forth. 2nd. In an apparatus for regulating the temperature of an interior, a syphon *a* having a piston *d*, therein, which operates a triangle *c*<sup>1</sup> together with the toggles *g*, and rods *hh*<sup>1</sup>, which latter are made to open or close the valve for fluid supply to the engines or to the chamber, substantially as hereinbefore set forth. 3rd. In an apparatus for regulating the temperature of an interior, the combination with the main syphon of the apparatus of an auxiliary controlling syphon or its equivalent, substantially as and for the purpose hereinbefore set forth. 4th. The electrical device for turning the valve *l*, substantially as hereinbefore set forth with reference to the annexed drawings. 5th. In an apparatus for regulating the temperature of an interior conducting a number of pipes or tubes containing sensitive fluid around said chamber in a zig-zag manner, substantially as and for the purpose hereinbefore set forth. 6th. In an apparatus of the class set forth the use of a reservoir *n*, and three way valve *l*, substantially as hereinbefore set forth.

**No. 42,306. Wire Stretcher.** (*Tendeur de fil de fer.*)

Jerome Shipley Richardson, Woodbury, Texas, U.S.A., 16th March, 1893; 6 years.

*Claim.*—The herein described wire stretcher, the same comprising a handle, a casting secured to one end thereof and having a claw at its outer extremity extending to one side of the longitudinal line and a projection extending to the other end of the handle, a chain leading from this head, and a hook at its outer extremity.

**No. 42,307. Mechanical Motion for Pumps.**

(*Mouvement mécanique pour pompes.*)

Robert Martin and David Martin, both of Chatham, Ontario, Canada, 16th March, 1893; 6 years.

*Claim.*—1st. The combination of the pinion *C* engaging with the spur wheel *D*, to which the eccentric *E* is cast, and being encircled with the solid eccentric strap *F*, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the pinion *C* engaging with the spur wheel *D* to which the eccentric *E* is cast and having the solid eccentric strap *F*, engaging with the oscillating lever *G* by means of a pin or bolt, the said lever *G*, being provided with holes *L*<sup>1</sup>, *L*<sup>2</sup>, *L*<sup>3</sup>, by which the arm of the eccentric strap can be adjusted, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the pinion *C*, engaging with the spur wheel *D* to which the eccentric *E* is cast and having the strap *F* engaging with the oscillating lever *G* by means of a pin or bolt, the said lever *G* being provided with the holes *L*<sup>1</sup>, *L*<sup>2</sup>, *L*<sup>3</sup>, for the adjustment of the eccentric strap *F*, the said lever *G* being also provided with the holes *K*<sup>1</sup>, *K*<sup>2</sup> and *K*<sup>3</sup>, to be used in conjunction with the holes *M*<sup>1</sup>, *M*<sup>2</sup> and *M*<sup>3</sup>, in the extension arm *H*, for the adjustment of the pivotal points, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the frame *A* having the hollow journal *R* which can be rotated or clamped fast as the nature of the driving power may demand, substantially as specified.

**No. 42,308. Washing Machine.** (*Machine à blanchir.*)

Lucinda J. Wilson, Hardy, Texas, U. S. A., 16th March, 1893; 6 years.

*Claim.*—The combination of a tub, a pivoted agitator depending thereinto, the latter being formed with an enlarged lower end, a wire extending lengthwise through the said end and having its ends doubled and bent downward, and a second wire extending at right angles to the first named wire and which extends outward at opposite sides of and at right angles to the agitator and finally bent down parallel therewith, substantially as shown and described.

**No. 42,309. Harvester Elevator.**

(*Élévateur de moissonneuse.*)

Maurice Kane, Chicago, Illinois, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. A harvester elevator, comprising a lower apron and an upper apron, the lower ply of which latter extends its entire length in a straight line and at an angle to the upper fly of the lower apron, substantially as and for the purpose set forth. 2nd. A harvester elevator comprising a lower and an upper apron, the lower ply of which latter extends in a straight line, and the upper ply of which is deflected upwards by means of a guide or roller, substantially as and for the purpose set forth. 3rd. A harvester elevator, comprising a lower apron and an upper apron, the lower ply of which is provided with a guide or roller arranged over the upper outer supporting roller of the lower apron, substantially as and for

the purpose set forth. 4th. A harvester elevator, comprising an upper and lower apron, the lower ply of the former being on a straight line, such line passing close to the discharge end of the lower apron, and the upper fly of the upper apron being deflected upwards over a third or idle roller, substantially as and for the purpose set forth. 5th. A harvester elevator, consisting of an upper and lower apron, the discharge side of the latter being located grainward of the master wheel, a stationary deck or bridge extending thence downward to the binder deck, in combination with an upper apron the lower or receiving end of which is located some distance from the upper ply of the lower apron, and having its lower ply extend in a straight line and close to the stationary deck, the upper fly of said apron being deflected upward by means of the idle roller, substantially as and for the purpose set forth.

**No. 42,310. Neck Yoke.** (*Volée de bout de timon.*)

James L. Cox, Moore's Salt Works, Ohio, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. In a coupling of the class described, a casting comprising in a single element a semi-spherical body portion, horizontal oppositely arranged arms, and oppositely arranged extensions in pairs, substantially as described. 2nd. In a coupling of the class described, a casting in a single element a semi-spherical body portion, horizontal oppositely arranged arms, and oppositely arranged extensions in pairs, the extensions of one pair being curved upon their inner faces, substantially as described. 3rd. The combination of the neck yoke recessed as described, at its longitudinal centre, the casing *E*, secured to the neck yoke with its semi-spherical chamber seated within the recess, the extensions *E*<sup>2</sup> and *E*<sup>3</sup>, adapted to embrace the neck yoke, and to overlap the end of the pole, respectively, the casing *C* on the pole, said casing being provided with a solid spherical head *D*, having longitudinal opposite slots *D*<sup>1</sup>, and the lugs *J* in the casing *E*, adapted to register with the slots *D*<sup>1</sup>, when the neck yoke is turned into a vertical position, and the lining to the number of the casting and the inner faces of the extensions, substantially as and for the purpose described.

**No. 42,311. Machine for Tightening Tires.**

(*Machine pour serrer les bandages de roue.*)

John William Rickers, Vancouver, British Columbia, Canada, 16th March, 1893; 6 years.

*Claim.*—1st. The combination of the extra jack *D*, with *J*, or duplex vertical motion for tire tighteners, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with duplex vertical motion tire tighteners with leather facings for followers and frames, substantially as and for the purposes hereinbefore set forth.

**No. 42,312. Wire Stretcher.** (*Tendeur de fil de fer.*)

Lewis W. Stokely and Samuel T. Carnes, both of Memphis, Tennessee, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. A wire stretcher for use in buildings, consisting of an extensible standard adapted to be clamped between the ceiling and the floor and power mechanism connected with said standard, whereby to strain the wire, substantially as and for the purposes set forth. 2nd. A wire stretcher for use in buildings, comprising an extensible standard having its upper member provided with an adjustable bearing formed to rest against the ceiling and power mechanism connected with said standard to strain the wire, substantially as set forth. 3rd. In a wire stretcher, substantially as described, the combination, with the standard and the bearing, of the shaft forming a hinge, like connection between said parts and the guide pulley, on said shaft, substantially as set forth. 4th. In a wire stretcher for use in houses, the combination of the extensible standard formed in a plurality of members, a guide pulley secured to the upper member, and a windlass secured to the lower member, substantially as set forth. 5th. The improved wire stretcher for use in buildings, comprising the extensible standard formed of members adjustable, substantially as described, the windlass secured to the lower member, the bearing, a shaft forming a hinge connection between said bearing and the upper standard member, and guide pulley supported on the said shaft, substantially as set forth. 6th. The improved wire stretcher herein described, consisting of the extensible standard formed with members *a*, *b*, the member *a*, having grooves *l* and sockets *m*, a box loop *d*, secured to the upper end of the member *a* and embracing the member *b*, the box loop *c*, secured to the member *b* and having lugs entering the grooves *l*, the intermediate box loop *f*, having a screw *f*, the pin *n* to enter the sockets *m*, the adjustable bearing *e* at the upper end of the member *b*, the windlass and guide pulley, all substantially as and for the purposes set forth.

**No. 42,313. Cash Register and Indicator.**

(*Régistre et indicateur de monnaie.*)

The Boston Cash Register Company, assignee of Edward Newton Foote, all of Northampton, Massachusetts, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. In a cash registering machine, the combination with the registering wheel having indicating characters on its periphery, of key operated means for imparting a rotational movement to the



wheel, a ratcheted bar supported and guided for movement alongside the periphery of the register wheel, and having indicating characters on its face, a pawl carrier pivoted adjacent the register wheel, and having a pawl for engaging the ratcheted bar, and the register wheel and pawl carrier constructed and arranged whereby each rotation of the wheel will effect the swing of the pawl carrier and a progressive movement of the register bar, substantially as described. 2nd. In a cash registering machine, the combination with the registering wheel *c*, having the depression *o*, and the ratchet wheel *d*, of the pawl carrier and pawl, and a key lever for imparting the working motion to the pawl carrier, a ratchet bar supported and guided for movement with its surface adjacent to the periphery of the register wheel, the pawl carrier *j*, pivoted adjacent the register wheel, and having one arm provided with the nose *m*, and the other arm carrying the pawl which engages the ratched register bar, a spring applied for the rearward pressure on the bar, and the stop pawl *p*, all substantially as described. 3rd. In a cash register, the combination with a registering wheel *b*, having the ratchet wheel, and key operated means for securing a rotational movement of the ratchet wheel and register wheel, of an indicating ratchet bar and the spring stop and stop pawl therefor, a lever working in conjunction with the register wheel for receiving from the latter periodically a swinging movement, and a pawl on said lever for engaging and forcing the ratchet bar, and a reciprocating part carrying the stud, adapted to engage both of the ratchet bar pawls, and having a pawl for engaging the said ratchet wheel, substantially as and for the purposes set forth. 4th. In a cash registering and indicating machine, the combination with the cabinet having at its top the opening for the projection therethrough of the indicator tags, and having the end walls provided with the inwardly projected panels, of the glass section of inverted trough shape supported at its ends on said panels, substantially as set forth. 5th. A cash registering machine provided with a cash drawer having one or more coin receptacles provided with perforated bottoms, substantially as and for the purpose set forth. 6th. A cash registering machine provided with a cash drawer having one or more coin receptacles, which are provided with bottoms constituted by a non-oxidizable and perforated metal, substantially as and for the purpose set forth. 7th. A cash registering machine provided with a cash drawer having at its front several coin receptacles, the bottom of which are constituted by a single curved plate of non-oxidizable and perforated metal, substantially as described. 8th. A cash registering machine provided with a cash drawer having at the rear thereof a series of compartments for bills, the board constituting the bottom thereof, terminating at the rear of the front of the drawer, and having at the front the several coin compartments, the bottoms of which are constituted by non-oxidizable and perforated metal, substantially as described.

#### No. 42,314. Steam Engine. (*Machine à vapeur*.)

Joseph M. Powell and Asher Dumaw, both of Springfield, Missouri, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. A steam chest on each end of a cylinder, formed of bonnet D, cylinder head F, and sides E, the chests being divided and provided with curved elongated ports K, K<sup>2</sup>, combined with curved slide valves G and H, substantially as shown and described. 2nd. In an engine, the combination of a self-packing fulcrum L, on a slide valve secured to the end of the cylinder, and a balance valve I, with steam chest C, on the ends of the cylinder, substantially as shown and described. 3rd. In an engine, the exhaust valve chest on the end of the cylinder, in combination with a curved slide valve having a self-packing fulcrum, a seat piece X, having a port X<sup>2</sup>, to correspond with the port K<sup>2</sup>, and a chest C on the end of the cylinder, having a partition E<sup>2</sup> and a steam passage B<sup>2</sup>, all substantially as shown and described. 4th. A supply valve for a cylinder, consisting of a curved valve H, having a self-packing fulcrum for sliding over a curved port in the end of the cylinder, combined with a cylinder A, and a steam chest C, and a balance valve I, all substantially as shown and described. 5th. The combination of a sliding valve H, having a self packing fulcrum and a steam chest on the end of a cylinder, with a balance valve consisting of two plates I<sup>2</sup>, I<sup>3</sup>, stud bolts I<sup>4</sup>, and an adjustable screw I<sup>5</sup>, having shoulders I<sup>6</sup>, all substantially as and for the purpose specified. 6th. In combination with sliding valves having self packing fulcrums, the mechanism for operating them, consisting of an eccentric rod for operating a working lever O, which is attached to the valve stem of the exhaust valve G, and opens the supply valve by means of a sliding bolt Q, and closes the supply valve by a dash pot tripped by a spiral piece S, operating on a pivoted lever R, all substantially as shown and described. 7th. A device for tripping the supply valve, consisting of a bolt Q, having a spring Q<sup>2</sup> and lever R, and a spiral piece S, attached to a rocking shaft W, which is connected to the governor of the engine, combined with a lever O, having a slot and a plate T, all substantially as and for the purpose specified.

#### No. 42,315. Bit for Wood Working Machines.

(*Mèche pour machines à travailler le bois.*)

Edwin Gollins, Columbus, Ohio, U.S.A., 16th March, 1893; 6 years.

*Claim.*—A bit for rotary cutters for forming moulding, dado and similar work, having its cutting blade troughed or concaved out-

wardly and also curved in a direction nearly coincident with its path of motion and its cutting edge formed in a plane inclined inwardly toward the axis of rotation from a tangent plane touching the deeper cutting portion of the edge, substantially as shown and described.

#### No. 42,316. Boiler. (*Chaudières*.)

Charles F. Baker, Minneapolis, Minnesota, U. S. A., 16th March, 1893; 6 years.

*Claim.*—1st. The combination, with a furnace, of a mud drum having a water leg extending through the fire box, a vertical boiler located above the drum having its flues arranged around a central up-current chamber continuous with the water leg, and provided with a clearance and down-current chamber between the flues, and the shell of the boiler and outside circulating pipes, substantially as described. 2nd. The combination, with a furnace of a vertical boiler, a mud drum located below the fire box, a water leg extending from the drum through the fire box to the boiler, and outside circulating pipes from the boiler to the drum. 3rd. The combination, with a furnace, of a mud drum having a water leg extending through the fire box, a vertical boiler located above the drum having its flues arranged around a central up current space or chamber continuous with the water leg, and provided with a clearance and down current chamber between the flues and the shell of the boiler, outside circulating pipes and an annular partition resting on the lower boiler head, and inclosing the flues for dividing the up current from the down current columns of circulation, substantially as described. 4th. The combination, with a mud drum, of a vertical boiler having its flues concentric with the water leg of the drum, an outflow pipe from the boiler the drum, and an annular partition or diaphragm resting on the lower head of the boiler, and inclosing the flues for dividing the ascending from the descending currents, substantially as described. 5th. The combination, with the furnace A, of the shell B, the flues C, arranged around a central space D, and with the clearance chamber E, between the flues and the shell of the boiler, the mud drum G, with the vertical water leg F, passing through the fire box continuous with the central chamber D, the outside circulating pipes H, *h*, K, and the annular partition P, located on the lower head of the boiler and inclosing the flues, all arranged and operating, substantially as described and shown.

#### No. 42,317. Means for Transferring Railway Cars to and from Floating Vessels. (*Moyen de transport pour chars de chemin de fer.*)

Robert Parker Rever, Newark, New Jersey, U. S. A., 16th March, 1893; 6 years.

*Claim.*—1st. The improved frog, having both the guard and rail tread outwardly turned at the extremity, substantially as set forth and shown. 2nd. In combination, with the barge or boat *a*, having rails *a*<sup>1</sup>, and frogs *c*, *c*, with curved rail treads *c*, and curved guards *f*, and plates *g*, a dock *b*, with rails *b*<sup>1</sup>, and frog *e*, with corresponding curved treads *e*, and guards *f*, substantially as set forth. 3rd. The improved frog for transferring cars to boats, consisting of a plate *g*, having the curved and bevelled tread *d*, and curved guard *f*, substantially as set forth.

#### No. 42,318. Process of and Apparatus for Impregnating Beer with Carbonic Acids. (*Procédé et appareil pour imprégner la bière d'acide carbonique*.)

The Universal Carbonating Company, assignee of Christian Feigen-span, all of Newark, New Jersey, U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. The within described method of preparing rubber for the market, which consists in confining the beer in a closed cask filled substantially to its capacity, causing repeated external circulation of the contents of the cask from and to the cask, and injecting carbonic acid into the external current, substantially as described. 2nd. In an apparatus for preparing rub beer for the market, a closed vessel A, for containing the beer, a pump D, connecting hose B and C, and pipe *d* for introducing carbonic acid from any suitable source into the current, substantially as shown and described.

#### No. 42,319. Electric Machine for Heating Metals.

(*Machine électrique pour chauffer les métaux.*)

The Electric Forging Company, Boston, assignee of George Dexter Burton, of Boston aforesaid, and Arthur H. Eddy, Hartford, Connecticut, and George T. A. Briggs, Windsor, Connecticut, all in the U.S.A., 16th March, 1893; 6 years.

*Claim.*—1st. The combination of an electric converter for converting electric currents of high potential into those of low potential by induction, provided with metal holders in its secondary circuit arranged to hold therein the article to be heated, an alternating current dynamo connected to the primary circuit of said converter, an exciter dynamo connected to the field coils of said first dynamo, and arranged to energize the field magnets thereof, and a rheostat interposed in the electric field circuit of said exciter dynamo, and adapted to regulate the current of excitation of the fields of said first dynamo, substantially as described. 2nd. The combination of an

electric converter for converting electric currents of high potential into those of low potential by induction, provided with metal holders in its secondary circuit arranged to hold therein the article to be heated, an alternating dynamo connected to the primary circuit of said converter, an exciter dynamo connected to the field coils of said first dynamo, arranged to energize the field magnets thereof and having a shunt circuit from its armature brushes through its own field coils, and a rheostat interposed in said last named shunt circuit, adapted to regulate the excitation of the field of the exciter dynamo, substantially as described.

3rd. The combination of an electric converter for converting electric currents of high potential into those of low potential by induction, provided with metal holders in its secondary circuit arranged to hold the article to be heated, an alternating current dynamo connected to the primary circuit of said converter, an exciter dynamo connected to the field coils of said first dynamo and arranged to energize them, and a rheostat located within reach of the operator engaged in heating the metal in said metal holders, and connected in the field circuit of said exciter dynamo, and arranged to regulate the current in the same, substantially as described.

4th. The combination of an electric converter for converting electric currents of high potential into those of low potential by induction, provided with metal holders in its secondary circuit arranged to hold the article to be heated, an alternating current dynamo connected to the primary circuit of said converter, and constructed with a series of field coils upon its field magnets and with coils upon every alternate pole of the armature, whereby the latter coils are respectively located on the opposite side of the armature from poles having no coils and a source of electrical energy connected to said field coils and arranged to excite the same, substantially as described.

5th. The combination of an electric converter for converting electric currents of high potential into those of low potential by induction, provided with a pair of metal holders in its secondary circuit arranged to hold therein the metal to be heated, an alternating current dynamo connected to the primary circuit of said converter, a source of electrical energy connected to the circuit of the field coils thereof and arranged to energize the alternating current of said dynamo, and means for regulating and maintaining its proportion of voltage to amperage during the heating process, so as to first raise the temperature of the metal between the holders to a predetermined working heat at one or more points and then successively raise all the other parts thereof up evenly to said working heat, substantially as described.

6th. The process of heating a single mass of metal by controllable electric current to a predetermined even working heat, in the portion through which the current passes, substantially as described; that is to say, by the application thereof of an electrical current having its amperage regulated to first raise the temperature of the metal in one or more parts thereof to the desired working heat, and having its voltage so maintained in proportion to its amperage during the heating as to extend such direct heating effects of the current successively to the other parts, more rapidly than the desired heat could be conveyed thereto by conduction.

7th. The combination in an electric converter for converting electric currents from one potential to another by induction, of the primary circuit coils, 12, surrounding the core, the secondary circuit coils, 14, also surrounding the core, and the annular core 13, between the primary coils formed of unisolated or partially unisolated wire, arranged side by side and substantially as described.

8th. The combination of an electrical converter for converting electric currents from a high potential to a lower potential by induction, of the primary circuit coils, 12, surrounding the core, the annular core 13, and the secondary coils, 14, of greater diameter transversely to the core than in the direction of its length and disposed radially around the core between the primary coils and with their broader faces adjacent thereto, substantially as described.

9th. The combination in an electric converter for converting electric currents from one potential to another by induction, of the primary circuit coils 12, the annular core 13, and the series of secondary coils 14, having their positive and negative terminals respectively connected to curved conductors 18 and 19, surrounding said core externally and lying substantially parallel thereto, and having metal holders for holding the work and completing the circuit connected thereto respectively, substantially as described.

10th. The combination, in an electric converter for converting electric currents from one potential to another by induction, of the primary circuit coils 12, the annular core 13, and the series of secondary coils 14, having their positive and negative terminals respectively connected to ring conductors 18 and 19, lying substantially parallel to each other, and respectively having metal holders for holding the work and completing the circuit connected thereto, substantially as described.

11th. The combination, in an electric converter for converting electric currents from one potential to another by induction, of the primary circuit coils 12, the annular core 13, and the series of secondary coils 14, having their positive and negative terminals respectively connected to ring shaped conductors 18 and 19, surrounding said core externally, and lying substantially parallel to each other, and respectively having clamps for holding the work and completing the circuit connected thereto, substantially as described.

12th. The combination in an electric converter for converting electric currents from one potential to another by induction, of the primary circuit coils 12, arranged with two coils forming each pair in series, and

with each series pair in multiple arc in the primary circuit, such coils surrounding the core or some part thereof, the secondary coils also surrounding the core between the primary coils, and connected in the secondary circuit in multiple arc, and the terminals of the secondary circuit provided with metal holders for holding the work to be heated in the circuit.

13th. The combination in an electric converter for converting electric currents from a higher potential to a lower one by induction, of the primary coil or coils of wire in the primary circuit, an annular core surrounded by the same, and a series of coils surrounding said core, and connected in multiple arc to the secondary circuit, each of said last named coils consisting of a plate of metal placed radially and surrounding the core edgewise, or presenting its thin edge thereto, substantially as described.

14th. The combination in an electric converter for converting electric currents from a higher potential to a lower one, of the primary circuit 12, the core 13, the secondary coils 14, and the ring shaped conductors 18 and 19, respectively connected to the terminals of the secondary coils, and respectively carrying the metal arms 20 and 21, rigidly projecting therefrom and supported thereby, and provided with metal holders for holding the bar to be heated, substantially as described.

15th. The combination in an electric converter for converting electric currents from a higher potential to a lower one by induction, of the outer rings 18, 19, forming positive and negative electrical conductors, the secondary coils 14, having their terminals respectively attached thereto, and surrounding and sustaining the core 13, by interposed insulated material, and the insulated primary circuit coils also surrounding and sustained by the core, forming a complete inductorium, substantially as described.

16th. The combination in an electric converter for converting electric currents by induction from a higher to a lower potential, of the annular core 13, the primary and secondary coils surrounding the same, and the central plate of non-conducting material arranged within the core to receive the terminals 11, 11, of the primary circuit, and the connections thereto of the primary coils 12, 12, substantially as described.

17th. An electric converter for converting electric currents by induction from a higher to a lower potential, provided with two continuous rings of different polarity, disposed on the outside of the converter, and connected with opposite terminals of the secondary coils thereof.

18th. In an electric metal heating apparatus, the combination of a converter for converting electric currents from a higher to a lower potential, provided with rings of opposite polarity connected to opposite terminals of the secondary coils, and disposed on the exterior of the converter, and metal holders connected with said rings for holding the metal to be heated.

19th. The combination in an electric converter for converting electric currents from a higher potential to a lower one, of the primary circuit coils 12, the core 13, the secondary coils 14, and the ring shaped conductors 18 and 19 respectively, connected to the terminals of the secondary coils and respectively carrying metal arms on different sides thereof rigidly projecting therefrom, each pair of which arms on a different side is provided with metal holders arranged to receive the metal to be heated, and to permit the same to be handled without interfering with the work being done in any other pair on a different side, substantially as described.

20th. In an electric current converter, the combination of positive and negative rings connected to the secondary circuit of the converter, and detachable conductors of electricity connected to said rings.

21st. In an electric current converter, the combination of positive and negative rings connected to the secondary circuit of the converter, and detachable conductors of electricity connected to said rings and composed of bars of metal.

22nd. In an apparatus for heating metals by electricity for working or shaping said metals, an alternating current dynamo, an electric current converter for converting currents of high potential into those of low potential by induction, having a core 13, primary coils 12, connected in circuit with said alternating dynamo by conductors 9, secondary coils 14, composed of spiral plates, rings 18 and 19 surrounding said core, the opposite terminals of said secondary coils being connected respectively to said rings, so that one of said rings forms a positive terminal of the induced current, and the other ring forms a negative terminal of said current, a metal holder having electrode terminals, and conductors connecting the terminals of said metal holder with said rings respectively for passing the current through the metal to be heated, substantially as set forth.

#### No. 42,320. Grate for Ranges and Stoves.

(Grille pour poêles.)

William Wallace Culver, St. Louis, Missouri, U. S. A., 16th March, 1893; 6 years.

*Claim.*—1st. In a range or stove, a grate supported on gudgeons, and adapted to be shaken by a horizontal movement thereof, substantially as shown and described. 2nd. In a range or stove, a grate supported on gudgeons, free to move endwise, and interlocking projections at the ends of the grate and the fire box bottom, substantially as and for the purpose set forth. 3rd. In a range or stove, the combination of a grate having gudgeons located eccentrically, a projection on the fire box bottom adapted to receive the heavy side of the grate, said grate being adapted to be moved in a longitudinal direction, substantially as and for the purpose set

forth. 4th. In a stove or range, the combination of a grate having gudgeons 3, and 4, the gudgeon 4, having an extension 4, with projections 12, and a lever 9, having a slot with an enlargement, and which is adapted to fit over the extension 4, of the gudgeon 4, and adapted to fit in a lug or loop 13, all substantially as and for the purpose set forth.

**No. 42,321. Mariner's Compass. (Boussole.)**

Arthur Harold Wrigley, Liverpool, England, executor of the last will and testament of Arthur Wrigley, in his lifetime of Liverpool aforesaid, and John Hope, also of Liverpool, 16th March, 1893; 6 years.

*Claim.*—1st. A ship's recording compass or apparatus, in which the marking device or mechanism and card or magnet are connected, and the position of the marker controlled by the card, and said marker and card are adapted to be set or be adjusted relatively to each other according to the course in which it is intended to sail the ship, for the purposes set forth. 2nd. In a ship's recording compass or apparatus, a marking device mounted on gimbals or equivalent points, whereby said device is free to move, substantially as and for the purposes set forth. 3rd. In a ship's recording compass or apparatus, the combination of a compass card or magnet, but supported from the axis of said card or point of support of said magnet. 4th. In a ship's compass or apparatus, a marking device having its point of support out of the horizontal plane in which said compass is disposed, and being counter-balanced. 5th. In a ship's recording compass or apparatus, a compass card or magnet, a marking device connected with and controlled by said card or magnet, and a frame supporting a moving diagram, said frame and marking device being mounted on gimbals or analogous supports, and arranged and adapted to move or oscillate independently of each other upon the axis thereof. 6th. In a ship's recording compass or apparatus, a diagram, a puncturing device for marking and recording upon said diagram, the variations of the course of the ship, a table or support by which the diagram is guided about the point at which the pricking device pricks the same, and a recess aperture or depression on the opposite side of the chart, to the pricker, by which the pricker is permitted to puncture completely said diagram, for the purposes set forth. 7th. The herein described mode of marking the diagram of a ship's recording compass or apparatus, consisting in suddenly causing a marker to come into contact with or pierce said diagram, and to be withdrawn or removed therefrom. 8th. In a ship's recording compass or apparatus, which records on a diagram the course a ship sails, effecting the marking action by means of an escapement action and mechanism, said mechanism being worked by a clock or other suitable equivalent motor. 9th. In a ship's recording compass or apparatus, the combination of a marker, a diagram marked by said marker, and a slot or aperture provided in a table over which the chart moves, said slot being in the form of a circle, or arc of a circle, and disposed directly below or above, as the case may be, the path of the marking mechanism, for the purposes set forth. 10th. In a ship's recording compass or apparatus, comprising a compass card arranged and operating in a liquid, a marker supported from and controlled by said card, and a moving diagram adapted to be marked by said marker. 11th. A ship's recording compass or apparatus, having a spring motor with one spring adapted to work both a marker actuating mechanism and to move a chert past said marker, substantially as set forth. 12th. In a ship's recording compass or apparatus, effecting the recording of the course sailed by a vessel, by a moving diagram and a marker mechanically operated, both diagram and marker actuating mechanisms being effected by a spring or analogous motor. 13th. A ship's recording compass or apparatus, having a fixed and stationary table or platform, a diagram adapted to move over said table, and a marker adapted to be moved on and off said diagram, by which action it is marked. 14th. A ship's recording compass or apparatus, having a moving diagram and a marker effecting the mechanical action of said marker by an escapement mechanism, operating after the manner set forth substantially with reference to the drawings. 15th. In a ship's recording compass or apparatus, a bar, such as *c*, worked by a motor and adapted to actuate the marker, in the manner described, for the purpose set forth. 16th. The combination of a marker *d*, bar *c*, card and magnets *a'*, or magnets *a'*, and gimbal mechanism *d'*, substantially as described. 17th. In a ship's recording compass or apparatus, the combination of a bar, such as *c*, by which the marker is actuated, and rods or bars *c'*, said rods or bars being actuated by clock mechanism and adapted to move the bar *c* up and down, for the purpose set forth. 18th. In a ship's recording compass or apparatus, a marking device actuated by an escapement lever, said lever being actuated by a cam eccentric or crank, substantially as described, with reference to the drawings. 19th. In a ship's recording compass or apparatus, the combination of a spring motor, having a single spring, one end of said spring being adapted to work through toothed gearing, a mechanism for actuating a marker, and the other end being connected to gearing, and adapted to actuate an escapement lever or controlling bar, by which said escapement mechanism is controlled, substantially in the manner and for the purposes set forth. 20th. In a ship's recording compass or apparatus, the combination of a diagram moving mechanism, the spring motor and mechanism moved thereby, and the compass, arranged as set forth. 21st. In a ship's

recording apparatus, a marker, such as *d*, or its equivalent, supported from a pivot *b* through gimbals or like or analogous joints, and magnets *a'*, supported from said pivot and connected with and controlling said marker, in the manner set forth. 22nd. The arrangement and combination of pricker or marker *d*, gimbals *d'*, pivot *b*, socket *a'*, magnets *a'*, and the marker actuating bar *c*, substantially as set forth. 23rd. In a ship's recording compass or apparatus, a marking device hinged at one end and guided and controlled by a bar such as *c*, substantially as and for the purpose set forth. 24th. In a ship's recording compass or apparatus, a marking device gimballed to the mounting of the magnets or needles in the same plane as the point of the pivot which supports said needles or magnets. 25th. In a ship's recording compass or apparatus, a marking bar or device, being hung to the gimbals slightly above its centre of gravity, one end being bifurcated and the other having a counter-balance weight. 26th. In a ship's recording compass or apparatus, a segmental or circular bar such as *c*, of angular section, adapted to receive the bifurcated end of the marking bar employed to mark the diagram of the apparatus, substantially as described. 27th. In a ship's recording compass or apparatus, placing the motor spring concentric with the vertical axis of the magnetic needle, whereby its influence upon the magnetic needle is neutralized.

**No. 42,322. Cleaner for Disk Harrows.**

(*Nettoyeur pour herbes à disque.*)

Clinton Merrick, Forest City, Iowa, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. A cleaner for disk harrows, consisting of a piece having a horizontal and a vertical portion at its upper end, an outward bend below the vertical portion, and its lower portion bent inward gradually, substantially as set forth. 2nd. A cleaner for disk harrows, consisting of a piece having its upper portion attached to the beam thereof and its lower end extending downward, and an upwardly extending arm which has its rear end projecting in rear of the said cleaner proper, substantially as specified.

**No. 42,323. Lumber for Flooring, etc.**

(*Bois pour parqueterie, etc.*)

Frank J. Feldmann, Detroit, Michigan, U.S.A., 18th March, 1893; 6 years.

*Claim.*—As an article of manufacture, boards for flooring, roofing and like purposes, one board formed at its edge with a recess, and the other board formed at its adjacent edge with a correspondingly shaped tongue, said recess entering the edge of the board at the surface thereof, and projecting inward and downward therefrom, and said tongue entering said recess at the surface, the lower side of said recess constructed on a straight line, substantially as described.

**No. 42,324. Organ. (Orgue.)**

Charles Silveski Haskell and William Edward Haskell, both of Philadelphia, Pennsylvania, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. An organ provided with draw stops, a swell pedal pneumatic draw stop actuating mechanism, and a slide connected with the swell pedal and adapted to control said pneumatic mechanism, the construction being such that the opening and closing of the swell causes the slide through the instrumentality of the pneumatic mechanism to shift the draw stops out and in one after another, thereby enhancing and perfecting the tone, quality and power of the swell. 2nd. An organ provided with draw stops, pneumatic mechanism adapted to be brought into action for shifting each of said draw stops out and in, throttle valves for the pneumatic mechanism, a slide for controlling the pneumatic mechanism to permit of the simultaneous and successive shifting of the draw stops, and means accessible to the organist for operating the throttle valves and slide. 3rd. An organ provided with draw stops, pneumatic mechanism adapted to be brought into action for shifting each of said draw stops out and in, throttle valves for said pneumatic mechanism, a slide for controlling the pneumatic mechanism, draw plates for confining the action of the slide to the pneumatic mechanism appertaining to certain sets or divisions of draw stops, and means accessible to the organist for controlling the slide, draw plates and throttle valves. 4th. An organ provided with draw stops, pneumatic mechanism for shifting each of said draw stops out and in, a slide adapted to control said mechanism and combination valves respectively adapted to simultaneously effect the pushing out of draw stops in predetermined combinations or groups and the pushing in of the remaining draw stops, and means accessible to the organist for operating said valves. 5th. An organ provided with draw stops, an air pressure chamber, a pair of bellows respectively connected with each of the draw stops, air conduits leading from the interior of each bellows leading from the interior of each bellows and adapted to normally communicate with the interior of the air pressure chamber to maintain said bellows in equilibrium and permit of the pushing in and out of stops by hand, valves for permitting said conduits to communicate with the atmosphere to pneumatically effect the movement of the draw stops, and means accessible to the organist for actuating said valves, substantially as and for the purposes set forth. 6th. An organ provided with draw stops, pneumatic mechanism for

pushing each of said draw stops out and in, two sets or air channels or passages whereof one set effects the pushing in and the other the pushing out of stops, throttle valves for admitting a supply of air to the respective sets of channels, a slide for opening and closing all the air channels of each set and for simultaneously opening one and closing the other of the corresponding channels that appertain to the same draw stops, and means accessible to the organist for operating the throttle valve and slide, substantially as and for the purposes set forth. 7th. An organ provided with draw stops, pneumatic mechanism for pushing each of said draw stops out and in, two sets of air channels, whereof one set operate to effect the pushing out and the other set to effect the pushing in of draw stops, throttle valves for admitting a supply of air into the respective sets of channels, a slide for opening and closing all the air channels of each set and for simultaneously opening one and closing the other of the corresponding channels that appertain to the same draw stops, draw plates for opening and closing all the channels appertaining to certain groups of stops, and means accessible to the organist for operating the throttle valve, slide and draw plates, substantially as and for the purposes set forth. 8th. An organ provided with draw stops, pneumatic mechanism for pushing each of said draw stops in and out, two sets of air channels and their accessories, whereof one set operate to effect the pushing out and the other set the pushing in of draw stops, of ancillary openings for admitting air to said channels to simultaneously effect the pushing out of certain stops in combination or groups, and the pushing in of the remaining stops, combination valves for each of said sets or openings, and means accessible to the organist for operating said valves, substantially as and for the purposes set forth. 9th. In an organ, a series of draw stops, pneumatic mechanism for pushing each of the draw stops in and out, two sets of valves and their complemental bellows, whereof one set effects the pushing out and the other the pushing in of draw stops, two sets of air channels, and two sets of grooves whereof one set communicates with one set of channels and bellows, and whereof the other set communicates with the other set of channels and bellows, substantially as and for the purposes set forth. 10th. An organ provided with pneumatic draw stop actuating mechanism comprising draw stops, an air pressure chamber, pairs of bellows respectively connected with each of the draw stop rods, air conduits leading from each of the bellows and provided respectively with ports adapted for communication with the atmosphere and with the air pressure chamber, valves for controlling said ports, valve bellows for operating said valves, an auxiliary compressed air chamber, two sets of air channels from the auxiliary chamber to the valve bellows, a throttle valve for each set of channels, a slide for opening and closing said channels, perforated draw plates for closing the channels appertaining to certain groups of draw stops, and pedal devices for actuating the throttle valves and slide, substantially as and for the purposes set forth. 11th. In an organ draw stops, a series of pair of bellows provided with valves, and adapted to operate the draw stops, an auxiliary compressed air chamber, two sets of air channels for supplying air to effect the reversal of the valves of said bellows, a throttle valve appertaining to each set of air channels, and pedal attachments accessible to the organist for operating said throttle valve, substantially as and for the purposes set forth. 12th. In an organ draw stops, a series of pairs of bellows for operating the draw stops, an air pressure chamber, air conduits leading from each of the bellows, and respectively adapted for communication with the atmosphere, and with the air pressure chamber, valve and their complemental valve bellows for said conduits, an auxiliary compressed air chamber, two sets of channels for actuating the valve bellows, a throttle valve appertaining to each set of channels, and pedal attachments accessible to the organist for operating said throttle valves, substantially as and for the purposes set forth. 13th. In an organ draw stops, a series of pairs of draw stop bellows, for operating the draw stops, two sets of valves and their complemental valve bellows for reversing the position of the draw stop bellows, an auxiliary compressed air chamber, two sets of air channels communicating with the auxiliary compressed air chamber and with the respective sets of valve bellows, a throttle valve appertaining to each set of air channels, and pedal devices accessible to the organist for operating said valves, substantially as and for the purposes set forth. 14th. In an organ, a series of pairs of bellows draw stops, an auxiliary compressed air chamber, two sets of air channels for supplying air to effect the reversal of said bellows, a throttle valve appertaining to each set of channels, and means accessible to the organist for operating said throttle valves, substantially as and for the purposes set forth. 15th. In an organ, draw stops, a series of pairs of bellows adapted to operate the draw stop, an auxiliary compressed air chamber, two sets of air channels for reversing the position of said bellows, a throttle valve appertaining to each set of channels, and a slide for opening and closing the channels of either set simultaneously and successively, substantially as and for the purposes set forth. 16th. In an organ, draw stops, a series of pairs of bellows for operating the draw stops, an air pressure chamber enclosing said bellows, conduits leading to each of the bellows and respectively adapted for communication with the atmosphere and with the air pressure chamber, valves and their complemental valve bellows for each of said conduits, an auxiliary compressed air chamber, two sets of air channels for actuating the valve

bellows, a throttle valve appertaining to each set of air channels, and a slide for opening and closing the channels of either set simultaneously and successively, substantially as and for the purposes set forth. 17th. In an organ, draw stop, a series of pairs of draw stop bellows for operating the draw stops, two sets of valves and their complemental valve bellows for reversing the position of the draw stop bellows, an auxiliary compressed air chamber, two sets of air channels communicating with the auxiliary compressed air chamber, two sets of air channels communicating with the auxiliary compressed air chamber and with the respective sets of valve bellows, a throttle valve appertaining to each set of air channels, and a slide for opening and closing the channels of either set successively and simultaneously, substantially as and for the purposes set forth. 18th. In an organ, draw stops, a series of pairs of bellows provided with valves and adapted to operate the draw stops, an auxiliary compressed air chamber, two sets of air channels for supplying air to effect the reversal of the valves of said bellows, a throttle valve appertaining to each set of channels, a slide for opening and closing said channels, and a pedal accessible to the organist for operating said throttle valves and slide, substantially as and for the purposes set forth. 19th. In an organ, draw stops, a series of pairs of draw stop bellows, adapted to operate the draw stops, an auxiliary compressed air chamber, two sets of air channels for supplying air to effect the reversal of the draw stop bellows, a throttle valve appertaining to each set of air channels, a slide for opening and closing said air channels, perforated draw plates for closing certain of the air channels, and means accessible to the organist for actuating said slide, draw plates and throttle valves, substantially as and for the purposes set forth. 20th. In an organ, draw stops, a series of pairs of bellows for operating the draw stops, an air pressure chamber enclosing said bellows, conduits leading to each of the bellows and adapted for communication with the atmosphere and with the air pressure chamber, valves and their complemental valve bellows for said conduits, an auxiliary compressed air chamber two series of air channels for actuating the valve bellows, a throttle valve appertaining to each set of air channels, a slide for opening and closing said air channels, draw plates for closing certain of the air channels, and means accessible to the organist for operating said slide, throttle valves and draw plates, substantially as and for the purposes set forth. 21st. In an organ, draw stops, a series of pairs of draw stop bellows connected with the draw stop rods, two sets of valves and their complemental valve bellows for reversing the position of the draw stop bellows, an auxiliary compressed air chamber, two sets of air channels communicating with the auxiliary compressed air chamber and with the respective sets of valve bellows, a throttle valve appertaining to each of the air channels, a slide for opening and closing said air channels, draw plates for closing certain of said air channels and means accessible to the organist for actuating said slide, throttle valves and draw plates, substantially as and for the purposes set forth. 22nd. In an organ, a series of draw stops, pneumatic apparatus for actuating said draw stops, two sets of air channels for controlling the admission and exhaust valves of said pneumatic apparatus, throttle valves controlling the respective sets of air channels and means accessible to the organist for actuating said throttle valves, substantially as and for the purposes set forth. 23rd. In an organ, draw stops, pneumatic draw stop operating apparatus and a pedal and its accessories susceptible of four movements, one for causing draw stops to be pushed out, a second causing draw stops to be pushed in, a third for causing the draw stops to be pushed out successively and collectively and a fourth for causing the draw stops to be pushed in successively, substantially as and for the purposes set forth. 24th. In an organ, draw stops, pneumatic draw stop operating apparatus and its complemental throttle valves and slide, a pivotal pedal, connections between the pedal and slide, lugs movable transversely of the pedal, and connections between the throttle valve and lugs, substantially as and for the purposes set forth. 25th. In an organ, draw stops, pneumatic draw stop operating apparatus and its complemental slide, a visual indicator or telltale, a pedal for operating said slide, and connections between said slide and indicator, substantially as and for the purposes set forth. 26th. In an organ, draw stops, pneumatic draw stop operating apparatus and its complemental slide, a visual indicator or telltale and link work interposed between the slide and indicator, substantially as and for the purposes set forth. 27th. In an organ, draw stops, pneumatic draw stop actuating apparatus, perforated draw plates for throwing the pneumatic apparatus appertaining to certain groups or divisions of draw stops out of action, buttons accessible from the key board, and link work connected with the button and draw plates, substantially as and for the purposes set forth. 28th. In an organ, draw stops, two sets of draw stop bellows, whereof one set is adapted to push out draw stops and the other set is adapted to push in draw stops, two sets of air channels appertaining respectively to the sets of draw stop bellows, an ancillary air chamber, openings from said chamber into certain of the channels that operate to push out stops and to the channels that operate to push in the remaining stops, valves for controlling said openings, and means accessible to the organist for operating said valves, substantially as and for the purposes set forth. 29th. An organ, provided with a series of draw stops, a swell pedal provided with pivotal lugs, pneumatic mechanism for pushing each of said draw stops out and in, two sets of air channels whereof one set operate to effect the pushing out and the other set to effect the pushing in

of the draw stops throttle valves, a slide, connections between the throttle valves and pivotal lugs, connections between the small pedal and slide, a visual indicator, connections between the indicator and slide, draw plates, push buttons, connections between the push button and draw plates, and combination pedals and their accessories, substantially as and for the purposes set forth.

**No. 42,325. Disc Harrow. (*Herse à disque.*)**

Samuel W. Woodlan, Smithville, Ontario, Canada, 18th March, 1893; 6 years.

*Claim.*—1st. In a disc harrow, the draw rods pivoted to a lugged collar on or about the centre of the disc shafts, substantially as and for the purpose specified. 2nd. In a disc harrow, the combination of the front cross bar B, rear cross bar B', and draw bars passing through loops on the outer ends of the rear cross bar B', and through the front cross bar secured by pins *b*, substantially as and for the purpose specified. 3rd. In a disc harrow, the combination with discs and their shafts of the cross bars B, B', draw rods I, I, braces C, C, C', C', substantially as and for the purpose specified. 4th. In a disc harrow, the combination with discs and their shafts, of the collars 2, having lugs *k*, placed in the centre of the shafts D, D, draw rods I, I, attached to said collars 2, collars 4, and *i*, *i*, on said draw rods and brace rods 3, 3, constructed substantially as and for the purpose specified. 5th. In a disc harrow, top planks G, G, secured over the discs by standards H, H, to the disc shafts D, D, the standards provided at their lower ends with lugs to attach lever rods *b*, *b*, when the discs are reversed. 6th. In a disc harrow, a spring bar placed over the top planks G, G, and bolted to the spring seat and having a slot at both ends to enable a spring at each end to be adjustably secured thereto and to the top planks, substantially as and for the purpose specified. 7th. In a disc harrow, in combination with spring bar L, having slots M, of the springs N, N, adjustably secured to the bar L, and to the top planks G, G, substantially as and for the purpose specified. 8th. The slotted metal plate *s*, attached to and in combination with the top planks G, G, and devices at both ends of the springs N, N, to enable them to be moved on the top planks and also on the spring bar L, and be secured in any desired point, substantially as and for the purpose specified. 9th. The combination of the top planks G, G, slotted metal plates *s*, *s*, springs N, N, plates *n*, *n*, eye bolts *r*, *r*, circular blocks *u*, *u*, bolts *o*, *o*, washers *p*, *p*, and nuts *q*, *q*, for adjustably reversing and securing the springs, substantially as specified. 10th. In a disc harrow, the combination with the discs and disc shafts, of the journal stands H, H, connecting rods *b*, *b*, spring lever R, tongue A, substantially as and for the purpose specified.

**No. 42,326. Lubricator for Axles and Wheels.**

(*Graisseur pour essieux et roues.*)

Herbert Clouston, Mount Erwin, Ontario, Canada, 18th March, 1893; 6 years.

*Claim.*—1st. An oiler for axle journals, comprised of a tank, branch pipes leading from the tank to the axle journal, and an intermediate valve with means for operating the same when desired, as and for the purpose specified. 2nd. A tank A, having a cylindrical casing D, located beneath it, a passageway G', leading from the tank A, into the cylindrical casing, and another passageway G, leading from the cylindrical casing into the branch pipes H, and a plunger valve C, having an annular groove or opening *c*, and means whereby the opening *c*, is transferred from its normal position beneath the passageway G, to a position above the opening *b*, as and for the purpose specified. 3rd. The tank A, provided with a passageway G, connecting it to the cylindrical casing D, the plunger valve C, provided with an annular groove or opening *c*, in combination with the pipe E, leading from the annular groove *c*, to the cap F, above the top of the tank A, and having openings *e*, at the top, as and for the purpose specified. 4th. The combination, with the tank A, connected to the plunger valve by a passageway as specified, and having an annular groove *c*, and the pipes H, leading from the opening *b*, made in the casing D, of the pipe E, having openings *e*, made in it above the level of the top of the tank, as and for the purpose specified. 5th. The tank A, connected to the cylindrical casing D, by the passageway G, the plunger valve C, provided with an annular groove *c*, the pipe E, leading from the cylindrical casing D, to a point above the tank A, the spiral spring J, connecting the end of the plunger valve with the end of the casing, the passageway *h*, made in the cylindrical casing A, and the branch pipes H, leading therefrom, the sheaf *e*, and pulley K, secured in the outer end of the plunger valve and the cord M, passing around the pulleys L and K, and operated as and for the purpose specified. 6th. The combination, with the valve C, alternately connected with the tank A, and branch pipes H, and means whereby the valve is operated, substantially as and for the purpose specified.

**No. 42,327. Apparatus for Raising and Lowering Incandescent Electric Lamps. (*Appareil pour hausser et baisser les lampes électriques à incandescence.*)**

William J. Kidd, Ottawa, Ontario, Canada, 18th March, 1893; 6 years.

*Claim.*—1st. A take-up for suspended incandescent electric lamps, having the cylinder B, upon which the cord G is wound, operated by means of the coiled spring E, substantially as set forth. 2nd. In

a take-up for incandescent electric lamps, the spring E, combined with cylinder B, having the groove *b*, and the cap C, having the ratchet teeth H, to engage with the frame I, to assist in winding the said spring, substantially as set forth. 3rd. The combination of the cylinder B, having a rotund middle part to cause the cord G, to slide towards its ends when wound on the same with the spring E, the cap C, and frame I, all substantially as set forth. 4th. The combination, with the cylinder B, of the spring E, the cap C, the frame I, and the enclosing case A, having apertures for the ingress and egress of the cord G, and means about said apertures to lessen the friction of the cord against the edges of said apertures when the device is used, substantially as described. 5th. In a take-up for incandescent lamps, the case A, having its joint in the direction of the cord G, to facilitate the inclosing of the spool and cord, as shown and described for the purposes set forth.

**No. 42,328. Bidet or Hip Bath. (*Bidet ou demi-bain.*)**

Rosa Godden, Midhurst, Sussex, England, 18th March, 1893; 6 years.

*Claim.*—The improved bidet consisting of a frame or support *i*, provided with receptacle or pan *a*, lid *c*, and inner lid and seat *b*, having grooves *d*, in the front thereof for reception of legs of user, all in combination, substantially as described and shown.

**No. 42,329. Measure and Indicator.**

(*Measure et indicateur.*)

Felix Boas, Potsdam, and Samuel Weinmann, Charlottenburg, Prussia, 18th March, 1893; 6 years.

*Claim.*—1st. A measure for measuring a series of similar lengths, constructed to indicate by a pointer the number of lengths measured, substantially as hereinbefore described and as illustrated by the accompanying drawing. 2nd. In a measure for measuring a series of similar lengths, the combination with a pointer, and divisions for indicating the number of lengths, of a toothed rod, a click engaging with the toothed rod, a lever for putting the click out of gear, a sliding carriage carrying the click pointer and disengaging lever, and means for reciprocating the toothed rod, constructed and arranged substantially as hereinbefore described and as illustrated by the accompanying drawing.

**No. 42,330. Thill Tug. (*Porte-limonière.*)**

Anderson Campbell Marshall, Coruna, Michigan, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. In a harness, the combination with the saddle and saddle girth, of a thill tug consisting of a strap suspended therefrom above the line of the thill, apertured near its upper end, of a loop formed therein by passing the rear end of the strap through said apertures, and a buckle below the thill to which the end of the strap is secured, substantially as described. 2nd. In a harness, the combination with a back strap having a billet secured on its end, of a tug consisting of a single piece, flexible strap formed with a perforated enlarged portion F, having unobstructed sides, attaching means on its upper end and arranged to be folded in or out to form shaft supporting loops, its end passing through the aperture, and carried down and secured to the girth, substantially as described.

**No. 42,331. Process of Manufacturing Chemicals by Electricity. (*Procédé de fabrication des produits chimiques.*)**

Hermann Niewerth, Lutherstrasse, Berlin, German Empire, 18th March, 1893; 6 years.

*Claim.*—1st. A process for the manufacture of compound and simple bodies or chemical products, characterized by the fact that frictional influence, or induced electricity, is conducted to the reacting substance or substances by the aid of a gas or vapour which is electrically conductive, or some other conductor, the transformation being effected, or assisted by the action of the electricity so conducted. 2nd. In the process for the manufacture of compound or simple bodies or chemical products the use of heat to assist in the desired transformation, by allowing the reacting materials to operate upon each other in a chamber under the influence of electricity, conducted to them especially frictional electricity, and with conduction to them of heat, substantially as set forth. 3rd. An apparatus suitable for carrying out the process described for the generation of electricity, consisting of receivers, one or more of which is filled with fragments of glass or some substance with a similar electrical action, and the other or others with fragments of metal or some substance with similar electrical action a current of air, gas, or vapour being driven between them, preferably metallic vapour, so that by friction on the fragments of glass or their substitutes positive or negative electricity respectively is generated, substantially as set forth. 4th. An apparatus suitable for carrying out the process desired consisting essentially of an exciter holder which is filled for the purpose of generating positive electricity with fragments of glass or other material with similar electrical action, and for the generation of negative electricity with fragments of metal or other material with a similar electrical action, and through which, or through the contents of which air, gas, or vapour is driven, while the exciter itself is placed in a reaction chamber for the reception of the reacting substances, and can have its covering

or walls conductively connected to the earth or to a source of electricity of a sign contrary to that generated in the exciter, substantially as set forth. 5th. The apparatus described in which the walls of the reaction chamber are constructed of a material which corresponds to the contents of the exciter holder so that by the friction of one or more gases or vapours either among themselves only or on the walls of the apparatus the electricity may be partially or entirely generated, substantially as set forth.

**No. 42,332. Automatic Liquid Gauge.**

(*Indicateur automatique pour liquides.*)

George Anthony Lewis, Toronto, Ontario, Canada, 18th March, 1893; 6 years.

*Claim.*—A gravity acting liquid gauge composed of a buoy having a graduated bar attached to its upper side, the means as provided to encircle and direct said buoy, the guide to allow the said graduated bar free vertical movement, and the cap to cover said bar, substantially as shown and described.

**No. 42,333. Electric Motor Switch.**

(*Aiguille pour moteurs électriques.*)

Edwin Wilbur Rice, jr., Lynn, Massachusetts, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. The combination with an electric motor on a constant potential main, of a rheostatic switch and main switch, an independently pivoted actuating handle, and a retracting spring for opening the main switch when the motor is to be thrown out of circuit. 2nd. The combination, with an electric motor fed from constant potential mains of switching contacts and connections whereby the connection of the armature with both mains may be broken or closed at pleasure, a rheostat in a branch containing the armature, a rheostatic switch actuated with the main switch and moved into position to interpose resistance in the armature circuit when the main switch is thrown to break the armature circuit, a field magnet in a branch independent of the armature, and a switch for making and breaking the circuit thereof mechanically connected with the said rheostatic and armature switch. 3rd. The combination, with an electric motor, having its field and armature coils in separate circuits and supplied by a current from a source of approximately constant potential, of a switch for breaking and making the connection of the shunt field magnet coils, with the source of constant potential, and a rheostatic switch in the branch or circuit with the armature, said switches being interdependent when operated in a direction to start the motor and having contacts adjusted in the manner described to establish the field magnet circuit before the armature circuit is made. 4th. The combination, with an electric motor fed from constant potential mains, and having armature and field magnet coils in separate branches, of a main circuit switch having two sets of making and breaking contacts placed respectively in the connection between the two sides of the motor and the two mains, and a connected rheostatic switch controlling the branch containing the armature and having an initial circuit closing contact adjusted or placed in position, as described, so that the armature circuit may not be completed until after the circuit to the field magnet is completed. 5th. The combination, with an electric motor run from constant potential mains, and having its field and armature in separate branches, of connected and interdependent main and rheostatic switches controlling the circuit of said armature and field, and contacts and connections whereby the armature circuit is broken on both sides of the armature when the said switches are thrown to stop the motor and the circuit to the field is completed before the armature circuit is closed to start the motor. 6th. The combination, with an electric motor, having its armature and field in separate branches and run from constant potential mains, of interdependent main and rheostatic switches, the main switch having circuit making and breaking contacts connected to one side of the armature and field and the rheostatic switch having a contact and resistance connected to the opposite side of said armature. 7th. The combination, with an electric motor, having its armature and field in separate branches, and fed from constant potential mains, of a main starting and stopping switch, having contacts between both sides of the field magnet and the mains, a connection from one side of the armature to the main through a main switch contact or contacts, and a connection from the other side of the motor through a rheostatic switch, the operation of which is dependent upon the operation of the main switch, as and for the purpose described.

**No. 42,334. Electric Locomotive.**

(*Locomotive électrique.*)

Norman C. Bassett, of Lynn, Massachusetts, U.S.A., 18th March 1893; 6 years.

*Claim.*—1st. The combination, in an electric locomotive of a motor having its armature concentric with an axle of the locomotive, and having a field magnet with a single coil embracing the armature, a hollow shaft for the armature through which passes the axle, a yielding connection between the said shaft and the wheel, and a yielding support for the motor from the frame of the locomotive. 2nd. The combination with an electric locomotive of a motor and means for suspending it from the frame of the locomotive, compris-

ing links extending to the centre of gravity of the motor. 3rd. The combination in an electric locomotive of a motor suspended from the frame of the locomotive by links extending to the centre of gravity of the motor and a supplementary spring connection between the motor and the frame. 4th. The combination, in an electric locomotive of a motor having its armature concentric with the axle, a field magnet having bearings to secure proper alignment between it and the armature, a yielding connection between the said armature and a wheel of the vehicle, and means for supporting the motor, consisting of links extending from the frame of the locomotive to the centre of gravity of the motor, and a spring connection between the motor and frame. 5th. The combination, in an electric locomotive, of a motor having its armature concentric with the axle of the locomotive and supported by rubber cushions from the frame of the locomotive, with yielding rubber cushions between the motor shaft and the car wheel, whereby the motor is insulated by said rubber cushions, substantially as described. 6th. In an electric locomotive, the combination with a motor armature having a hollow shaft concentric with the axle, of a wheel having radial arms, a drum made in two parts clamped on the hollow shaft, and provided with radial ribs and yielding cushions between the arms and ribs, substantially as described.

**No. 42,335. Hoof Rasp for Horses.**

(*Râpe pour pieds de cheval.*)

Gilbert Tompkins, San Leandro, California, U. S. A., 18th March, 1893; 6 years.

*Claim.*—1st. A foot rasp for horses having a rasp surface adapted to act against the whole bearing surface of the hoof, a central opening to clear the frog, and a handle, substantially as described. 2nd. The herein described hand tool for leveling the hoofs of horses consisting of a plate having a rasp surface adapted to set against the whole bearing surface of the hoof, and a central opening to clear the frog.

**No. 42,336. Engine for Pulping Fibrous Material.**

(*Machine pour la fabrication de la pâte à papier des matières fibreuses.*)

James Taylor, New Wandsworth, County of Surrey, England, 18th March, 1893; 6 years.

*Claim.*—1st. In combination, a mixing chest 12, gradually increasing in width and depth from its entrance to its exit end and formed with rounded ends and with a steeply inclined bottom terminating in an outlet 14, an inclined revolving mixer 13, distending correspondingly with the formation of the bottom part of and supported by the mixing chest, and actuated by gearing 20, 21, a shaft 22, and pulley 24, (also supported by such chest) directly from the driving shaft, a beater casing 42, formed with a gradually distending and recurving inlet 61, an inclined flat bottom 62, of the full width of the casing, a bottom bed plate trough 57, closed by a removable clamped door 59, and an outlet 28, delivering directly into the top end of the mixing chest, and fitted with a beater roll 30, driven directly from the driving shaft, the recurving portion of the inlet 61, being adapted with an adjustable gate 63, and the beater roll being supported on elastic blocks 36, adjustably seated in adjustable side levers 37, independently supported on centres 41, projecting from the casing 42, but under the control of adjusting gear common to both levers and supported by the casing 42, a duct 74, connecting the outlet from the mixing chest with the inlet into the beater casing, a circulating device arranged at any convenient part of the lowest reach of the duct 74, and formed with a casing 77, made in flanged half parts, so as to form a gradually diminishing inlet 79, an inner chamber 80, having a double inclined top and opposite eyes 82, an outlet 101, stuffing boxes 83, and an extending bed plate 86, the chamber 80, being fitted with a circulator 81, formed with a series of distended U-like arms curved backwardly in relation to their direction of rotation and mounted on a shaft 84, supported by the casing 77, and by bearings 85, rising from its bed plate 86, and being driven directly from the driving shaft, and a deflecting device 76, also arranged at any convenient part of the lowest reach of the duct 74, and made integral with an inlet and with two outlets respectively connecting with the duct 74, and with a duct 91, leading to the "store chests," and with an intermediate part of a rectangular formation and fitted with a counter weighed adjustable gate 93, adapted to entirely close either the through way to the beating device or that to the store chest as desired, the whole co-operating as set forth. 2nd. A mixing chest 12, gradually increasing in width and depth from its entrance to its exit end, and formed with rounded ends and with a steeply inclined bottom terminating in an outlet 14, and with external bearings 16, as set forth. 3rd. In combination, a mixing chest 12, gradually increasing in width and depth from its entrance to its exit end, and formed with rounded ends and with a steeply inclined bottom terminating in an outlet 14, and with external bearings 16, an inclined revolving mixer 13, supported in said bearings and distending correspondingly with the formation of the bottom part of the mixing chest; and gearing 20, 21, a shaft 22, and pulley 24, supported by such chest and actuating the mixer directly from the driving shaft, as set forth. 4th. In combination, a beater casing 42, formed with a gradually distending and recurving inlet 61, an

inclined flat bottom 62, of the full width of the casing, a bottom bed plate trough 57, closed by a removable clamped door 59, and an outlet 28, a series of bed plates 52, and a beater roll 30, the recurring portion of the inlet 61, being adapted with an adjustable gate 63, on a spindle 64, operated by a hand lever 65, and the beater roll being supported by elastic blocks 36, adjustably seated on adjusting screws 39, carried by adjustable side levers 37, which are supported on centres 41, projecting from the casing 42, and are both under the control of adjusting gear consisting of nuts 43, screws 44, worm wheels 47, worms 48, a shaft 49, and hand wheel 50, also supported by the casing 42, and common to both levers, as set forth. 5th. In combination, a circulator casing 77, made in flanged half parts so as to form a gradually diminishing inlet 79, an inner chamber 80, having a double inclined top and opposite eyes 82, an outlet 101, stuffing boxes 83, and an extending bed plate 86, and a circulator 81, rotating within such chamber 80, and formed with a series of distended U-like arms curved backwardly in relation to their direction of rotation and mounted on a shaft 84, supported by the casing 77, and by bearings 85, rising from said bed plate, as set forth. 6th. In combination, a deflecting chamber made integral with an inlet and with two outlets and an intermediate rectangular part, and a counterweighted adjustable gate 93, fast on a spindle 94, and adapted to entirely close either outlet as desired, and lever arms 98, 100, and a connecting rod, 99, for operating said gate, as set forth.

**No. 42,337. Trunks, Knapsacks, Valises, &c.**

(*Coffre, havre-sac, valise, etc.*)

Arthur William McLeod Keen, Montreal, Quebec, Canada, 18th March, 1893; 6 years.

*Claim.*—1st. A trunk or like receptacle having its body and lid or cover formed of separate single metallic casting, as set forth. 2nd. A trunk or like receptacle of oblong form containing transverse partitions, and adapted to be set upon its end in order that said partitions may be used as shelves, for the purpose set forth. 3rd. A trunk or receptacle having its body formed of a separate single metallic casting, and provided with sliding lids, as set forth.

**No. 42,338. Process of Obtaining Bromine from Natural Brine.** (*Procédé de production de brôme de la saumure naturelle.*)

Herbert Henry Dow, Midland, Michigan, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. A process of obtaining bromine from brine or bitter water, which consists in treating such brine or bitter water to set the bromine free from its chemical combination, then separating the freed bromine from the brine or bitter water by means of an aeriform body, and finally absorbing the bromine from the aeriform body with suitable absorbing materials. 2nd. The process herein described of extracting bromine from brine or bitter water, and consisting, first, in freeing the bromine from its chemical combination; second, recovering the dissolved bromine from the brine by air brought in contact with the brine; third, recovering the bromine from the air by bringing the latter in contact with such substance as will readily combine with bromine, substantially as set forth. 3rd. The process herein described of obtaining bromine from natural salt water, which consists in treating such salt water to set the bromine free from its chemical combination, then separating the freed bromine from the salt water by means of an air blast, and finally absorbing the bromine from the air with suitable absorbing materials. 4th. The process herein described of extracting bromine from brine or bitter water, and consisting, first, in freeing the bromine from its chemical combination; second, separating the bromine from the brine by means of aeriform body brought in contact with the brine; third, recovering the bromine from such aeriform body by bringing the latter in contact with a metal or substance that will combine with the bromine, thereby producing a bromine compound, substantially as set forth. 5th. The process herein described of extracting bromine from brine or bitter water, and consisting, first, in freeing the bromine from its chemical combination; second, separating the bromine from the brine by means of aeriform body brought in contact with the brine; third, recovering the bromine from such aeriform body by bringing the latter in contact with iron, thereby producing bromide of iron, substantially as set forth. 6th. The process herein described of extracting bromine from brine or bitter water, and reducing the product to a bromine compound, consisting, first, in freeing the bromide from its chemical combination; second, separating the bromine from the brine by means of an air current; third, forcing the bromine laden air through a metal or substance that will combine with the bromine, thus producing a bromide compound, and finally concentrating the latter by boiling, substantially as set forth.

**No. 42,339. Gate.** (*Barrière.*)

Edward Augustus Casper, Princeville, Illinois, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. In a gate, the combination of suitable rollers on which the same is hung and guided, with means for automatically opening and closing said gate, consisting of a double rack bar, a cogged pinion engaged by said rack bar, a vertical arm attached to said rack bar, a horizontal lever pivoted to the cross piece of the main uprights and the handle for operating said horizontal lever,

together with the intervening levers between the cogged pinion and the gate, substantially as described. 2nd. The combination with the gate, of suitable rollers connected thereto, the levers for operating said gate, the cogged pinion for operating said levers, the vertical arm carrying the double rack bar, engaging said pinion, the horizontal lever and the handles for operating the same, substantially as described. 3rd. The combination, with the gate A, of the rollers G<sup>2</sup>, G<sup>3</sup>, and G<sup>4</sup>, levers L and N, reciprocating rod I, having the double rack bar I<sup>1</sup>, the cogged pinion M, horizontal lever J, and handle J<sup>1</sup>, for operating the same, substantially as described. 4th. The combination, with the gate A, of the levers L and N, said lever L being bent at its lower end into a right angle, which right angled portion is pivoted to the lower part of one of the main standards and having its free end pivoted to the free end of the lever N, the other end of said lever N, being pivoted to the main frame, the cogged pinion connected rigidly to the right angled portion of the lever L, the double rack bar for operating said pinion, said rack bar being held in brackets secured to the main uprights and the reciprocating rod for operating said rack bar, together with the horizontal lever and its operating handles, substantially as described.

**No. 42,340. Stamp Cancellor and Post Marking.**

(*Machine à maculer les timbres-poste et à timbrer les lettres.*)

William Rodolphus Landfear, Brooklyn, New York, U.S.A., 18th March, 1893; 6 years.

*Claim.*—1st. In a mail cancelling and post marking machine, a receiving hopper having a position oblique to the horizontal plane, its ends substantially parallel and gradually contracting in width from the top downwardly, the interior of said hopper also contracting in size from one end or edge toward the other, substantially as set forth. 2nd. The combination with the hopper, the impression roller and the cancelling wheel or cylinder, of a stop under the control of the wheel or cylinder to release the mail at intervals, and a second stop under the control of the advancing mail matter for holding the mail matter in position to be acted upon by the wheel or cylinder, substantially as set forth. 3rd. The combination with the cancelling wheel or cylinder and means for operating it, of the inking roller, a movable support in which the inking roller is mounted to permit it to move into and out of engagement with the cancelling wheel or cylinder, an intermediate roller, a swinging support in which the intermediate roller is mounted, whereby the intermediate roller is swung into and out of position between the cancelling wheel or cylinder and a bearing rim on the inking roller, substantially as set forth. 4th. The combination with the hopper, the cancelling wheel, means for operating it, an inking roller and means for moving the inking roller toward and away from the cancelling wheel, of an arm supported to move with inking roller and having an engagement with a fixed support to hold the inking roller away from the faces of the type, said arm being under the control of the falling letter within the hopper to hold it away from said fixed support and allow the inking roller to engage the type on the cancelling wheel, substantially as set forth. 5th. The combination with the hopper, the cancelling wheel, the ink supply and the vibrating inking roller, of a spring actuated arm depending from the inking roller support and extending normally across the interior of the hopper, and a fixed stop with which said arm is adapted to engage and hold the inking roller away from the cancelling wheel, the said arm being under the control of a letter within the hopper to hold it out of engagement with said fixed stop, substantially as set forth. 6th. The combination with the cancelling wheel and means for operating it, of the reciprocating stacker, the laterally tilted receiving trough along which the stacker is adapted to move and a stop on the face of the trough in position to hold the letter during its passage over it out of its subsequent adjustment under the influence of gravity, substantially as set forth.

**No. 42,341. Churn.** (*Baratte.*)

Ruby Z. Curtis, Long Lake, assignee of George W. Bushaw, Minnesota, U.S.A., 20th March, 1893; 6 years.

*Claim.*—The combination, with a churn body provided with an elongated slot through one of its side walls, of an air chute or chest continuous with said slot and having an open mouth above the cream level, a beater shaft, and a series of beater blades carried by the shaft, each of which has a concave face and a slit at the back or bottom of the cavity, substantially as described.

**No. 42,342. Cash Register and Indicator.**

(*Régistre et indicateur de monnaie.*)

Jerome Josiah Webster, Northampton, Massachusetts, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. The combination of a series of keys having a common fulcrum, and each having an arc-shaped rack concentric with said fulcrum, a wing or pawl adapted to engage the rack of any partially depressed key, and to prevent the return of such key until such key is fully depressed, and a rocking plate having the same fulcrum with said keys, and rocked by the depression of any of said keys, and adapted when any such key is fully depressed to strike said wing or pawl, and move it out of engagement with the rack of such key, as and for the purpose specified. 2nd. The combination of a series of keys having a common fulcrum, and each having an

arc-shaped rack concentric with said fulcrum, a wing or pawl adapted to engage the rack of any partially depressed key, and to prevent the return of such key until such key is fully depressed, and a rocking plate having the same fulcrum with said keys, and rocked by the depression of any of said keys and provided with backwardly extending downhanging arms adapted when any such key is fully depressed to strike said wing or pawl and move said pawl out of engagement with the rack of such key, as and for the purpose specified. 3rd. The combination of a series of keys, each provided with a rack, and having a common fulcrum, a pivoted pawl adapted to engage any one of said racks when its key is partially depressed to prevent a return of said key or to be turned out of engagement with said racks, said pawl having a downhanging arm, a spring pressing against the lower end of said arm to hold said pawl in either of said positions, and a rocking plate adapted to be rocked by the depression of any of said keys and when any key is fully depressed to strike said pawl above its pivot, and throw the same out of engagement with the rack of such key to allow said key to return to its normal position and then to strike said pawl below its pivot, and to throw said pawl into position to engage the rack of the key next depressed, as and for the purpose specified. 4th. The combination of a series of keys, each provided with a rack and having a common fulcrum, a pivoted pawl adapted to engage any one of said racks when its key is partially depressed to prevent a return of said key or to be turned out of engagement with said racks, said pawl having a downhanging arm, a leaf spring pressing against the lower end of said arm, and having an upward projection to hold said pawl in either of its positions, and a rocking plate adapted to be rocked by the depression of any of said keys, and having an arm adapted when any key is fully depressed to strike said pawl above its pivot, and throw the same out of engagement with the rack of such key to allow said pawl below its pivot and to throw said pawl into position to engage the rack of the key next depressed, as and for the purpose specified. 5th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys, and having a downhanging hook secured thereto, the bell crank lever pivoted on said case, and having a lower horizontal arm provided with a hook, and a catch secured on the top of said drawer and adapted to be engaged by said last named hook to hold said drawer closed, the upper arm of said lever being arranged to be struck by said hook on said rocking plate when said plate is so rocked to release said drawer and allow the same to be opened, as and for the purpose specified. 6th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys, and having a downhanging hook secured thereto, the bell crank lever pivoted on said case and having a lower arm provided with a hook, a catch secured to the top of said drawer and adapted to be engaged by said last named hook to hold said drawer closed, the upper arm of said lever being arranged to be struck by said hook on said rocking plate when said plate is so rocked to release said drawer, and a spring to throw said drawer open when so released, as and for the purpose specified. 7th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys, and having a downhanging hook secured thereto, the bell crank lever pivoted on said case and having a lower arm provided with a hook, and a catch secured to the top of said drawer and adapted to be engaged by said last named hook to hold said drawer closed, the end of said lower arm being bevelled to allow said catch and drawer to be pushed under said lower arm and the upper arm of said lever being arranged to be struck by said hook on said rocking plate when said plate is so rocked to turn said lever on its fulcrum to release said drawer and allow the same to be opened, as and for the purpose specified. 8th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys and having a downhanging hook secured thereto, the bell crank lever pivoted on said case and having a lower arm provided with a hook, and a catch secured to the top of said drawer and adapted to be engaged by said last named hook to hold said drawer closed, the end of said lower arm being bevelled to allow said catch and drawer to be pushed under said lower arm and to raise the same, the upper arm of said lever being provided with a hook adapted to engage the hooks secured to said rocking plate when said drawer is open and at such times to prevent the rocking of said plate and the depression of said keys, but to be thrown out of engagement therewith by the closing of said drawer, as and for the purpose specified. 9th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys, the bell crank lever pivoted on said case and having a lower arm provided with a hook, a catch secured to the top of said drawer and adapted to be engaged by said hook to hold said drawer closed, the end of said lower arm being bevelled to allow said catch and drawer to be pushed under said lower arm, and a downhanging hook adjustably secured to said rocking plate and normally arranged to engage a hook with which the upper end of said bell crank lever is provided and to prevent said rocking plate from being rocked and said keys from being depressed when said drawer is open, but adapted to be moved aside to clear said last named hook and allow said rocking plate and keys

to be operated at all times, as and for the purpose specified. 10th. The combination of the case, the drawer sliding therein, a series of pivoted keys, the rocking plate adapted to be rocked by the depression of any of said keys and provided with a slot, the bell crank lever pivoted on said case and having a lower arm provided with a hook, a catch secured to the top of said drawer and adapted to be engaged by said hook to hold said drawer closed, the end of said lower arm being bevelled to allow said catch and drawer to be pushed under said lower arm, and a down-hanging hook arranged in said slot, and having below said plate a shoulder and normally arranged to engage a hook with which the upper end of said bell crank lever is provided, and to prevent said rocking plate from being rocked and said keys from being depressed when said drawer is open, but adapted when said nut is loosened to be moved aside to clear said last named hook and allow said rocking plate and keys to be operated at all times, as and for the purpose specified. 11th. The combination of a series of keys having a common fulcrum, a rocking plate having the same fulcrum with said keys, and extending across all of said keys, a series of bolts sliding in said plate, parallel with the fulcrum of said plate, and normally drawn into said plate, but each adapted to be projected beyond said plate by the depression of some one of said keys, and an arm pivoted on a horizontal fulcrum back of all of said bolts and provided with a slot arranged to receive the projecting ends of said bolts when said bolts are in their lowest position, and prevent the simultaneous depression of two keys, as and for the purpose specified. 12th. The combination of a series of keys having a common fulcrum, a rocking plate having the same fulcrum with said keys and extending across all of said keys, a series of bolts sliding in said plate and arranged in a common plane parallel with the fulcrum of said plate, and normally drawn into said plate, but each adapted to be projected beyond said plate by the depression of some one of said keys, and an arm pivoted on a horizontal fulcrum back of all of said bolts and provided with a slot arranged in the plane of said bolts when said bolts are in their lowest position to receive the projecting ends of said bolts and prevent the simultaneous depression of two keys, as and for the purpose specified. 13th. The combination of a series of keys having a common fulcrum, a rocking plate having the same fulcrum with said keys and extending across all of said keys, a series of bolts sliding in said plate parallel with the fulcrum thereof at different distances from said fulcrum, and normally drawn into said plate, but each adapted to be projected beyond said plate by the depression of some one of said keys, a segmental gear provided with an arm and turning upon a horizontal pivot back of said bolts, said arm having a slot arranged to receive the projecting ends of all of said bolts when said bolts are in their lowest position at right angles with said slot, a pinion engaging said segmental gear, a pawl carried by said pinion, an indicating wheel, and a single toothed ratchet concentric with and turning with said indicating wheel and engaged by said pawl, whereby the depression of any key will rotate said indicating wheel, as and for the purpose specified. 14th. The combination of a series of keys, a rocking plate having a common fulcrum with all of said keys and extending across all of said keys, and adapted to be raised by the depression of any of said keys, a series of bolts sliding in said plate, parallel with the fulcrum thereof, and each provided with an incline adapted to be struck by one of said keys when the same is depressed, whereby said bolt is caused to project beyond said plate, and an arm pivoted back of said plate, and provided with a slot adapted to receive the ends of all said bolts when said rocking plate is in its lowest position, whereby the depression of a single key will raise said plate and arm, and whereby the complete simultaneous depression of two or more keys is rendered impossible, as and for the purpose specified. 15th. The combination of a series of keys, a rocking plate having a common fulcrum with all of said keys, and extending across all of said keys, and adapted to be raised by the depression of any of said keys, a series of bolts sliding in said plate parallel with the fulcrum thereof, and each provided with an incline adapted to be struck by one of said keys when the same is depressed, whereby said bolt is caused to project beyond said plate, an arm pivoted back of said plate, and provided with a slot adapted to receive the ends of all of said bolts when said rocking plate is in its lowest position, a segmental gear secured to or formed in one piece with said arm, a pinion engaging said segmental gear, a pawl carried by said pinion, an indicating wheel, and a single toothed ratchet concentric with and turning with said indicating wheel and engaged by said pawl, whereby the depression of any key will rotate said indicating wheel, as and for the purpose specified. 16th. The combination of the frame provided with windows, the rocking plate, a bolt sliding in said plate and having a projection extending back of said plate and having an incline, a numbered key adapted when depressed to strike said incline and to move said bolt endwise, and when further depressed to raise said rocking plate and bolt until said projection strikes a lever pivoted at one end to the frame, said lever, an indicating wheel normally arranged to display O indications at said windows, and a link pivoted at one end to said wheel outside the centre thereof, and at the other end to the free end of said lever to give a partial rotation to said wheel, and to expose indicating numbers corresponding with the numbers on said key, as and for the purpose specified. 17th. The combination of a series of keys, having a uniform range of motion and a common fulcrum, a rocking plate having the same fulcrum with said keys, and extending across all of said keys, a series of bolts sliding in said plate, parallel with the fulcrum of said plate, and normally drawn



into said plate, but each adapted to be projected beyond said plate by the depression of some one of said keys, an arm pivoted on a horizontal fulcrum back of all of said bolts, and provided with a slot arranged to receive the projecting ends of said bolts when said bolts are in their lowest position, and prevent the simultaneous depression of two keys, and a pawl or wing pivoted at its lower edge and extending back of all of said keys, and having a rib or projection which reaches over the free edge of said rocking plate, and prevents said plate from being rocked until said bolts are projected, said keys being provided with upward projections adapted to strike and turn said wing to release said rocking plate after said bolts have engaged said slot, as and for the purpose specified. 18th. The combination of a series of keys numbered with odd multiple of five, an equal series of keys numbered with 10, and multiples of ten or even multiples of five, the rocking plate extending over all said keys and having a common fulcrum with all of said keys, a series of bolts sliding in said plate, parallel with the fulcrum thereof, and lying at different distances from said fulcrum and equal in number to the keys of either of said series, each of said bolts being provided with two inclines, one arranged above a key designating a multiple of ten, and the other arranged above the key which designates the next greater odd multiple of five, a registering arm provided with a slot adapted to receive the ends of any of said bolts when said bolts are in their lowest position, whereby the complete depression of any one of said keys will project one of said bolts into said slot, and will thereafter raise said registering arm an angular distance, depending upon the distance of said bolt from the fulcrum of said rocking plate, indicating devices adapted to indicate 10 or a multiple thereof, and operated by the movement of said registering arm, and another bolt sliding in said plate and provided with a backward projection and with as many inclines as there are keys of said first named series, each of said inclines being arranged over one of said last named keys, whereby the depression of any of said first named series of keys will cause said last named bolt to be moved endwise, a lever turning at one end upon a fixed pivot, and a link connecting the other end of said lever to a units indicating wheel outside the centre of said wheel, said last named indicating wheel being normally arranged to display O indications, and by a partial rotation thereof on the depression of any key of said first named series to display a 5, whereby by depressing any of said first named series of keys the number designated by such key will be registered, the tens of said number by said first named indicating devices and the fives or units of said number by said units indicating wheel, as and for the purpose specified. 19th. The combination of a series of numbered keys, indicating wheels normally displaying O indications, connecting mechanism whereby said indicating wheels are partially rotated upon the depression of any key to display numbers corresponding to the numbers on said key, ratchets turning with said indicating wheels, a pawl lever having separate upper arms, a horizontal stud projecting from the lower arm of said pawl lever, retaining pawls pivoted on the upper arms of said pawl lever and engaging said ratchets to prevent said indicating wheels from returning to their O indicating positions, a vertical releasing rod free to turn about its axis, a releasing plate secured to said releasing rod and extending over the rear ends of all said keys, a lever or arm secured to said releasing rod, and a leaf spring secured to said lever or arm, and having a lateral ear adapted when said releasing plate is raised by any key to strike said stud and to swing said pawl levers and disengage said pawls from said ratchets, and for the purpose specified. 20th. The combination of a series of numbered keys, indicating wheels normally displaying O indications, connecting mechanism whereby said indicating wheels are partially rotated upon the depression of any key to display numbers corresponding to the numbers on said key, ratchets turning with said indicating wheels and having as many teeth as there are numbers to be displayed by said wheels, a pawl lever having separate upper arms, a horizontal stud projecting from the lower arm of said pawl lever, retaining pawls pivoted on the upper arms of said pawl lever and engaging said ratchets to prevent said indicating wheels from returning to their O indicating positions, a pivoted releasing rod free to turn about its axis, a releasing plate secured to said releasing rod, and extending over the rear ends of all said keys, a lever or arm secured to said releasing rod, a leaf spring secured to said lever or arm, and having a lateral ear adapted when said releasing plate is raised by any key to strike said stud, and to swing said pawl levers and disengage said pawl from said ratchets, and springs to return said indicating wheels to their O positions when said pawls are disengaged therefrom, said ratchets each being provided with a tooth longer than the other teeth, of said ratchet and said longer teeth being adapted to strike said pawls when said indicating wheels return to their O-indicating position, and to prevent said indicating wheels from passing by said last named positions in their return movements, as and for the purpose specified. 21st. The combination, of a series of numbered keys, indicating wheels normally displaying O indications, connecting mechanism whereby said indicating wheels are partially rotated upon the depression of any key to display numbers corresponding to the numbers on said key, ratchets turning with said indicating wheels, a pawl lever having separate upper arms, a horizontal stud projecting from the lower arm of said pawl lever, retaining pawls pivoted on the upper arms of said pawl lever, and engaging said ratchets to prevent said indicating wheels from returning to their O indicating positions, a pivoted releasing rod free to turn about its axis, a releasing plate secured to said

releasing rod, and extending over the rear ends of all of said keys, a lever or releasing arm secured to said releasing rod, a leaf spring secured to said releasing arm and having a lateral ear adapted when said releasing plate is raised by any key to strike said stud and to swing said pawl levers and disengage said pawls from said ratchets, springs to return said indicating wheels to their O indicating positions, said pawls having each a projection, and springs to engage said projections and to hold such pawls out of engagement with said ratchets, said ratchets each being provided with a tooth longer than the other teeth thereof to strike said pawls and to prevent said indicating wheels from passing their O indicating positions in their return movements, and to throw said pawls into engagement with said ratchets, as and for the purpose specified. 22nd. The combination, of an indicating wheel provided with a ratchet concentric therewith, and having a series of shorter teeth of uniform length, and a tooth longer than a tooth of said series, a pawl lever, a retaining pawl pivoted to said lever and adapted to engage said teeth and provided with a projection, and a spring to engage said projection when said pawl lever is thrown out of engagement with said shorter teeth to hold said pawl out of engagement with said ratchet until said pawl is struck by said longer tooth, as and for the purpose specified. 23rd. The combination, of an indicating wheel, a cam wheel secured thereto concentrically therewith, the registering lever arranged in the path of said registering lever when said registering lever is in its normal position, except when said indicating wheel is in its O indicating position, said unlocking lever being moved by said cam wheel when said indicating wheel returns to its last named position out of said path, as and for the purpose specified. 24th. The combination, of an indicating wheel, a cam wheel secured thereto concentrically therewith, the registering lever, the unlocking lever, and a spring holding said unlocking lever against said cam wheel and in the path of said registering lever when said registering lever is in its normal position, except when said indicating wheel is in its O indicating position, said unlocking wheel returns to its last named position out of said path, as and for the purpose specified. 25th. The combination of an indicating wheel, a cam wheel secured thereto concentrically therewith, the registering lever provided with a projection, an unlocking lever pivoted above said projection, and a spring holding the upper end of said unlocking lever against said cam wheel, the lower end of said unlocking lever being adapted to be held out of the path of said projection by said cam wheel when said indicating wheel is in its O indicating position, but at all other times when said registering lever is in its normal position to be drawn by said spring over said projection to prevent the rising of said registering lever, as and for the purpose specified. 26th. In a registering machine, the combination of a series of registering wheels, registering numbers in different decimal places, each independently of the other, adapted to register from 0 to 9, and connecting mechanism whereby a complete revolution of any wheel will cause the wheel, registering numbers of the next higher denomination to make one-tenth of a revolution, thereby adding one of the lower denomination to the total registration, and whereby the movement of any wheel due to the action of a wheel of the next lower denomination is delayed until its independent operation has been completed, as and for the purpose specified. 27th. The combination of the units registering wheel, a cam wheel rotating therewith, a cam lever having a projection to rest against said cam wheel, a pawl lever movable with said cam lever, a pawl pivoted thereto, a spring to hold said projection against said cam wheel, the tens registering wheel, a ten toothed ratchet rotating therewith and adapted to be engaged by said pawl and to be rotated thereby the distance measured by one tooth thereof when said cam lever is allowed by said cam wheel to move forward, a pawl carrying plate, a pawl pivoted thereon and engaging another ten toothed ratchet concentric with and rotating with said tens registering wheel, said pawl carrying plate having an annular flange provided with a slot and said cam lever having an arm which rests against said flange and prevents the forward movement of said cam lever until said slot is presented to said arms, and connecting means whereby said pawl carrying plate is rotated to operate said tens registering wheel and before another registration by said last named wheel presents said slot to said arm of said cam lever, as and for the purpose specified. 28th. The combination with an operating key rack when the key is partially operated and to be disengaged therefrom when the key has been fully operated, means, as a spring catch, for holding the pawl and rack out of engagement while the key is being reset, and means, as a rocking plate, for resetting the pawl. 29th. In a cash register and indicator, the combination, with a series of operating keys, each provided with a rack, of a wing or pawl extending across the entire series of keys and arranged to engage and act as a pawl for each of said racks to prevent any key of the series being reset when only partially operated and to be disengaged therefrom when the key has been fully operated and means for holding the pawl and rack out of engagement while the key is being reset, substantially as described. 30th. In a cash register and indicator, the combination, with a series of operating keys, each provided with a rack, of a wing or pawl extending across the entire series of keys and arranged to engage and act as a pawl for each one of said racks when its key is partially operated and to be disengaged from the rack of said key when

the latter has been fully operated, means for holding said pawl and rack out of engagement while the key is being reset, and means, as a rocking plate, to release the holding means, substantially as described. 31st. In a cash register and indicator, the combination with a series of operating keys of different valves, each provided with a rack, and a registering wheel actuated to different degrees by different keys to register their respective values, of a wing extending across the entire series of keys and arranged to engage and act as a pawl for each one of said racks when its key is partially operated to compel its full operation and the registration of its full value and to be disengaged from said rack when the key has been fully operated and means for holding the pawl or wing and rack out of engagement while the key is being reset, substantially as described. 32nd. In a cash register and indicator, the combination, with a series of operative keys, of a horizontal wing or bar extending across said keys and arranged to engage a partially operated key and prevent it being reset and to be disengaged therefrom when the key has been fully operated, means for holding said bar out of engagement with the key while the latter is being reset, and means, as a rocking plate, to release the holding means, substantially as described. 33rd. The combination of a series of keys, each provided with an arc-shaped rack, a pawl engaging the rack of any such key when said key is partially depressed to prevent the return of said key to its normal position, and a rocking plate operated by the depression of any such key and having a projection adapted to throw said pawl out of engagement with the rack of such key when said key is fully depressed to allow said key to return to its normal position, as and for the purpose specified.

**No. 42,343. Horse-shoe Bending Machine.**

(*Machine à plier les ébauches-des-fers à cheval.*)

John Wike and The Standard Horse-shoe Company, all of South Wareham, Massachusetts, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. In a horse-shoe bending machine, the combination therewith of depressible stops for holding the blank, a reciprocating yoke, swage blocks carried by said yoke and means for operating the same as described. 2nd. In a horse-shoe bending machine, the combination with depressible stops and means for automatically operating the same, of a reciprocating yoke, swage blocks carried thereby, and means for elevating said yoke during its reciprocation, as described. 3rd. The combination, with the table 5 supported by the legs 6, 6, the shaft 7 carrying the pulley 9, and gear 8 journaled in the frame formed thereby, the shaft 10 carrying the gear 12 intermeshing with the gear 8, and the crank 11, driving rods pivoted at the rear ends to said gear and crank, the cross arm 14 pivotally secured to the forward ends of said drive rods and movable in the guides 25 formed in the sides of the table frame, the wing 33 having the transverse rods 34 depending from said cross bar, the pivoted levers 36 having cam slots 35 engaging said rods 34, and pivoted to the vertically movable rods 38 carrying blocks 39 movable through perforations in the table, of the connecting rods 15 pivoted to the forward ends of the drive rods 13, the yoke 16, having the opening 20, secured to the forward end of said connecting rods, swage blocks carried by said yoke, depending slotted arms 17 formed in part with said yoke bearing discs 18 journaled in said slotted arms, and guide bars 19 on which said rolls are adapted to travel, as described. 4th. The combination, with the table 5, the cross bar 14 having the depending tongue 33 and rods 34 reciprocable in the guides 25 and means for reciprocating the same, the vertical studs 36 secured to said cross arm, and movable in slots cut through the table, the bent arms 28 pivoted to such studs and provided with rolls 29 and 29', journaled in the ends thereof, a spring 30 for contracting the rear end of said arms, adjustable forms 32 for separating said ends, and a die block 24 supported in the opening 23 in said table, of the pivoted levers 36 having cams 35 engaging the ends of the rods 34, the vertically movable rods 38, carrying blocks 39, extending through perforations in the table, pivoted to the forward end of said levers, a yoke 16 carrying the swage blocks 22, and having the arched opening 16, and depending slotted arms 17, carrying rotatable discs 18, the bent guide bars 19, secured to studs on the table frame on which said rolls travel, and the connecting rods 15 by which the reciprocation of the cross arm 14 is transmitted to said yoke, as and for the purpose described.

**No. 42,344. Apparatus for Drilling Wells.**

(*Appareil pour creuser les puits.*)

Amuel MacEachen and Thomas J. Foster, both of Scranton, Pennsylvania, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. In an apparatus for drilling wells and for like purposes, the combination with the main driving pulley and with the drill pulley of a non-positive cable belt connecting said pulleys, and other like purposes, the combination with the main driving pulley and the drill pulley of a non-positive cable belt connecting said pulleys, and an adjustable belt tightening pulley engaging one of the two oppositely moving portions of the cable belt to impart tension and draw said portion into the plane of revolution, substantially as described. 3rd. In an apparatus for drilling wells and other like purposes, the combination with a main driving pulley mounted upon suitable driving shaft, of a drill pulley mounted on the drill stem, or spindle, a non-positive cable belt con-

necting said pulleys, one of the two oppositely moving portions of said belt lying substantially in the plane of revolution of the driving pulley, said plane being tangent to one side of the drill pulley, and an adjustable belt tightening pulley engaging the other or second portion of said belt and drawing the same into, or nearly into, the said plane of revolution and toward the different plane of revolution of the drill pulley, substantially as described. 4th. In an apparatus for drilling wells and other like purposes, the combination with a drill pulley having a central opening for receiving and permitting the longitudinal movement of the non-circular drill stem, or spindle, of a bearing mounted on the supporting frame, to guide the drill stem and support the drill pulley, said bearing being separable to enable the drill and drill pulley to be released in pulling up the drill or raising the core, substantially as described. 5th. In an apparatus for drilling wells and like purposes, the combination with a drill stem, or spindle, and with a drill pulley having a prolonged hub adapted to receive and guide the longitudinally movable drill stem, of a two part bearing mounted upon the supporting frame and adapted to receive and support the drill pulley, which is removable therefrom to enable the drill to be pulled up, or to raise a core, substantially as described. 6th. In an apparatus for drilling wells and other like purposes, the combination with a drill stem, or spindle, of a drill pulley having a central opening in its hub to receive and guide the longitudinally movable drill stem, and a bearing composed of a rigid and a movable part, the former rigidly bolted to the supporting frame and the latter hinged to open and admit or release a prolonged hub on the drill pulley, substantially as described. 7th. In an apparatus for drilling wells and like purposes, the combination with a main driving pulley and a drill pulley having their axes at any angle to each other, of a non-positive cable belt connecting said pulleys, a belt tightening pulley engaging one portion of the said belt and drawing it practically into the plane of the other portion, a non-circular drill stem, or spindle, longitudinally movable in a central opening in the drill pulley, and a bearing for the latter having one part movable to receive and release a prolongation of the hub of the drill pulley, substantially as described.

**No. 42,345. Motor. (Moteur.)**

Joseph Silverwood, Huntsville, Ontario, Canada, 20th March, 1893; 6 years.

*Claim.*—The arrangement and disposition of the mechanical parts of the apparatus hereinbefore described, for producing motive power from the volatile products of the combustion of fuel, consisting of the fire box A, with door j, on the top opening inwards having a handle connected thereto on the outside of the fire box, a hinged grate in the bottom of the fire box, supported by the curved rod x, and a valve c, communicating with the pressure chamber, the ash box C, with door h, and clamp m, for securing the door, the valve e, (and regulator) communicating with the air chamber, the pressure chamber B, surrounding the fire box with valve d, (and regulator) communicating with the air chamber, the air chamber D, surrounding the upper part of the ash box with valve b, communicating with the air cylinder, the feed box E, with door k, and clamp l, for securing the door, the motion cylinders F, F, the shafts in segments, the motion valves f, f, the valve g, and levers p, for regulating admission of the volatile products of combustion to the motion cylinders, the air cylinder G, the shaft in segments, the air valve g, and the valve a, communicating with the air chamber, the shaft H, connecting the air cylinder with the motion cylinders, and the exit pipe t, and its connections with the feed box and safety valve, the whole combined, substantially as and for the purpose hereinbefore set forth.

**No. 42,346. Furnace Grate. (Grille de foyer.)**

William Samuel Dobbs, Vienna, Empire of Austria, 20th March, 1893; 6 years.

*Claim.*—A furnace grate, consisting of the fixed bars a, having spaces between them, in which spaces the bars b, of the movable grate can be moved to and fro for the purpose of removing ashes and clinkers and feeding forward the fuel, substantially as described.

**No. 42,347. Clothes Pins. (Épingle à linge.)**

John B. Lockwood, Helmville, Montana, U. S. A., 20th March, 1893; 6 years.

*Claim.*—As an article of manufacture, a clothes pin, the same consisting of two members pivotally connected, each section having one end shaped as a handle and the other as a clamping jaw, the jaws being curved in direction of each other, the said sections being also provided with opposing diagonally located recessed surfaces, whereby the jaws are brought face to face and their movement outward and inward limited, a cam surface produced upon the outer face of the handle portion of one section, this section being also provided with a shoulder at the base of the cam surface, and a latch pivoted to the handle portion of the opposite section, the latch comprising a block provided with a recess to receive the cam surface above mentioned, which latch is diagonally located across the section when in locking position and engaged with the said shoulder, substantially as and for the purpose set forth.

**No. 42,348. Car Coupler. (Attelage de chars.)**

Onslow Wynn, Village of Tweed, Ontario, Canada, 20th March, 1893; 6 years.

*Claim.*—1st. The link guide L, substantially as and for the purpose hereinbefore set forth. 2nd. The clamps D and D', in combination with the bell cranks F, F', and K, K', the draw pin G, spring I, pin J, and link guide L, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the spring I, pin J, and stop block H, substantially as and for the purpose hereinbefore set forth.

**No. 42,349. Thill Coupling. (Armon de limonière.)**

William Bruce Root, Springfield Centre, New York, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. A thill coupling comprising the thill iron A, having the arms 1, the inner end of the recess being concave and adapted to travel upon the edge of the shoulder 4, the shoulder 4 having a slotway, and the spring 7 engaging with the ends of the arms 1, as set forth. 2nd. A thill coupling comprising the thill iron A, having arms 1, the inner end of the recess being concave and adapted to travel upon the edge of the shoulder 4, the shoulder 4 having a diagonal slotway therein, the lug 6, and spring 7, as set forth.

**No. 42,350. Bottle. (Bouteille.)**

Alexander Levi Straus, Baltimore, Maryland, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. A bottle having the interior of its neck, near the mouth, other than circular in sectional outline, and its head constructed to receive and retain a cap or seal, substantially as described and for the purpose set forth. 2nd. A bottle having one or more projections or depressions in its throat, near the mouth, and its head constructed to receive and retain a cap or seal, substantially as described and for the purpose set forth. 3rd. A bottle having a lip and an annular groove on its head to receive and retain a cap, and projections or depressions in its throat, near the mouth, substantially as described and for the purpose set forth.

**No. 42,351. Printing Telegraph.**

(Télégraphe imprimant.)

David Homer Bates and Henry Van Hovenbergh, New York, State of New York, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. The combination, substantially as set forth, of two series of letters or characters carried by the same rotating type wheel shaft, and having corresponding letters or characters in two series arranged side by side, and impression devices for simultaneously taking an impression from both type wheels, whereby duplicates of the same message are simultaneously printed. 2nd. A paper ribbon for printing telegraph instruments provided with a longitudinal line of perforations or indentations, whereby it may readily be divided longitudinally into separate ribbons. 3rd. The combination, substantially as set forth, of two series of letters or characters rotating in fixed relation to each other, and having corresponding letters arranged side by side, a paper ribbon of sufficient width to receive impressions from both series of letters and provided with a longitudinal line of perforations or indentations to facilitate its longitudinal division into two ribbons, and impression devices for simultaneously printing on the ribbon from both series of letters, duplicates of a message on opposite sides of the line of perforations. 4th. A paper ribbon for printing telegraphs provided with a longitudinal line of perforations, or indentations, for the purpose described, and having duplicates of the same message printed thereon on opposite sides of the line of perforations.

**No. 42,352. Blower and Smoke Consumer.**

(Souffleur et fourneau fumivore.)

Martin Rose Ruble, Newark, New Jersey, U.S.A., 20th March, 1893; 6 years.

*Claim.*—The method of consuming smoke, consisting in drawing the smoke from the smoke stack, then in mixing said smoke with fresh air, and afterwards in forcing the said combined smoke and air into the furnace, substantially as described. 2nd. The method of consuming smoke, consisting in first mixing the smoke with fresh air, then in forcing said combined smoke and air into a reservoir and from there into the furnace, substantially as described. 3rd. In a smoke consuming apparatus, the combination with a blower, consisting of the spider *g*, side plates *h*, and partition plates *i*, arranged to form with the said side plates, a series of triangular shaped compartments, with the casing *a*, outlet *c*, and reservoir *w*, having overlapping partition plates 2, all said parts substantially as described and for the purposes set forth. 4th. In a smoke consuming apparatus, the combination of a suction wheel, composed of a series of triangular shaped chambers and its casing, said wheel and casing being open on one side about the centre of the wheel, with the outlet pipe *e*, leading from said casing, with the reservoir *w*, furnished with a series of overlapping partition plates 2, and connected by pipe or tube *v*, with the outlet *c*, and with the pipe *u*, leading from the smoke stack, of a furnace to the centre of the suction wheel, substantially as described.

**No. 42,353. Hydrocarbon Burner.**

(Foyer à hydrocarbures.)

Edwin G. Mummery, Detroit, Michigan, U.S.A., 20th March, 1893; 6 years.

*Claim.*—1st. In a hydrocarbon burner, a vapourizer, air mixers located adjacent thereto, air passages communicating through said mixers to supply air in proximity to the vapourizer, a supply pipe leading to the vapourizer, and a controlling valve in said pipe, substantially as described. 2nd. In a hydrocarbon burner, a vapourizer, air mixers located adjacent to said vapourizer, air passages communicating through said mixers, a valve controlled supply pipe leading to the vapourizer, the outer mixer provided with an enclosing rim and hood to direct air through the mixer, substantially as described. 3rd. In a hydrocarbon burner, a vapourizer constructed with an open channel to receive the fuel, a supply pipe communicating with said channel, air mixers located adjacent to said vapourizer and air passages communicating through said mixers, substantially as described. 4th. In a hydrocarbon burner, a vapourizer, a supply pipe, air mixers located adjacent thereto, air passages communicating through said mixers, and an enclosing case encircling said vapourizer and air mixers, substantially as described. 5th. In a hydrocarbon burner, a vapourizer, a supply pipe, air mixers located adjacent thereto, air passages communicating through said mixers, and an enclosing case encircling said vapourizer and air mixers, said case open at the top and base, and provided with an inwardly projecting flange, substantially as described. 6th. In a hydrocarbon burner, a vapourizer, a supply pipe leading thereto, an air mixer located adjacent thereto, and formed with an air mixer plate, an enclosing rim and hood forming an air passage between the rim and adjacent mixer plate, substantially as described. 7th. In a hydrocarbon burner, a vapourizer, a supply pipe leading thereto, air mixers located adjacent thereto, air passages communicating therethrough, and an interior air duct, substantially as described. 8th. In a hydrocarbon burner, a vapourizer, a supply pipe, air mixers located adjacent thereto, air passages communicating therethrough, and an interior air duct provided with a spreader at the top, said air duct spaced from the adjacent mixer, substantially as described. 9th. The combination with a combustion chamber, of a hydrocarbon burner, consisting of a vapourizer, a supply pipe, air mixers located adjacent to said vapourizer, air passages communicating through said mixers, and through the combustion chamber, substantially as described.

**No. 42,354. Window Sash. (Croisée de fenêtre.)**

Frederick de Jersey Clere, Kingston, New Zealand, 20th March, 1893; 6 years.

*Claim.*—1st. The combination of a window frame and sash, having hinged or movable parting and staff beads, with grooved recesses or recesses, with divided sliding blocks placed at or near the centre of the sash, substantially as and for the purposes herein described. 2nd. The combination of a window frame and sash, having hinged or movable parting and staff beads with grooved recess or recesses, with sliding block, and pivots placed at or near the centre of the sash, as and for the purposes hereinbefore described. 3rd. The combination of a window frame and sash having hinged or movable parting staff beads, with grooved recess or recesses with pivot such as *g*<sup>1</sup>, and wire *g*<sup>2</sup>, substantially as and for the purposes hereinbefore described.

**No. 42,355. Thimble for Pipes. (Dé de tuyau.)**

James Smith, assignee of Ruben Zimmerman Cassel, Columbus, Ohio, U.S.A., 21st March, 1893; 6 years.

*Claim.*—In combination, the main thimble A, comprising the cylindrical portion 1, the outwardly turned flange 2 at its outer end, and the inwardly turned flange 3 at its inner end, adapted to receive a stove pipe, the pins 4, on the interior of the cylindrical portion 1, and the reducing thimble B, having the disc or plate ring 5, constructed to fit within the cylindrical portion 1, and provided with notches 7, to receive pins 4, whereby the reducing thimble may be detachably secured to the main thimble, substantially as shown and described.

**No. 42,356. Fire Escape. (Sauveteur d'incendie.)**

Richard Howell and Annette C. Ball, both of Troy Hills, New Jersey, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a fire escape, the combination of a base, a drum mounted thereon, a ladder carried by the drum, a lug on the shaft of the drum, and a lever having means for engaging said lug on the shaft of the drum to control the rotation thereof, for the purpose described. 2nd. In a fire escape, the combination of a base, a drum carrying a ladder mounted thereon, a drum for guiding the ladder, a lug on the shaft of the drum, a toothed rod for engaging the lug, a friction lever brake engaging the drum carrying the ladder, and a cord connected to the lever brake, for the purpose described. 3rd. In a fire escape, the combination of a base, a drum mounted thereon, a ladder carried by the drum, a lever engaging the drum shaft, a lug on the shaft, a toothed rod for engaging the lug, a spring connected to said lever, a latch carried by the lever, and a cord for tripping the latch, for the purpose described. 4th. In a fire escape,

the combination of the base, the drum carrying the ladder, the lever bearing against the drum shaft, the spring connected to the lever, the latch, the cord for tripping the latch, the weight on the lever, the toothed rod connected to the weight, and the lug on the drum shaft engaging the toothed rod, all for the purpose described.

**No. 42,357. Grain Cleaner and Grader.**

(Appareil de nettoyage et gradation des grains.)

David J. Davidson, Brockway; Abraham S. Martin and Stephen G. Martin, both of Port Huron, all of Michigan, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a grain cleaning and grading machine, a cut off sieve provided with a fixed bottom therebelow, and a movable bottom between the sieve and the fixed bottom, substantially as described. 2nd. In a grain cleaning and grading machine, a cut off sieve provided with a supporting case, said case having a fixed bottom, and a movable bottom composed of a series of slides located between the fixed bottom and the sieve, the spaces between the two bottoms and between the movable bottom and sieve, having separate discharge openings, substantially as described. 3rd. In a grain cleaning and grading machine, the combination of a case constructed with an interior air chamber A<sup>5</sup>, a duct A<sup>1</sup>, opening into said chamber, a suction fan communicating with said chamber, and a cut off sieve discharging into said duct, substantially as described. 4th. In a grain cleaning and grading machine, the combination of a case constructed with an air chamber A<sup>5</sup>, a suction fan communicating with said chamber, a duct A<sup>1</sup>, communicating with said chamber, a cut off sieve discharging into said duct, said sieve vibrated by the fan shaft, substantially as described. 5th. In a grain cleaning and grading machine, a case A, constructed with an air chamber A<sup>5</sup>, a duct A<sup>1</sup>, having openings to the atmosphere and communicating with the said chamber, a suction fan to produce air suction through said duct and air chamber, a sieve discharging into said duct, a screen G, located in the air chamber and extended downward therein toward the base thereof, and a spout A<sup>6</sup>, provided with controlling valves located at the base of the air chamber, substantially as described. 6th. In a grain cleaner and grader, a case A, provided with an interior air chamber, a grain duct A<sup>1</sup>, opening into said chamber and to the atmosphere, a suction fan to produce air suction through said duct and chamber, said air chamber provided at its base with a discharge spout A<sup>6</sup>, and with a screen suspended above the base of said chamber to let the air pass thereunder, substantially as described. 7th. In a grain cleaner and grader, the combination of a case A, provided with an interior air chamber, a grain duct A<sup>1</sup>, communicating therewith, a suction fan to produce a suction blast through said duct and chamber, and means to regulate the suction blast, substantially as described. 8th. In a grain cleaning and grading machine, a case A, constructed with an air chamber A<sup>5</sup>, a grain duct communicating with said chamber, a suction fan to produce air suction through said duct and air chamber, and a cut off sieve constructed with a fixed bottom, and with a movable bottom located above the fixed bottom, the grain upon said movable bottom discharging into said duct A<sup>1</sup>, the impurities discharging from the sieve and from the fixed bottom, independent of the said duct, substantially as described.

**No. 42,358. Harvester. (Moissonneuse.)**

William McCloskey and Alem J. Green, Essex, Ontario, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In combination, with the driving wheel of a harvester, and the frame thereof, a shoe adapted to rest upon both sides of a furrow, and having an intermediate portion raised above the ends, and adapted to sustain the machine by rolling contact with an auxiliary wheel attached to the driving wheel, substantially as described. 2nd. In a harvester, the combination of the frame, double drive wheels journaled therein and firmly attached to each other, one of said wheels being of less diameter than the other, a shoe with two depressed ends and rising centrally and adapted to receive the tread of the smaller wheel, means for raising said shoe from the ground as the wheels progress, and means for returning said shoe to its original position preparatory to receiving the tread of the smaller wheel in its further operation, substantially as described. 3rd. In combination with the frame work and platform of a harvester, two carrying wheels, the journal of one situated forward of the journal of the other, an arm carrying the journals of said carrying wheels, and means for attaching said arm centrally to the frame work of the platform, substantially as described. 4th. In a harvester, the combination of a frame, a driving wheel consisting of two parts, one larger than the other, journaled at one end of said frame, a shoe adjustably connected therewith and adapted at each end to rest upon the ground and adapted centrally to receive the tread of the smaller of two wheels as the larger one leaves the ground, and means for operating the same, and two wheels located at the opposite end of said frame, one forward of the other, in such manner that as one fails of support upon the ground the other will receive the weight and support the same until the forward one is again brought to bear upon the ground, substantially as and for the purpose described.

**No. 42,359. Wire Attaching Device.**

(Appareil pour attacher le fil de fer.)

The firm of R. L. F. Strathy & Co., assignees of Charles Havelock Taylor, Montreal, Quebec, Canada, 21st March, 1893; 6 years.

*Claim.*—1st. In a wire attaching device, mechanism for holding a main strand of wire against lateral movement, and for holding in place, relatively to said main strand, the main portion of a secondary wire having a free end to be connected with or attached to such main strand, a rotatable coiler mounted on a stud axle and rotating eccentrically to the axis of said axle, and having a yielding pressure towards said holding mechanism, an open slot or groove extending laterally inward to the common axis of both eccentric and axle, and for the full combined longitudinal length of said axle and eccentric, and means for rotating said eccentric or bearing finger. 2nd. In a wire attaching device, a clip or holder adapted to receive a main strand of wire, a rotatable disc or gear wheel mounted on a stud axle, so as to leave one of its faces free end having yielding pressure towards said holder, an open slot or groove extending laterally inward to the common axis of said axle and disc or wheel to allow of the insertion of said main strand therein, said clip or holder comprising means for retaining said main strand within said axle, and means for holding in place the main portion of a transverse wire, the end of which is to be connected with the main strand, a projection from the free face of the rotatable disc, located eccentrically to its axis and adapted upon the rotation of said gear wheel to revolve about and coil the end of said transverse wire around said main strand with means for rotating said gear wheel, as set forth. 3rd. In a wire attaching device, the combination of a clip or holder adapted to be fitted on a main strand of wire, a pair of rotatable discs or gear wheels mounted on stud axles having yielding pressure towards said holder, and each gear having an open slot or groove extending laterally inward to the common axis of said axles and discs or wheels to allow of the insertion of said main strand of wire therein, a projection from each of the free faces of the gears located eccentrically of the axis of same and adapted upon the rotation of said gear wheels to revolve about and twist the ends of bores placed transversely to said main strand around same, with means for rotating said gear wheels, as set forth.

**No. 42,360. Dynamo Electric Machine.**

(Machine dynamo électrique.)

Robert Lundell and Edward H. Johnson, both of Brooklyn, New York, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. A dynamo electric machine having a disc armature and a single field magnet coil lying in a plane on one side of said armature and parallel thereto, in combination with radially disposed multipolar pole pieces between which the armature rotates, substantially as described. 2nd. A dynamo electric machine having a disc armature and a single field magnet core provided with radially disposed multipolar pole pieces magnetized by a single field magnet coil lying in a plane on one side of said armature and parallel thereto, substantially as described. 3rd. A dynamo electric machine having a single field magnet coil, a single field magnet core with radially disposed pole pieces and a disc armature, the field magnet coil being located on one side of the armature with its windings located in planes substantially at right angles to the armature shaft, substantially as described. 4th. A dynamo electric machine having a single cylindrical field magnet core with a single energizing field magnet coil, and a disc armature located between oppositely disposed multipolar pole pieces, the field magnet coil being located on one side of the armature, substantially as described. 5th. A cylindrical or disc-shaped field magnet core surrounding or enclosing a single energizing field magnet coil, and provided with radially disposed multipolar field magnet poles embracing an armature which rotates in a plane parallel with the inner end of the energizing coil, substantially as described. 6th. A hollow cylindrical or disc-shaped field magnet core enclosing an energizing field magnet coil and provided with multipolar field magnet poles of opposite polarity, and a rotary armature located between said poles, the armature and the field magnet coil being situated in independent parallel planes, substantially as described. 7th. A hollow ring-shaped magnet core enclosing an energizing field magnet coil, said field magnet core being provided with multipolar pole pieces of opposite polarity, both sets of pole pieces being located on the same side of the field magnet coil, substantially as shown and described. 8th. A hollow ring-shaped field magnet core enclosing its energizing field magnet coil and provided with multipolar pole pieces and ventilating holes, all of the pole pieces being located on one side of the field magnet coil, substantially as described and shown. 9th. A hollow ring shaped field magnet core made in three annular pieces, enclosing or surrounding a single energizing field magnet coil, and having multipolar pole pieces arranged in two integral sets, both located on the same side of the field magnet coil, substantially as shown. 10th. A hollow ring-shaped field magnet core having two integral sets of multipolar pole pieces energized by a single enclosed coil, both sets of pole pieces being located on the same side of the coil, substantially as shown. 11th. A disc armature made up of a series of flat bobbins, each provided with an independent adjustable clamping device, and all secured to a hub or collar, substantially as described. 12th. A disc armature made up of a series of bobbins which bear laterally

against each other, and each provided with adjustable means secured to a carrying collar or hub, whereby they may be securely held against centrifugal action, substantially as described. 13th. A disc armature made up of individual sectional bobbins, provided with clamps and means for securing them to a common collar or hub, as described. 14th. A disc armature made up of a series of flat elongated bobbins, connected at their inner ends by independent adjustable yokes and bolts to a hub or collar, in combination with a flat ring or disc which bears on said yokes, and is bolted to the hub or collar, substantially as described. 15th. An armature carried by a shaft provided with means for preventing end thrust, in combination with means for adjusting the armature in either direction on the shaft, and additional means for adjusting the armature on the shaft in the direction of its rotation, substantially as described. 16th. A disc armature carried by a shaft having means for preventing end thrust, in combination with means for moving the armature in either direction on the shaft, and additional means for adjusting the armature on the shaft in the direction of its rotation, substantially as described. 17th. A disc armature secured to a hub having longitudinal movement on a rotary shaft, in combination with means for moving the hub in either direction on the shaft, and additional means for adjusting the armature on the shaft in the direction of its rotation, substantially as described. 18th. An armature carried by a hub keyed to and having sliding motion on a rotary shaft, in combination with screw threaded adjusting connections for accurately adjusting the position of the armature in the direction of the length of the armature shaft and additional means for adjusting the position of the armature on the shaft in the direction of its rotation, substantially as described. 19th. A ring shaped field magnet core having multipolar field poles radially disposed, and a flat or disc armature adapted to rotate between said poles, and connected to a rotary shaft by adjusting devices whereby it may be maintained in the magnetic field out of mechanical contact with the field poles, substantially as described. 20th. A disc armature made up of sections or bobbins having side lugs connected together in series, by conducting strips in combination with clamps, and means for securing said parts all to a common collar or hub, substantially as described and shown. 21st. A dynamo electric machine having its field magnet core made of a hollow ring or disc-shape enclosing the field magnet coil, and provided with ventilating holes for admitting air to the interior of the machine, substantially as described. 22nd. A dynamo electric machine having its field magnet core made of ring or disc-like shape, with radially disposed multipolar pole pieces, between which the armature rotates in combination with a single magnetizing coil enclosed within the core, and ventilating holes for admitting air to the interior of the machine, substantially as described. 23rd. A dynamo electric machine having two hollow disc-shaped field magnet cores which wholly enclose or surround each, a single field magnet coil, said field magnet coils being located on opposite sides of the armature and in planes parallel therewith, substantially as described. 24th. A dynamo electric machine having two hollow disc-shaped field magnet cores, each having radially disposed multipolar pole pieces in combination with two enclosed field magnet coils located on opposite sides of a disc-shaped armature and in planes parallel therewith, substantially as described. 25th. A dynamo electric machine having two hollow cylindrical field magnet cores wholly enclosing two energizing field magnet coils, each core being provided with integral multipolar pole pieces, in combination with a disc-shaped armature adapted to rotate between said pole pieces, the field magnet coils being located on opposite sides of the armature in planes parallel therewith, substantially as described. 26th. A dynamo electric machine having hollow disc-shaped field magnet cores provided with integral multipolar pole pieces radially disposed in parallel planes between which the armature rotates, in combination with field magnet coils located on opposite sides of the armature, said coils being wholly enclosed, substantially as described. 27th. A dynamo electric machine having two flat cylindrical field magnet cores provided each with multipolar field magnet poles located in parallel planes with enclosed energizing coils for said cores, the windings of which are in planes parallel to the faces of the field magnet poles, and located on opposite sides of the armature, substantially as described. 28th. A dynamo electric machine, having two flat hollow cylindrical field magnet cores placed end to end, each core having a multipolar series of radially disposed poles located in parallel planes, in combination with a pair of wholly enclosed energizing coils and a rotary disc armature, substantially as described. 29th. A pair of field magnet cores having each a single enclosed energizing coil, and a set of radially disposed multipolar field magnet poles, in combination with a disc armature adapted to rotate between said set of poles, and provided with adjustable means for regulating its position in two directions, substantially as described.

#### No. 42,361. Electrical Transmission of Power.

(*Transmission électrique de la force.*)

Harry Ward, Leonard, New York, State of New York, U.S.A.,  
21st March, 1893; 6 years.

*Claim.*—1st. The method of operating and regulating an electric motor, consisting in maintaining the strength of its field magnet and the position of its commutator brushes constant and altering its speed by varying the electro-motive force supplied to its armature, substan-

tially as set forth. 2nd. The method of operating and regulating an electric motor, consisting in maintaining the strength of its field magnet constant and altering its speed by varying the electro-motive force of the supplying generator, substantially as set forth. 3rd. The method of operating and regulating an electric motor, consisting in maintaining the field magnet of the motor at a constant strength, varying the volts on the armature circuit to change the speed, and varying the amperes on the armature circuit to change the torque, substantially as set forth. 4th. The method of performing work by an electric motor, which consists in supplying thereto an electro-motive force varying approximately proportionally to the speed desired without materially varying the current, and a current approximately proportional to the torque desired without materially varying the electro-motive force, substantially as set forth. 5th. The method of performing work by the use of electric energy, which consists in varying the electro-motive force in proportion to the "foot" element of the foot pounds per second of the power required and varying the current in proportion to the "pounds" element, substantially as set forth. 6th. The method of performing work by an electric motor under conditions of varying speed, which consists in supplying thereto an electro-motive force approximately proportional to the speed desired, and a current approximately proportional to the torque desired, substantially as set forth. 7th. The method of performing work by the use of electric energy under conditions of varying speed, which consists in varying the electro-motive force in proportion to the foot element of the foot pounds per second of the power required, and varying the current in proportion to the pounds element, substantially as set forth. 8th. The combination of an electro-dynamic motor, a source of supply for its armature, a separate constant source of supply for its field magnet, and means for varying the potential of the armature supplying source, located at the point of work performed substantially as set forth. 9th. The combination of an electric motor, a generator for supplying its armature, a separate generator for exciting its field magnet, and a resistance in the field circuit of the armature supplying generator, located at the point of work performed, substantially as set forth. 10th. The combination of a working motor, a main source of supply, an intermediate motor connected with said main source, an intermediate generator driven by said intermediate motor and provided with means for varying its electro-motive force, a circuit extending from the said intermediate generator to the armature of the working motor, and a circuit independent thereof for energizing the field magnet of said working motor, substantially as set forth. 11th. The combination of the main source of supply, the intermediate motor having its field magnet and armature both connected therewith, the intermediate generator run by the said motor, and having its field magnet supplied by the said main source, and provided with means for varying its strength, and a working motor having its field magnet supplied from the said main source and its armature supplied from the said intermediate generator, substantially as set forth. 12th. The combination, with a wheeled vehicle, of an electric motor mounted thereon to propel the same, said motor having its armature and field magnet energized by separate circuits, and means on the vehicle for varying the electro-motive force of the energy supplied to the armature of said motor, substantially as set forth. 13th. The combination, with a vehicle, of a supplying line, a generator on the vehicle supplying the armature of said motor, and provided with means for varying its electro-motive force, the field magnet of said motor being separately excited, and another motor on the vehicle connected with the said supplying line and having its armature mechanically connected with the armature of the said generator, substantially as set forth. 14th. The combination of a vehicle, a supplying line, a propelling motor, an intermediate generator, and an intermediate motor on the vehicle, the armature and field magnet of the intermediate motor, the field magnet of the intermediate generator, and the field magnet of the propelling motor being all connected with the supplying line, the circuit of the field magnet of the said generator being provided with an adjustable resistance, substantially as set forth. 15th. The combination of a source of alternating current, an alternating current motor connected therewith, a continuous current generator run by said motor, and a working motor having its armature supplied by the said continuous current generator and its field supplied from a separate source, the said continuous current generator being provided with means for varying its potential, substantially as set forth. 16th. The combination of a source of alternating current, an alternating current motor connected therewith, a continuous current generator run by the said motor, a working motor having its armature supplied by the said generator, and an exciting machine for energizing the fields of the said continuous current generator and working motor, the field circuit of the said generator having an adjustable resistance, substantially as set forth. 17th. The combination of a source of alternating current of high tension, a tension reducing converter connected therewith, an alternating current motor in the secondary circuit of said converter, a continuous current generator operated by the said alternating current motor, and a working motor having its armature supplied by the said generator, and its field supplied by the said generator and its field supplied by a separate source, the electro-motive force of the said continuous current generator being variable, substantially as set forth. 18th. The combination, in an electric railway, of a source of alternating current of high tension, tension reducing converters connected at intervals with the high tension circuit, and having

their secondary coils connected with the working conductors of the railway, a car on said railway having upon it an alternating current motor connected with the said working conductors, a continuous current generator run by the said motor, and a propelling motor for the car, having its armature supplied by the said generator and its field energized from a separate source, the electro-motive force of the said continuous current generator being adjustable, substantially as set forth. 19th. The combination, in an electric railway, of a source of alternating currents of high tension, converters having their primary circuits connected at intervals with the high tension circuit and their secondary circuits connected with the working conductors of the railway, and the car on said railway having upon it an alternating current motor connected with the said working conductors, a continuous current generator run by the said motor, a propelling motor for the car, having its armature supplied by the said generator, and an exciting dynamo also run by the said alternating current motor, and with which the field magnets of the motors and generator of the car are connected in multiple arc, the field circuit of the said generator being provided with means for varying its strength, substantially as set forth. 20th. The combination, in an electric railway, of a source of alternating current of high tension, converters having their primary circuits connected at intervals with the high tension circuit and their secondary circuits connected with the working conductors of the railway, a car on said railway having upon it an alternating current motor connected with the said working conductors, a continuous current generator run by the said motor, a propelling motor for the car, having its armature supplied by the said generator, an exciting dynamo also run by the said alternating current motor, a storage battery, and switches whereby the fields of the motors and generator on the car may be connected with the exciting dynamo and the storage battery alternately, substantially as set forth. 21st. The combination of a source of alternating current, an alternating current motor connected therewith, a continuous current generator operated by said motor, and having its field magnet separately excited, and a translating device supplied by said generator, substantially as set forth. 22nd. The combination of a source of alternating current of high tension, a tension reducing converter having its primary circuit connected with said source, an alternating current motor supplied by the secondary circuit of said converter, a continuous current generator operated by said motor and having its field magnet separately excited, and a translating device supplied by said generator, substantially as set forth. 23rd. The combination of a source of alternating current of high tension, a tension reducing converter having its primary circuit connected with said source, an alternating current motor supplied by the secondary circuit of said converter, a continuous current generator operated by said motor, and a working motor having its armature supplied by said generator and its field magnet separately excited, substantially as set forth. 24th. The combination of a source of alternating current of high tension, means for converting such current into a continuous current of lower tension, and a motor having its armature supplied by such continuous current and its field magnet separately excited, substantially as set forth. 25th. The method of keeping fixed the neutral point in the armature of an electric motor performing variable work, which consists in keeping the strength of the field of such motor constant and varying the electro-motive force supplied to the motor armature to vary the speed, substantially as set forth. 26th. The method of transforming the energy of a prime motor at any speed into propelling energy at any desired speed, which consists in operating an electrical generator by said prime motor, supplying the armature of an electric motor running in a constant field from said generator, and varying the electro-motive force of said generator to vary the speed of said electric motor, substantially as set forth. 27th. The method herein described of regulating and reversing the motion of an electric motor which consists in regulating the electro-motive force of the generator supplying the armature of said motor to vary the speed and reversing the electro-motive force of such generator to reverse the motor. 28th. The combination of an electro-dynamic motor and a dynamo electric generator having their armatures electrically connected together and both having separately excited field magnets, means for varying the strength of the field magnet of the generator, and means for reversing the field magnet of the generator, substantially as set forth. 29th. The method of reversing the motion of an electric motor, consisting in reversing the field magnet of the generator supplying the armature of said motor, substantially as set forth. 30th. The method of reversing the direction of rotation of an electric motor, which consists in gradually reducing the electro-motive force of the generator supplying the motor to a minimum, then reversing the electro-motive force of the generator, and then gradually increasing it, substantially as set forth. 31st. The combination, of an elevator car, an electric motor connected with said car to move the same, a dynamo electric generator supplying the armature of said motor, the field of said motor being separately energized, an adjustable resistance on the elevator car in the field circuit of said generator, and means for reversing the said generator, substantially as set forth. 32nd. The combination, of an elevator car, an electric motor connected with said car to move the same, a dynamo electric generator supplying the armature of said motor, the field of said motor being separately energized, and the field circuit of said generator being led to the elevator car and containing thereat an adjustable resistance and a circuit reverser, substantially as set forth. 33rd.

The combination, with a three wire circuit, of a working motor, a generator supplying the armature of said motor, an electric motor running said generator, said last named motor being supplied from the said three wire circuit, a branch from the three wire circuit including the field magnet of the working motor, and a controlling switch consisting of two adjustable resistances, and an arm movable from one to the other, said arm being connected with the neutral wire of the three wire system, and the said resistances being connected respectively with the positive and negative wires thereof, substantially as set forth.

**No. 42,362. Wrench. (Clé à écrou.)**

Theodore Fletcher, Macdonia, Texas, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a wrench, the combination, with the lower jaw having a threaded handle attached thereto, and a sleeve held to travel upon the threaded portion of the handle, of an upper jaw, the shank attached to the upper jaw having sliding and guided movement in the lower one, a lever connected with the sleeve, and a link connection between the lever and the shank of the upper jaw, substantially as shown and described. 2nd. In a wrench, the combination, with a lower jaw, a threaded handle attached thereto, a sleeve held to travel upon the threaded surface of the handle, and a collar loosely mounted upon the sleeve, of an upper jaw, a shank projected downward from the upper jaw, and having sliding and guided movement in the lower jaw, a cutter removably located in the lower jaw, a lever pivotally attached to the collar upon the handle sleeve, and a link connection between the handle and the shank of the upper jaw, as and for the purpose specified. 3rd. In a wrench, the combination, with a lower jaw having a slot at one end to receive a cutter, and provided with a pipe receiving surface at its opposite end, a threaded handle secured to the lower jaw beneath the recess receiving the cutter, a sleeve held to travel upon the screw surface of the handle, and a collar loosely mounted upon the sleeve, of an upper jaw extending over the slotted surface of the lower jaw and likewise the pipe receiving surface of the said lower jaw, the upper jaw having a corresponding pipe receiving surface, a shank projecting downward from the central portion of the upper jaw, and having guided movement in the lower jaw, and extending below said jaw, a lever adapted also to serve as a handle pivotally secured to the collar of the said sleeve, and a link connection between the lever and the shank of the upper jaw, as and for the purpose set forth.

**No. 42,363. Brush. (Brosse.)**

Christian Smith, Detroit, Michigan, U.S.A., 21st March 1893; 6 years.

*Claim.*—1st. The combination with the body A, having the bevelled ends B, the groove C, extending from the top at one end to the top of the other, the bristles D and the securing wires E, substantially as described. 2nd. In a brush, the combination with a back A having the bevelled ends B, the groove C extending from the top at one end to top at the other, the brush D, the end portions G and the securing wire E, all combined, substantially as and for the purpose described.

**No. 42,364. Interlocking Apparatus for Railway Signalling. (Appareil de raccordement pour signaux de chemins de fer.)**

Samuel Telford Dutton, Marl Bank, Worcester, England, 21st March, 1893; 6 years.

*Claim.*—1st. In interlocking apparatus for railway point and signal levers the use of a cross bar *f* fulcrumed to the lever, one end connected to the extension of the catch rod and the other to the links *h* connected to a pin moving in the slot *j* the link *k* being connected to the said pin and the tappet itself connected to the said link, the whole operating substantially as described and illustrated for the purposes herein set forth. 2nd. In interlocking apparatus for railway point and signal levers, the provision of a projection beyond the fulcrum, provided with a slot through which the locking tappets are operated in the movement of the lever, substantially as described and illustrated and for the purposes herein set forth. 3rd. In railway signalling, the combination of apparatus for the purposes of interlocking levers, substantially as described and illustrated and for the purposes herein set forth.

**No. 42,365. Cash Register and Indicator.**

(Registre et indicateur de monnaie.)

Boston Cash Register Company, assignee of Edward Newton Foote and John James Range, all of Northampton, Massachusetts, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a cash register, in combination, register operating key levers and devices for preventing retrograde movements thereof while same are in their working movements, a part movable in unison with the key levers, which is provided with a stud extended angularly to the plane of swinging movement of the pawl and its carrier, a ratchet bag arranged with its teeth in proximity to the course of the pawl, and a guard plate having a bearing surface arranged in proximity to the course of movement of the pawl stud, said bearing surface terminating near the upper and lower ends of the course of said stud and so located with relation thereto that the

stud going will bear on the side of the guard plate furthest from the teeth of the ratchet bar, and returning will have passed to the other side of the guard plate, whereby the pawl will be permitted to engage the teeth of the ratchet bar, substantially as and for the purpose set forth. 2nd. In a cash register, in combination, register operating key levers, the rocking plate, having an arm  $F$ , the ratchet bar  $G^2$ , and the guard plate  $r$ , with the opening  $o^2$ , and the pawl mounted on the said arm and having the stud  $u^2$ , all substantially as and for the purpose set forth. 3rd. A cash register having two or more banks of keys and indicating tags respectively therefor, having support stops, support bars having supporting portions for the engagement with the indicator stops, and the several bars having sliding engagements one relative to the other, whereby the sliding movement of a bar one of the higher banks will draw the bars for the other banks, but whereby the sliding movement of the bar of a lower bank may be independent of the bar of the next higher bank, and means for effecting on the depression of the key of any bank a sliding movement of the highest support bar and a special medium of connection between the keys of each of the banks below the highest bank and the support bar therefor for effecting on the working of a lower bank key the sliding movement of the support bar for such bank, substantially as and for the purpose set forth. 4th. A cash register having two or more banks of keys and indicating tags respectively therefor, having support stops, support bars having portions for supporting engagement with the indicator stops, and the several bars having sliding engagements one relative to the other, whereby the sliding movement of a bar for one of the higher banks, will draw the bars for the other banks, but whereby the sliding movement of the bar of a lower bank may be independent of the bar of the next bank, and means for effecting on the depression of the key of any bank, a sliding movement of the highest support bar, and special mediums of connection between the keys of the highest bank and its support bar, and between the keys of the lower banks and their support bars for effecting the sliding movements of the bars, respectively of such banks, substantially as and for the purpose set forth. 5th. In a cash indicating machine, in combination, two or more sets of movable indicators, support bars arranged for supporting engagement respectively with the said sets of indicators, and having sliding engagements with each other, whereby one may move out of the indicator supporting position and draw the one next thereto, but whereby the latter on moving out of its indicator supporting position will be without effect on the first named bar, substantially as described. 6th. In a cash registering and indicating machine, in combination, two or more banks of keys and sets of movable indicators therefor, and support bars respectively for the said indicators, having sliding engagements the one relative to the other, whereby the sliding movement of a bar for a higher bank will draw the bar of the lower bank, but whereby the sliding movement of the bar of a lower bank may be independent of the bar of the higher bank, means for moving the support bar for one of said banks on the operation of any key of either bank, a separate lever connected to the support bar for each bank, and an actuating cam for each of said levers, and each cam adapted to be moved by the operation of any key of one of the said banks, substantially as described. 7th. In a cash registering and indicating machine, the combination, with two or more banks of keys and indicators respectively therefor, of separate support bars for engagement with the indicator stops of the several banks, having sliding engagements the one with the other, substantially as described, the rock bar common to and having an engagement, substantially as described, with the key levers of all of the banks, and a medium of connection between the said rock bar and the support bar of one of the banks of keys, the separate rocker plates for the several banks of key levers, levers pivotally mounted and connected respectively with the support bars, and other levers having cams thereon to exert forcing actions on said first named levers, and connected for their swinging movements to said rocker plates, substantially as described. 8th. The combination, in a cash registering and indicating machine, having two or more banks of key levers with sets of indicators respectively therefor, and support bars for the indicators, having engagements the one relative to the other, whereby the sliding movements of higher bank bars will draw lower bank bars, but whereby the movement of the lower bank bars may be independent of the higher bank bars or levers  $m$ , intermediately pivotally supported, each having an abutment portion thereon, pivoted levers  $b, b$ , intermediately pivoted to have their extremities swing in proximity to said abutment portion and each having the oblique cam  $g^2$ , thereon and said levers mounted for a slight movement laterally of their planes of swinging movement, and mediums of connection between said levers and the keys of the different banks, substantially as and for the purpose described.

**No. 42,366. Cash Register. (Registre à monnaie.)**

Boston Cash Register Company, assignee of John James Range, both of Northampton, Massachusetts, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a cash register, the combination with one or more operating key levers, of a key lever engaging member mounted to normally engage the levers and movable to disengage, a device for temporarily holding the locking member in its disengaging position,

and means actuated by either of the key levers on a registering movement thereof to terminate the engagement between said temporary holding device and said locking member, for the purpose set forth. 2nd. In a cash register, the combination with the series of key levers, of the movable locking bar, the lever 44, intermediately pivoted, and a medium of connection between said lever and the locking bar, a pawl or trigger for engaging said lever, and a dog movable in conjunction with the operation of the key levers to release said pawl, substantially as and for the purposes set forth. 3rd. In a cash register, the combination with a series of key levers, of the common tilting plate, the swinging dog carrier linked to said plate, and the spring pressed dog, the pivoted lever 44, the pawl 52, for engaging said lever and having its nose in proximity to the course of movement of said dog, a medium of connection between the said lever and said locking bar, and the push rod 45, all arranged for operation, substantially as described. 4th. In a cash registering machine, the combination, with a cash drawer and a locking device therefor, of a series of key levers having an operative connection with the register and a blank key lever, which, together with the locking device, and a handle bar mounted for a sliding movement forward and back on a stationary support which is adjacent the blank key lever, and said handle bar having thereon a pivoted pawl located in a plane coincident with the course of movement of the blank key lever, which is held normally forwardly spring pressed and which has an upward and rearward inclination, substantially as and for the purposes set forth. 5th. In a cash registering machine, the combination with a key lever and a cash drawer, of a catch for holding the drawer closed, and a medium of connection between the key lever and the drawer catch, arranged and adapted to permit of the maintenance of the locked relations of the catch and drawer on the working movement of the key lever and to be operated for the release of the drawer only on a return movement of the key lever, for the purpose set forth. 6th. In a cash registering machine, the combination, with one or more key levers and a movable cash drawer having two catch abutments, of a catch adapted to engage each of said abutments, and mechanism of connection between each of said catches and the key levers, whereby one of the catches will disengage its abutment on the working movement of a key lever and the other catch will disengage its abutment on the return movement of the key lever, substantially as described. 7th. In a cash registering machine, the combination, with the key lever and the rocking bar  $B$ , movable therewith and having the arm 85, of the cash drawer having the catch abutment 83, and the catch abutment 84, the bolt 86, having the stud 87, projected to be engaged by said arm 85, the intermediately pivoted catch lever 88, and a connection between one arm thereof and said arm 85, and the spring for forwardly forcing the drawer, all substantially as described.

**No. 42,367. Convertible Seat for Vehicles.**

(*Siège brisé pour voitures.*)

Charles H. Stratton, Buffalo, New York, U.S.A., 21st March, 1893; 6 years.

*Claim.*—1st. In a vehicle, the front seat  $C$ , provided with the stationary pillars  $b, b$  and stationary lazy back rest  $b^1$ , and a movable lazy back  $c$ , hinged to the seat at  $d, d$ , adapted to let down, forming a dos, a dos seat, and held by arms  $e, e$ , all substantially as specified. 2nd. In combination with the front seat  $C$ , having a dos, a dos seat  $c$ , the side irons  $h, h$ , hinged to the under front edge of the seat  $C$ , and pivoted at their lower ends to the posts  $j, j$ , the intermediately operating, substantially as and for the purpose specified. 3rd. In combination with a jump seat  $D$ , provided with its pivoted jump  $D$ , and having the side connecting rods  $p, p$ , pivoted to the panel  $F$ , and to the front jump irons, relatively arranged, so as to be carried forward or back by the moving of the seat, all substantially as specified.

**No. 42,368. Machine for Making Felt.**

(*Machine pour faire les étoffes.*)

Pierre Lagrand, Paris, France, 21st March, 1893; 18 years.

*Claim.*—1st. A new machine for the manufacture of felts in general, and more particularly unwoven stiff felts, consisting of the combination with a lower receptacle, containing water at a high temperature to produce steam or a hot bath, of a system of grates on which the double endless cloths rest which are supported by rollers drawing them along and arranged for this purpose and formed of a metal cloth combined with a linen cloth between which the material to be treated is carried along, this whole being completed by an arrangement of rollers, mounted on carriages and which can receive a forward and backward movement and bearing on the endless cloth in a manner to give the material to be treated a forward and backward motion, at the same time keeping it pressed between the surfaces of the endless cloths, the whole machine being capable of being enveloped in a coat for the purpose of avoiding all loss of heat or steam, substantially as described and shown in the accompanying drawing.

**No. 42,369. Brake Applying Apparatus.***(Appareil pour l'application des freins.)*

Robert J. Spearling, Sherbrooke, Quebec, Canada, 21st March, 1893; 6 years.

*Claim.*—1st. The combination, with a car truck or locomotive, of a series of shoes 6, in the path of wheels, said shoes having auxiliary shoes 11, as set forth. 2nd. The combination, with the air brake system of pipes for branch pipes 14, having a fragile arm or termination 16, which will be broken by derailment of the car, as and for the purpose set forth. 3rd. The combination, with a railway car or truck of shoes 6, secured to the underside of the equalizing bar or other part of the truck in the path of the wheels, auxiliary shoes 11, extending inwardly from said shoes, and secured to a cross beam or other support, said shoes 6 and 11, having downward flanges 10 and 13 respectively, and a fragile arm 16, connected by a pipe 14, to the air brake system of a train, whereby the fragile arm will be fractured when the shoe is brought into action by the breaking of a wheel and apply the brakes, and said shoe will support the truck after said arm has been broken, and the shoes 11, prevent ditching when the truck is derailed, as set forth. 4th. The combination with a car truck, of shoes 6, secured to the truck in the path of the wheels, and auxiliary shoes 11, extending inwardly from said shoes 6, said shoes 6 and 11, having downwardly turned flanges 10 and 13, respectively, as and for the purpose set forth.

**No. 42,370. Tubular Pneumatic Action for Organs.***(Action tubulaire pneumatique pour orgues.)*

The Tarrant &amp; Votey Organ Company, Detroit, Michigan, U.S.A., assignee of Robert Hunter, Clapham, England, 22nd March, 1893; 6 years.

*Claim.*—1st. In an organ, the combination, of a key, a swell chamber divided into compartments, one for each reed, an air chamber with a valve or pallet therein operated by said key, two or more coupling tubes leading from said pallet to different compartments of the swell chamber and adapted to admit air by the depression of one key to two or more compartments of said swell chamber, substantially as and for the purpose described. 2nd. In an organ, the combination, of a swell chamber having dividing diaphragms, secured within grooves in the front and back wall of said chamber, and two or more coupling tubes leading into a single compartment of said swell chamber, and operated by different keys, substantially as and for the purpose described. 3rd. In an organ, the combination, of a swell chamber divided into compartments, a sound chamber provided with valves adapted to be operated by the keys, coupling tubes leading from a single valve in the sound chamber, and sliding valves adapted to govern the passage of air through said coupling tubes, substantially as and for the purpose described.

**No. 42,371. Seeding Machine. (Semoir.)**

Peter Hamilton Manufacturing Company, assignee of Andrew Johnson, both of Peterboro, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. In a cultivator, the combination, with the draw head pivoted as specified and having a locking device located and operating therein, of slots situated in the end of the drag bar, as and for the purpose specified. 2nd. In a cultivator, the combination, with the draw bar securely held to a rod in front of the machine, of the bell crank F, pivoted in the drag bar, held securely in position by the lever G, and its connections, and connected to the draw head E, at *e*, as and for the purpose specified. 3rd. The combination, with the drag bars, of the bell crank pivoted therein and held securely in position by the lever G, and its connections, the bar H, connected to the front end of the draw head and having holes *d*, at its front end through which the bolt *d*<sup>1</sup> passes, as and for the purposes specified. 4th. The combination, with the bell crank F, and bar H, held securely in position as specified, and the draw head E, pivoted at *e*, on the rear end of the bar H, of a lock comprised of the curved arm L, and arm I, trunnion I<sup>1</sup>, all journalled on the pin *i*, the other end of the curved arm L, being pivotally connected at *l*, to the face plate K, which has a trunnion J, formed on it and a coil spring M, wound around the trunnion J, one end of which spring is secured in the end of the arm I, and the other in the face plate K, the trunnion J, and face plate K, being supported on the spindle *j*, which is journalled in the draw head E, and extends into the slots *b*, in the drag bar A, as and for the purpose specified.

**No. 42,372. Saddle for Velocipedes.***(Selle de velocipède.)*

Charles F. Lavender and Thomas Fane, both of Toronto, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. A saddle for velocipedes, comprising a seat bracket supporting the rear end of the seat, a curved supporting bar secured to the bracket, means at the front end of the said curved bar, to which are attached the front of the seat, the saddle spring, means for securing the saddle spring at or near the middle of the curved supporting bar, and means for securing the supporting pillar, substantially as and for the purpose described. 2nd. In a saddle for velocipedes, a clip comprising a frame, an enlarged slot in said frame, a removable block located in said slot, the under side of said

block curved to correspond to the curvature of the saddle pillar, the upper side of said block shaped to receive the under side of the saddle spring and the under side of the top of the frame of the clip shaped to fit the upper end of the saddle spring, substantially as and for the purpose specified. 3rd. In a saddle for velocipedes, the combination of a seat, a curved bracket supporting the rear end of the seat, a supporting bar secured to the bracket, the front end of the supporting bar formed to receive the front end of the seat, two lugs secured to the supporting bar at or near its middle and arranged one at either side thereof, the saddle spring, a stem which is located within said lugs, and a coiled loop encompassed by a clip securing it to the saddle pillar, substantially as and for the purpose specified.

**No. 42,373. Bicycle. (Bicycle.)**

Charles T. Howell, Canton, Ohio, U.S.A., and William C. Ashdown, Toronto, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. An upwardly projecting lever formed upon or connected to a bar journalled on the end of the ordinary treadle crank, and extending back through a bearing connected to the axle of the rear wheel of the bicycle, substantially as and for the purpose specified. 2nd. An upwardly projecting lever formed upon or connected to a bar journalled on the end of the ordinary treadle lever, and extending back through a bearing connected to the axle of the rear wheel of the bicycle, in combination with a treadle adjustably connected upon the upwardly projecting lever, substantially as and for the purpose specified. 3rd. The lever B, formed upon the bar C, a pin D, projecting from the treadle crank E, a series of balls *b*, fitted into recesses *a*, in the bar C, and forming a ball bearing on the pin D, in combination with the bar C, extending through the bracket M, between the flanges roller L, and spring N, substantially as and for the purpose specified.

**No. 42,374. Horse-shoe. (Fer à cheval.)**

Owen McQuillen and William Alexander Verner, both of Toronto, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. As a new article of manufacture, a horse-shoe blank having calks fitted into dovetailed recesses formed in the said blank, each calk being detachably held in position by suitable means, substantially as and for the purpose specified. 2nd. As a new article of manufacture, a horse-shoe blank having calks fitted into dovetailed recesses formed in the said blank, each calk being held in position by a block fitted into the recess and held by a removable pin, substantially as and for the purposes specified.

**No. 42,375. Machine for Cutting Off Fish Heads.***(Appareil pour couper les têtes de poisson.)*

Thomas James Cosens, New Westminster, British Columbia, Canada, 22nd March, 1893; 6 years.

*Claim.*—The combination of the knife A, slotted guide bar B, and double joint C, with the chain E, and double action treadle F, substantially as and for the purpose herein set forth.

**No. 42,376. Journal Bearing. (Coussinet de tourillon.)**

Marion Adelbert Andrews, Syracuse, New York, U. S. A., 22nd March, 1893; 6 years.

*Claim.*—1st. A sectional journal casing, having an endless grooved trackway in its inner wall, scarfed on its edges, a central ring having a central grooved trackway in its periphery, scarfed on its edges, and rollers fitting into both of said grooved trackways, and mounted between annular rings upon and held apart by separate arbours, supported by the annular rings, and travelling in the trackways aforesaid, in combination with an axle grooved to receive the inner wall of the ring, and fitting loosely through said ring. 2nd. A sectional journal bearing, having an endless grooved trackway in its inner wall, scarfed on its edges, a central ring having an endless grooved trackway in its periphery, scarfed on its edges, and rollers fitting into both of said grooved trackways, and mounted between annular rings, and held apart by separate arbours supported by the annular rings, and travelling in the trackways, and further provided with an endless, inwardly projecting trackway upon its inner wall fitting into a groove in the axle, in combination with an axle grooved to receive the trackway upon the inner wall of the ring, and fitting loosely through said ring.

**No. 42,377. Post Hole Digger. (Tarière à trou de pieu.)**

Robert Budd, Bowmanville, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. An improved post hole digger, consisting of a hollow cylinder made the diameter of the post hole desired, and having a cutting edge in combination with a weight or ram designed to force the said cylinder into the ground, substantially as and for the purpose specified. 2nd. An improved post hole digger, consisting of a hollow cylinder with a cutting edge, and arranged in connection with a weight or ram, in combination with an adjustable push plate designed to discharge the earth raised by the cylinder, substantially as and for the purpose specified. 3rd. A weight or ram B, carried in a vertical frame A, and suspended by the gripping tongs E, in combination with a cylinder C, divided by the partition V, in combination with a push plate U, operated by the lever T, substantially as and for the purpose specified. 4th. A weight or ram B, carried



in a vertical frame A, and suspended by the gripping tongs E, in combination with a cylinder C, divided by the partition V, in combination with a push plate U, operated by the lever T, to discharge the contents of the cylinder on to the movable tray S, substantially as and for the purpose specified.

**No. 42,378. Auto-Calorific Branding Tool.**

(*Fer à marquer auto-calorifique.*)

James Simcoe Fitzmaurice, Sidney, New South Wales, Australia, 22nd March, 1893; 6 years.

*Claim.*—1st. An improved auto-calorific branding tool consisting essentially of the combination and arrangement in one instrument with a symbol or mark or brand capable of being heated by a lamp or burner whose flame or jet will impinge upon said symbol or mark or brand substantially as herein described and explained. 2nd. An improved auto-calorific branding tool consisting of the combination and arrangement in one instrument with a mark or brand capable of being heated and a lamp or burner whose flame or jet will impinge upon said mark or brand of a reservoir or container for gas or for fluid or material easily gasified by heat, substantially as herein described and explained. 3rd. An improved auto-calorific branding tool consisting of an annular vessel or reservoir whose central tube carries on one end a brand or mark and in it a pipe or jet in communication with said reservoir and of means for regulating the admission of air to said central tube substantially as herein described and explained. 4th. An improved auto-calorific branding tool consisting of the combination and arrangement together of mechanical parts substantially as herein described and explained and as illustrated in the drawing.

**No. 42,379. Fence Making Machine.**

(*Machine à clôture.*)

John E. Hoag, Springport, Michigan, U.S.A., 22nd March, 1893; 6 years

*Claim.*—1st. In a fence machine, the combination of a bar B, mounted on a suitable frame and provided with twisters C, said twisters having apertures  $e$ , and  $e^2$ , the aperture  $e$ , being of greater diameter than the aperture  $e^2$ , the latter being bevelled on its inner side toward the center of the twister, substantially as shown, and for the purpose set forth. 2nd. The combination, in a fence machine, of the supporting bar B, having apertures for the reception of twisters or sprocket wheels C, C, which are operatively connected to each other, said twisters having apertures  $e$ ,  $e^1$ ,  $e^1$ , and  $e^2$ , through the hubs thereof, and plates  $f$ ,  $f$ , connected by bolts to the twisters on the opposite side of the bar from the sprocket wheels, so as to retain the twisters in the apertures in the bar, substantially as shown, and for the purpose set forth. 3rd. The combination, in a fence machine, of a bar B, mounted on a suitable frame and provided with twisters C, the hub of which is provided with an aperture  $e$ , and apertures  $e^1$ ,  $e^1$ , and  $e^2$ , with bevelled portions inclining toward the center of the twister, a toothed flange providing a sprocket wheel on the opposite side of the hub from the bevelled portion of the apertures, and plates  $f$ ,  $f$ , and bolts  $f^1$ , for retaining the twister on the bar B, substantially as shown, and for the purpose set forth. 4th. In a tension device for use in building fences, a pivoted lever having projecting lugs, one of said lugs having a recess in its upper face, while the other is recessed in its lower face, a depending portion formed on said lever having ratchet teeth, a pawl adapted to engage with said ratchet teeth, and a guide pin  $l^1$ , located beyond and slightly below the pivot of the lever, substantially as shown, and for the purpose set forth.

**No. 42,380. Mixer for Mortar.**

(*Appareil pour corroyer le mortier.*)

George Paine Brown, Aylmer, Ontario, Canada, 22nd March, 1893; 6 years.

*Claim.*—1st. In the mixer, the knife E, the mould boards K and L, as shown and described for the purpose set forth. 2nd. The knife E, provided with fingers T, as shown and described for the purpose set forth. 3rd. The combination of the husk A, knives E, mould boards K and L, and fingers F, as shown and described for the purpose set forth.

**No. 42,381. Lubricator and Alarm.**

(*Graisneur et alarme.*)

Alphonse Edouard Tavernier and Charles Madison Martin, both of London, England, 22nd March, 1893; 6 years.

*Claim.*—1st. The combination with a bearing, and a revolving shaft, of mechanism such as that herein described, whereby on the bearing becoming overheated it is automatically lubricated and an alarm is given, substantially as herein described. 2nd. The combination with a bearing, and a shaft of a thermometer, and electromagnet and armature, the said armature being connected to the cock of a lubricating vessel and adapted to be placed in the line of revolution of a cam on the shaft, by the closing of an electric circuit on the bearing becoming overheated, the closing of the circuit also

operating an alarm or an indicator, the whole being arranged and operating, substantially as hereinbefore described and illustrated in the accompanying drawings.

**No. 42,382. Sewing Machine. (Machine à coudre.)**

Jacob Boppel, Newark, New Jersey, U.S.A., 22nd March, 1893; 6 years.

*Claim.*—1st. The combination in a sewing machine, with a bed plate, of a reciprocating needle and means for operating the same, a spool spindle fixed to the bed plate, a spirally grooved sleeve arranged on said spindle, a looper arranged in connection with the said sleeve, a lever  $j$ , engaging said sleeve and communicating power thereto whereby said sleeve is caused to oscillate on its axis, and a connecting rod  $j^2$ , connecting said lever  $j$ , to the lever  $g$ , within the machine arm, said lever  $g$ , and means for operating the same, substantially as and for the purpose set forth. 2nd. The combination in a sewing machine, with a bed plate, of a reciprocating needle and means for operating the same, a spool spindle and a spirally grooved sleeve arranged thereon, means for oscillating said spirally grooved sleeve, a looping disc  $q$ , rigidly fastened to said sleeve, a connecting bar  $q^1$ , and a hooked ring  $q^2$ , all said parts being arranged and adapted to operate, substantially as set forth. 3rd. In a sewing machine, the combination with the needle and looping ring, of a fixed spool spindle, a spirally grooved sleeve thereon, a lever  $j$ , connecting rods  $g$ , and  $j^2$ , and means for operating the same, a link  $j^1$ , and a movable fulcrum, all arranged and operating, substantially as set forth. 4th. In a sewing machine, the combination with the needle and looping ring, a throw off lever fulcrumed adjacent to said looping ring, and a spool reciprocator having a prolonged fork  $m^1$  adapted to engage said lever, substantially as and for the purposes set forth. 5th. In combination with the spool spindle or shaft  $o$  the looper and spool reciprocator, a pivoted spool carrier or shaft  $p$ , having a pin  $p^1$  and a finger piece  $p^2$  independent of said pin, substantially as set forth. 6th. In a sewing machine, the combination with a spool spindle and a looper, a spirally grooved sleeve fixed to said looper and oscillating on said spindle, and a horizontal forked lever provided with pins which enter the grooves of said sleeve, and means for oscillating said lever, substantially as set forth. 7th. In a sewing machine, the combination with the needle and means for operating the same, a spirally formed device having a looper fixed thereon and a lever engaging the said spirally formed device and oscillating the same, and means for operating said lever, substantially as set forth. 8th. In a sewing machine, the combination of a looper and means for operating the same, a spool reciprocator having an elongated prong,  $m^1$ , and means for operating the same, a throw off lever arranged upon a suitable fixture adjacent to said looper and elongated prong and adapted to be engaged by the latter to throw the thread from said looper, a reciprocating needle and means for working the same, substantially as set forth. 9th. In a sewing machine the combination of a looper and means for operating the same, a needle and means for operating it, a spool reciprocator having a prolonged or elongated prong or fork  $m^1$ , a bracket  $n$ , a throw off lever fulcrumed thereon and adapted to be engaged by the elongated prong, and a spring  $r$ , adapted to press the said lever back into normal position, substantially as set forth. 10th. In combination, in a sewing machine, the needle and means for operating the same, a lever and means for operating the same, a spirally formed device oscillated by said lever, a disc,  $q$ , bar,  $q^1$ , and looping ring,  $q^2$ , all arranged and adapted to operate substantially as and for the purposes set forth. 11th. In a sewing machine, a looper fixed to a spirally formed sleeve and a reciprocating lever, for oscillating said sleeve and means for oscillating the lever, substantially as set forth. 12th. In a sewing machine, the tension device combining with the split rods or shafts,  $o$ ,  $p$ , a spool holder having the slide,  $i^2$ , and pivoted parts  $h^6$ ,  $h^7$ , one of which is provided with an eye  $h^{10}$ , substantially as set forth. 13th. In combination with a shaft, a spool holding tension device, the said device consisting of parts  $h^6$ ,  $h^7$ , pivoted at  $h^9$ , one of which parts is provided with a thread perforation  $h^{10}$ , substantially as set forth. 14th. In a sewing machine, the tension device consisting of discs  $h^3$ , centrally perforated and provided with a central slide, and each provided with arms  $h^8$ , pivotally riveted together, substantially as and for the purposes set forth. 15th. In a sewing machine, the combination with the bed plate and fixed spool spindle  $r$ , an oscillating looper and a spool reciprocator, of a spool shaft or carrier  $p$ , pivoted on suitable bearings of said bed plate, bent or turned at 3, 3, and having a portion thereof held in alignment with the said fixed spool spindle and means for holding said portion of said pivoted carrier in said alignment, substantially as and for the purposes set forth. 16th. In a sewing machine, the combination with the bed plate, a reciprocating needle and means for operating the same, an oscillating looping ring catch or hook adapted to catch the needle thread and force the same upon the peripheral face of said ring, means for operating said ring, a fixed spool spindle,  $o$ , and a shaft or carrier  $p$ , in line with but separate from said spindle, a lever  $h^1$ , provided with forks or arms to engage the opposite ends of the spool, and means for operating said lever, a lever  $u$  adapted to be engaged by said lever  $h^1$  and be operated to force the needle thread from the looping ring, and a spring connected with the bed plate and said lever  $u$ , substantially as and for the purposes set forth.

**No. 42,383. Oyster Cooker.***(Appareil pour cuire les huîtres.)*

Albert J. Doty, New York, State of New York, U.S.A., 22nd March, 1893; 6 years.

*Claim.*—1st. The improved cooking device consisting of the stand having the journal bearings, the cranked trunnions mounted thereon, the stew pan mounted on the said trunnions, and the gas burner under the stew pan, substantially as described. 2nd. The improved cooking device consisting of the stand having the journal bearings, the cranked pivoted trunnions mounted thereon, the stew pan mounted on the trunnions, and the burner under the stew pan, said pan constructed with a depressed recess or pocket in the bottom of the concave upper portion, substantially as described. 3rd. The combination with a pivoted dumping stew pan, of a closed jacket charged with a heat equalizing liquid and retaining said liquid when dumped. 4th. The combination in an oyster cooker of the pivoted dumping stew pan, the closed jacket charged with a heat equalizing liquid, and the gas burner for heating the jacketed pan, said jacket retaining the heat equalizing liquid when dumped. 5th. The combination of the pivoted dumping stew pan, the gas burning heater for the pan, and the stop cock of the burner supply pipe coupled with the trunnion of the stew pan and automatically operated thereby to control the fire. 6th. The combination of the pivoted dumping stew pan, the gas burning heater for the pan, the auxiliary lighting jet, and the three way stop cock, of the burner supply pipe coupled with the trunnion of the stew pan and automatically operative thereby to shut off the heating burner and let on the lighting jet, and *vice versa*, as the stew pan is dumped and replaced.

**No. 42,384. Time Stamp. (Timbre horaire.)**

Frederick H. Symonds, New York, State of New York, and Abram B. Garner, Newark, New Jersey, both in the U.S.A., 22nd March, 1893; 6 years.

*Claim.*—1st. In a time stamp, the combination with the rotating type discs, of the spring power driver connected therewith for moving the said discs, stop and releasing mechanism connected with said spring power driver and controlling the movements of the same periodically and a clock connected with and controlling the movements of the stop and releasing mechanism, said spring power driver and clock being independent power mechanism, substantially as described. 2nd. The combination, in a time stamp, of the spring stamp disc driver, the periodically releasing and stopping device for said driver, consisting of the vibratory tube and stop catches, and the clock and gravity ball device controlling said releasing and stopping device, substantially as described. 3rd. The combination, in a time stamp, of the spring power stamp disc driver, and the periodically releasing and stopping device, consisting of the vibratory tube connected with the said driving power, so as to be vibrated thereby, the spring catches for engaging the ends of said tube alternately, the gravitating ball for detaching said catches, the said retaining and tripping device for the ball, and the clock controlling the retaining and tripping device, substantially as described. 4th. The combination, in a time stamp, of the spring power stamp disc driver, the periodically releasing and stopping device, consisting of the vibratory tube connected with said driving power so as to be vibrated thereby, the spring catches for engaging the ends of said tube alternately, the gravitating ball for detaching said catches, the duplex crown wheel escapement of the clock train, and the stop finger entering the slot of the tube and having an arm subject to the control of the crown wheel, substantially as described. 5th. The combination, in a time stamp, of the spring power stamp disc driver, the vibratory tube connected with the spring power, so as to be vibrated thereby, the crown wheel escapement connected with the clock, the gravitating ball in the tube, and the retaining finger and releasing arm thereof in the arrangement of the vibrating tube on the side of the spring power frame, and the escapement on the side of the clock frame and intermediate of the two frames, substantially as described. 6th. In a time stamp, the combination of the intermittently operating clock power stamp disc driver, having the usual time hand shafts, the stop and releasing mechanism controlling the movements of said driver, the clock controlling said stop and releasing mechanism, the time indicating hands connected with the dial, said spring power driver and clock being independent power mechanism suitably arranged therewith, substantially as described. 7th. The combination, with the primary type disc, in a time stamp and the actuating pawl therefor, of the intermittently moving spring power driver, the cam disc in said driver having a cam projection effecting one throw off the pawl lever to each movement of the spring power, and the vibratory stopping and releasing tube and spring catches, said tube connected with said spring power and having intermittent motion synchronously with the cam disc, substantially as described. 8th. In a time stamp, having the minute shaft side by side with the minute disc in the middle position, the combination with said hour and meridian discs, of a pawl lever having a separate pawl for each of said discs, said meridian disc having its type characters repeated correspondingly with the characters of the hour disc, substantially as described.

**No. 42,385. Vacuum Core for Electrical Heating Devices. (Centre de vacuum pour appareil de chauffage électrique.)**

The Butterfield Mitchell Electric Heating Company, Boston, Massachusetts, assignee of Henry R. Butterfield, Waterville, Maine, both in the U.S.A., 22nd March, 1893; 6 years.

*Claim.*—1st. In an electric heater, a hollow core enclosing a vacuum and a resistance which forms part of an electric circuit, the said core being provided at one end with a partition cutting off a space J, a screw plug closing at will, air outlets in the said partition and the end wall of said core, or the latter only, a water outlet cock from said space and a steam inlet into the body of the core, substantially as set forth. 2nd. In combination with the shell of an electric heater, a hollow case enclosing a resistance which forms part of a circuit and having journals on its ends, and a removable tray or plate provided with bearing standards which support said journals, allowing said core to turn axially, the said core being provided with a separated space at one end and with a steam inlet, air outlet, water outlet and a plug for closing the air inlet and the opening through the partition, all substantially as set forth. 3rd. A hollow core, enclosing a vacuum and an electrical resistance and provided with journals, in combination with a removable tray having bearing standards raised thereon, in which said journals are supported, allowing said core to turn on its axis, substantially as set forth.

**No. 42,386. Lubricator. (Graisseur.)**

James D. Fitzgerald and William E. Dortch, both of Selma, Alabama, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. The combination of an oil tank, means for exerting a pressure upon the oil therein, an oil supply pipe leading from the oil tank, oil cups connected to bearings, branch pipes connecting the inlet ends of the oil cups to the main supply pipe, and means in each of the cups for discharging oil upon the bearings, said means being operated by the pressure exerted upon the oil in the tank, substantially as and for the purpose described. 2nd. The combination of an oil tank, means for exerting a pressure upon the oil in said tank, an oil supply pipe leading from the tank, an oil supply pipe leading from the tank, oil cups connected to the supply pipes and bearings, said cups each consisting of two communicating cylinders, a piston working in each cylinder and normally closing the inlet ends of the same, an oil passage leading around the upper piston and a discharge passage communicating with the lower cylinder at a point below the upper side of the lower piston, as and for the purpose described. 3rd. In an oil cup, the combination of two cylinders connected to each other, connected pistons working in these cylinders, means for normally pressing the pistons toward the inlet ends of their cylinders, an oil passage *f*, leading around the upper piston, and a discharge passage *e*<sup>11</sup>, communicating with the lower cylinder at a point below its upper side, substantially as and for the purpose set forth. 4th. The combination, in an oil cup, of two communicating cylinders connected together, a piston working in each of these cylinders and normally closing the inlet ends of the same, an oil passage leading around the upper piston, a discharge passage communicating with the lower cylinder at a point below the upper side of the lower cylinder, and means for depressing the pistons whereby oil may be forcibly discharged upon the bearing to which the cups are attached, substantially as and for the purpose described.

**No. 42,387. Carving Machine. (Outil de sculpteur.)**

William Charles Layer, Milwaukee, Edward Ulysses Taylor, Fond du Lac, and James Sawyer, Milwaukee, all in the State of Wisconsin, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. In a carving machine, the combination, with two horizontally swinging arms, one arm pivoted to the outer extremity of the other arm, of a counter poised sash moving vertically in ways therefor in the outer extremity of the outer arm, a cutting tool supported on the sash in a frame having two pivotal motions one at right angles to the other, substantially as described. 2nd. In a carving machine, sets of horizontally swinging arms, other sets of horizontally swinging arms pivoted to the outer ends of the first set of arms, sashes moving vertically in the outer ends of the outer arms in ways therein, a connecting rod uniting the vertically moving sashes, in the respective arms, whereby the sashes are moved vertically coincidentally and independently of any movement of the swinging arms combined, substantially as described. 3rd. In a carving machine, a yoke journaled in the sash, a spindle frame pivoted on the yoke at right angles to its axis, a driving pulley journaled in the yoke, the axis of which pulley is in the axis of the spindle frame, a spindle having its bearings in the spindle frame, and a friction gear on the spindle bearing against the pulley in the yoke, all combined substantially as described. 4th. In a carving machine, the combination, in the tool carrying and operating mechanism, of a swinging yoke, a spindle frame pivoted on the yoke at right angles to the axis of the yoke, a pulley journaled in the yoke, the axis of which pulley is in the axis of the spindle frame, a tool carrying spindle in the spindle frame, and a wheel or gear fixed on the spindle, which wheel is in frictional contact with the pulley in the yoke, in such manner that its contact is constant and equal in all movements of the spindle, substantially as described. 5th. In a carving machine, the combination of a swinging arm D, a thereto pivoted swinging arm

E, a therein supported movable sash, a therein journaled yoke, a spindle frame journaled therein at right angles to the yoke, the spindle being in radial plane of the axis of the yoke, a pulley in the yoke, the axis of which is in the axis of the spindle frame, a spindle having its bearings in the frame, and provided with a gear bearing against the pulley in the yoke, and a belt running on the pulley in the yoke, substantially as described.

**No. 42,388. Motor for Driving Pumps.**

(*Moteur pour pompes.*)

The Henderson Maddock Motor Company, Goldendale, assignee of Charles C. Henderson, Centralia, both in Washington, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. In a motor, the combination, with a drum and a rope wound thereon and having a weight at its free end, of a bell crank lever mounted upon a support, a train of gearing between the bell crank lever and drum, a pitman connecting one arm of the bell crank lever to the train of gearing, a walking beam operated from the bell crank lever, and a latch for locking the walking beam, substantially as described. 2nd. In a mechanical motor, the combination, with a base, bracket stands thereon, a drum and a master wheel on a shaft journaled transversely of the bracket stands, a rope carrying a weight, a sheave on a derrick supporting a part of the rope and weight pendant, a second shaft having a pinion engaging the master wheel, and a loose gear wheel securable on the second shaft, of a reducing gear train rotatable on the bracket stands, a rocking bell crank having a loose connection with a crank disc on the reducing gearing, a walking beam connected by a link with the bell crank's horizontal limb, a pendulum, and means to arrest the movement of said walking beam, substantially as described.

**No. 42,389. Car Coupler.** (*Attelage de chars.*)

John Brown, James Burns, Alexander Stewart and William Patrick Keirnan, all of Toronto, Ontario, Canada, 23rd March, 1893; 6 years.

*Claim.*—1st. In a car coupler the draw bar C, provided with the sliding blocks *v v*<sup>11</sup>, separated by the springs *x*, in combination with the frame B, having the draw plates 15 on which said blocks slide, the projections 16 limiting the movement in one direction thereof. 2nd. In a car coupler the draw bar C, chambered at *g*, with a latch *j*, pivoted in said chamber and the push spring *r* on said bar engaging said latch, substantially as described. 3rd. In a car coupler, the combination of the chambered draw bar provided with the spring pushed pivoted latch, the lever 26 on an end of the car and projecting beyond one side thereof, and a chain connecting the inner end of the lever with the latch. 4th. In a car coupler, the combination of the chambered draw bar provided with the spring pushed pivoted latch, a lever pivoted on the car body, and a connection between one arm of said lever and the latch. 5th. In a car coupler, the combination of the chambered draw bar and spring pushed latch with the lever 20, and 2f, pivoted respectively on the top and end of the car and having their corresponding ends connected with the latch whereby it may be operated to uncouple the car either from the top or ground.

**No. 42,390. Welt Sewing Machine.**

(*Machine à coudre les bordures.*)

William Young Ober, Lynn, Massachusetts, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. In a welt sewing machine, a stationary head having pivoted to its upper end, a needle carrier, presser foot and cast off, and an awl carrier mounted upon a feed rocker arm combined with a series of cams on the driving shaft and connections for imparting motion from said cams to the individual members of the stitch forming and feed mechanism, substantially as described. 2nd. In a welt sewing machine, a stationary head having secured to it a grooved welt guide or work support and having pivoted to its upper end, a needle carrier passer foot and cast off, and an awl carrier rocker arm for feeding the work, combined with a series of cams on the driving shaft and connections for imparting motion from said cams to the individual members of the stitch forming and feed mechanism, substantially as described. 3rd. In a welt sewing machine, a rocking needle carrier, presser foot and cast off and a rocking and laterally movable awl combined with a series of cams on the driving shaft and connections for imparting motion from said cams to the individual members of the stitch forming and feed mechanism, substantially as described. 4th. In a welt sewing machine, a rocking needle carrier and needle attached to it, and a rotary driving shaft having an eccentric secured to it, and a strap surrounding said eccentric and pivoted in its upper end to the needle carrier, substantially as and for the purpose set forth. 5th. In a welt sewing machine, a rocking awl carrier and awl attached to it, said awl carrier being hung on a rocking feed arm, combined with a rotary driving shaft, and intermediate connecting mechanism, substantially as described for operating the awl carrier and rocking feed arm in a manner as specified. 6th. In a welt sewing machine, a duplex cam on the driving shaft, and a thread guide carrying bar actuated by said cam and adapted to slide and rock in a pivoted guide and a spring for holding it in operative contact with the duplex cam, substantially as set forth.

**No. 42,391. Tobacco Pipe.** (*Pipe.*)

Francis Elder, Chicago, Illinois, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. A tobacco smoking pipe having its main or body portion provided with two vertically arranged nicotine chambers 8, 11, with a small vertically arranged tube or pipe 12, connecting the same and having its upper end extended above the bottom of the upper one of said chambers and with a smoke passage 14 communicating with the extreme upper portion of the lower one of said chambers and having a downwardly curved inner end, substantially as described. 2nd. A tobacco smoking pipe having its main or body portion formed of three separate removable and replaceable parts or sections 1, 2, 3 and provided with two vertically arranged and centrally communicating nicotine chambers 8, 11, with a small vertically arranged tube or pipe 12, connecting the same and with a single smoke passage 14, communicating with the extreme upper portion of the lower one of said chambers, substantially as described. 3rd. A tobacco smoking pipe having its main or body portion formed of three separate, removable and replaceable parts or sections 1, 2, 3, and provided with two vertically arranged and centrally communicating nicotine chambers 8, 11, with a small vertically arranged tube or pipe 12, connecting the same and with a single smoke passage 14, communicating with the extreme upper portion of the lower one of said chambers and having a downwardly curved inner end, substantially as described. 4th. A tobacco smoking pipe having its main or body portion formed of three separate, removable and replaceable parts or sections 1, 2, 3, and provided with two vertically arranged and centrally communicating nicotine chambers 8, 11, the middle section of the said pipe being formed integrally with the stem thereof and provided with a single smoke passage 14, having a downwardly curved inner end communicating with the extreme upper portion of the lower one of said chamber, substantially as described.

**No. 42,392. Method of Affixing Manufactured Asbestos.** (*Méthode d'appliquer l'asbeste.*)

Frederick W. Jaqui, jr., Chicago, Illinois, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. The method herein described of applying manufactured asbestos for insulating purposes, the same consisting in saturating the asbestos in water, or its equivalent, and while wet pressing it upon the surface covered thereby so as to cause it to lie closely and evenly upon the same, substantially as described. 2nd. The method of covering metallic or other surfaces with asbestos paper, cloth, or the like, which consists in thoroughly moistening the asbestos with a liquid which has no adhesive ingredients, and then spreading the paper or cloth on the surface to be covered and finally pressing it closely and evenly upon the same, substantially as described. 3rd. The combination with a metallic or other base, substantially as herein described, of asbestos, as set forth. 4th. The combination of a metallic or other base, substantially as herein shown and described, of manufactured asbestos, the asbestos being in direct contact with and adhering to the base, substantially as described.

**No. 42,393. Artificial Fuel.** (*Combustible artificiel.*)

Max Nirdlinger, Milwaukee, Wisconsin, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—The herein described fuel composition, it comprising eighteen hundred pounds of anthracite coal culm, one hundred pounds of bituminous coal culm, ninety pounds of pitch, and ten pounds of the companion tar of said pitch, mixed at the temperatures and under the conditions set forth, as described.

**No. 42,394. Electric Fire Alarm.**

(*Avertisseur électrique d'incendie.*)

Harvey Cortland, Toronto, Ontario, Canada, 23rd March, 1893; 6 years.

*Claim.*—1st. In combination with the double acting thermostat, the main and branch circuits controlled thereby, the relays in said circuits, the local circuits controlled by the relays and containing alarm instruments, and a switch mechanism controlled by one local circuit, and acting to open the same and to close the other. 2nd. In combination with the double acting thermostat, the main and branch circuits, their relays, the local circuits controlled by the relays, and containing alarm instruments, and the mechanical alarm switch mechanism or instrument L, adapted to open one local circuit and close the other, and also adapted and arranged to transmit a signal to a central office instrument, and a magnet to control the instrument L, located in the local circuit. 3rd. The improved thermostat, consisting of the frame, the convex expandable disc, the conducting fingers *a*<sup>1</sup>, and *a*<sup>2</sup>, and the intermediate conducting finger *a*<sup>3</sup>, operated by the disc. 4th. In an alarm mechanism, the combination of a double acting thermostat, and two circuits controlled by the thermostat, and each controlling an independent alarm. 5th. In combination with a thermostat, and two circuits controlled thereby, the mechanical switch instrument L, consisting in the spring actuated clock train and its eccentric, the lever moved by the eccentric and connected to the switch proper, and the controlling

magnet. 6th. The combined switch and signal instrument, consisting of the spring actuated clock train, the signal wheel and finger, the eccentric, the lever actuated thereby, the witch proper connected with the lever, the detent, and the magnet controlling the detent.

**No. 42,395. Machine for Beveling Plate Glass.**

(*Machine à chanfreiner le verre.*)

Edwin Hill, Toronto, Ontario, Canada, 23rd March, 1893; 6 years.

*Claim.*—1st. The herein described method of beveling plate glass, consisting in supporting the plates of glass obliquely so that the corners of their upper edges are in alignment in a frame caused to have a circular horizontal movement and providing grinding, smoothing or polishing wheels, which are rotated on their own axis and also derive a circular horizontal movement in the same direction as the glass holding frame and following the movement thereof, as and for the purpose specified. 2nd. In a machine for beveling plate glass, the combination with the frame C, supported on the carriage A, and deriving a circular horizontal movement as specified, of the polishing wheels driven and designed to act upon the corners of the upper edges of the plates in the frame C, as and for the purpose specified. 3rd. In a machine for beveling plate glass, the combination with the frame C, supported on the cranks *d*, and deriving a circular horizontal movement from the crank *g*, located on the end of the shaft *t*, which is driven as specified, of the wheels 20, driven and designed to act upon the upper corners of the edges of the plates in the frame, as and for the purpose specified. 4th. The combination with the frame C, supported on the cranks D, on the carriage, driven by the crank *j*, on the vertical shaft, which is rotated upon the main shaft 23, by the bevel gears M, N, and 26, and 25, of the wheels 20, means for rotating them on their axis and giving them a circular horizontal movement against a plurality of plates of glass in the frame C, as and for the purpose specified. 5th. The combination of the frame C, supported and deriving a circular horizontal movement, as specified, of the wheels 20, means for rotating them on their axis, and the cranks 22, rotated from the main driving shaft 23, whereby a circular horizontal movement is imparted to the frame 21, and wheels 20, as and for the purpose specified. 6th. The combination of the frame C supported and deriving a circular horizontal movement, as specified, of the wheels 20 and the cranks 22 rotated from the main driving shaft 23, whereby a circular horizontal movement is imparted to the frame 21 and wheels 20, which wheels are also rotated on their own axis through the gear pinions 33, internal gear wheels 30, and crank pins 32, secured in the cross bar 28, as and for the purpose specified. 7th. The combination with the frame C, supported and deriving a circular horizontal movement, as specified, of the wheels 20, rotated, deriving a circular horizontal movement and limited in their downward movement, as specified, and having their arbors 34, provided with collars 35, by means of which the wheels may be raised from their work by the bridge piece 37, adjusted vertically on the screw spindle 38, by the hand wheel 39, as and for the purpose specified. 8th. The combination with the frame C, supported by the cranks D, upon the carriage, and deriving a circular horizontal movement from the shaft O, journaled in the plates H, by the crank *g*, and gear wheels M and N, of the cap H<sup>1</sup>, supported on the plates above the gearing, as and for the purpose specified. 9th. The combination, with the frame C, supported by the cranks D, upon the carriage, and deriving a circular horizontal movement from the shaft O, journaled in the plates H, by the crank *g*, and gear wheels M and N, of the forked lever R, pivoted on the standard S, and having the pins *r*, in the fork projecting into the annular groove *n*, in the hub of the gear wheel N, as and for the purpose specified. 10th. The combination, with the frame C, of the side bars 16, extending into the holes 11, in the end plates 2, and into notches 14, in the cross bars 12, as and for the purpose specified. 11th. The combination, with the frame C, provided with a permanent bottom C<sup>1</sup>, and an obliquely placed end plate 2, of the false bottom C<sup>11</sup>, tapered from the bottom to the end next the end plate 2, and fitting in grooves *c*, in the sides C<sup>11</sup>, as and for the purpose specified. 12th. The combination, with the frame C, provided with a permanent bottom C<sup>1</sup>, and an obliquely placed end plate hinged at 3, in the sides C<sup>11</sup>, of the adjusting block placed beneath the lower end of the end plate 2, as and for the purpose specified. 13th. The combination, with the frame C, provided with a permanent bottom C<sup>1</sup>, and an obliquely placed end plate 2, of the sides C<sup>11</sup>, pivoted on the trunnions 17, as and for the purpose specified. 14th. The combination, with the frame C, provided with a permanent bottom C<sup>1</sup>, and an obliquely placed end plate 2, and the sides C<sup>11</sup>, pivoted on the trunnions 17, of the pivotal arms 5, supporting and securely holding in position the upper ends of the sides C<sup>11</sup>, by the bolts 8, as and for the purpose specified. 15th. The combination, with the frame C, provided with a permanent bottom C<sup>1</sup>, and an obliquely placed end plate 2, and the sides C<sup>11</sup>, pivoted on the trunnions 17, of the pivotal arms 5, supporting and securely holding in position the upper ends of the sides C<sup>11</sup>, by the bolts 8, and the swing bolts 9, extending through the bottom plate C, and provided with thumb nuts 10, as and for the purpose specified. 16th. The combination, with a plurality of plates supported in an oblique position with the corners of their upper edges in alignment, of the wheels 20, resting of their own gravity on the plates, rotated, and deriving a circular horizontal movement, as specified. 17th. The

combination, with the plates supported in the frame, and operated upon by the wheels 20, driven as specified, of the pit Q, wall Q<sup>1</sup>, sieve Q<sup>111</sup>, and supplemental pit Q<sup>11</sup>, connected to the drain, as and for the purpose specified.

**No. 42,396. Fastening Device.** (*Appareil pour attacher.*)

Malcolm Frisen, Paterson, New Jersey, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—A fastening pin or similar device, having the pointed end provided with an enlargement near the point and a slotted end having a contracted aperture into which the point is adapted to enter and be locked against lateral strain, substantially as described. 2nd. A fastening pin or similar device, having at or near the pointed end, two flattened portions arranged approximately at right angles to each other, and adapted to enter and engage the slotted opposite end of said pin, substantially as and for the purposes set forth.

**No. 42,397. Boiler.** (*Chaudière.*)

Charles D. Mosher, New York, State of New York, U.S.A., 23rd March, 1893; 6 years.

*Claim.*—1st. In a boiler or steam generator, the combination of a furnace or fire box, a water drum located at one end of the fire box, and extending crosswise of the same, a steam drum located over the opposite end of the fire box at a higher point than the water drum, and substantially parallel therewith, and a plurality or group of tubes connecting the upper portion of the water drum with the upper portion of the steam drum, and bent to form loops disposed in vertical planes, which extend lengthwise of the fire box, the lower portion of the tubes at one side of the group being inclined from the drum to the opposite end of the fire box and separated by spaces extending substantially the entire length of said inclined portion, so that the products of combustion from all parts of the fire box can pass upwardly into the spaces surrounding the tubes, as set forth. 2nd. In a boiler or steam generator, the combination of a furnace or fire box, a water drum located at the rear end of the fire box, a steam drum located at the front end of the fire box, said drums extending across the fire box, a group of curved tubes connecting the upper portion of the water drum with the upper portion of the steam drum, said tubes being bent to form loops disposed in vertical planes extending lengthwise of the fire box, and return pipes extending vertically downward from the steam drum along the front of the fire box and horizontally along the sides of the fire box to the water drum, as set forth. 3rd. In a boiler or steam generator, comprising a steam drum, a water drum and tubes connecting the said drums, the steam drum provided with an internal longitudinal partition forming a pocket, which is closed at its ends and lower edge, and is arranged to receive the steam and water delivered by the tubes, a scroll shaped separator at the upper edge of said pocket, the outer portion of said separator being composed of longitudinal slats separated by slots, while its inner portion is continuous or imperforate, and a steam pipe extending from the inner portion of the separator through the wall of the steam drum, as set forth. 4th. In a boiler or steam generator, the combination of a furnace or fire box, a water drum located at one end of the same and extending crosswise of the fire box, a steam drum substantially parallel with the water drum and located at a higher point, a plurality of curved tubes connecting the upper portion of the water drum with the upper portion of the steam drum, and bent to form loops which are disposed in substantially vertical planes extending lengthwise of the fire box, said loops forming a recess extending rearwardly from the steam drum, an arm extending from the steam drum into said recess, horizontally arranged return pipes at the sides of the fire box, and bent tubes connecting said return pipes with said arm, said tubes increasing the heating surface and protecting the sides of the furnace, as set forth. 5th. The combination, of a drum or its equivalent, having an orifice, a tube smaller than said orifice and inserted therein, a doubled expandible collar interposed between the tube and the wall of the orifice, and an annular wedge driven into the collar to expand the same inwardly and thereby lock the tube, as set forth.

**No. 42,398. Coffin.** (*Cercueil.*)

Charles Gooding, 190 New Cross Road, Kent, England, 23rd March, 1893; 6 years.

*Claim.*—1st. A lining or a padding for a coffin consisting of a suitable fabric stuffed with a preparation of lime such as quick lime, substantially as herein shown and described and for the purpose stated. 2nd. A coffin upholstered or lined with a padding consisting of a suitable fabric stuffed with a preparation of lime such as quicklime, substantially as herein shown and described and for the purpose stated. 3rd. A coffin upholstered or lined with a padding consisting of a suitable fabric stuffed with a decomposing, disinfecting or deodorizing preparation, substantially as herein shown and described. 4th. In a coffin, the combination of a number of transverse beads, an inner lid and a sectional lining or padding consisting of a suitable fabric stuffed with a decomposing, disinfecting or deodorizing preparation, substantially as herein shown and described.

**No. 42,399. Carriage Window.** (*Fenêtre de voiture.*)

Heinrich Wahls, Parchim, Grand Duchy of Mecklenberg-Schwerin, German Empire, 23rd March, 1893; 6 years.

*Claim.*—1st. In a carriage or similar window a locking mechanism by means of which the window may be secured in any position, constructed, arranged and operated, substantially as hereinbefore described and as illustrated by the accompanying drawings. 2nd. The combination with the described locking mechanism of a carriage or similar window of a projection by means of which the window is lifted from the weather board, substantially as described. 3rd. The combination with the described carriage or similar window of centrally contracted guide grooves, substantially as described. 4th. The combination with a carriage or similar window of a counter-balance locking and disengaging apparatus, and noise preventer, all constructed and arranged substantially as hereinbefore described.

**No. 42,400. Type Justifying Machine.**

(*Machine à dresser les caractères d'imprimerie.*)

John Loudon McMillan, Ilion, New York, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In a machine for justifying printing matter, the combination of a fixed receiving guide or line channel and a type holder provided with a series of grooves or channels, each adapted to contain a line of composition or printing matter, said holder being arranged to move in relation to the receiving guide or channel so as to bring one of its receiving grooves or channels after another into alignment with said guide or line channel, whereby the printing matter of the several channels of the type holder may be successively delivered to the receiving channel. 2nd. In combination with a fixed receiving guide or line channel and with a type holder provided with grooves or channels adapted to contain lines of printing matter or set type, a spacing mechanism serving to permit the movement of the type holder past the receiving channel or guide, so as to bring one line or groove after another into alignment with the receiving channel or guide. 3rd. In combination with a fixed receiving guide or line channel, as K, a type holder, as G, provided with a series of grooves or channels adapted to contain lines of set type, a bed or support upon which such type holder is mounted, means for moving the type holder upon its support, and a spacing mechanism, substantially as shown and described, adapted to permit a line by line movement of the type holder relatively to the receiving guide or line channel. 4th. In combination with a guide or channel, a type holder movable relatively thereto, and provided with a series of grooves or channels adapted to be brought successively into alignment with the fixed guide or channel, and an ejector adapted and arranged, substantially as described, to traverse the respective channels of the type holder and to discharge type therefrom into the fixed guide or channel. 5th. In combination with a series of containing grooves or channels, a screw shaft, and a sleeve or traveller provided with a lug or ejector arm to traverse the channels of the type holder, and adapted to be connected with and disconnected from the screw shaft, substantially as set forth, whereby it is enabled to discharge type from the holder into the receiving channel. 6th. In a machine for justifying printing matter, the combination with a channelled type holder G, adapted to contain set type, and provided with a toothed bar or rack, of a receiving guide or line channel, yielding dog J, and rigid dog K, adapted to be thrown alternately into engagement with the rack, and means, substantially as shown and described, for moving the holder G, in the direction of the length of the toothed bar or rack. 7th. In a machine for justifying printing matter, the combination with a suitable supporting bed, and with a receiving guide or line channel, of a type holder G, provided with grooves or channels G, adapted to contain lines of set type, a rack bar movable with the type holder, a reciprocating bar I, and dogs J and K, carried by said bar, the dog J being adapted to yield, substantially as described, and a weight or equivalent device for moving the type holder, substantially as set forth. 8th. In combination with a type holder, as G, provided with a toothed bar or rack, reciprocating bar I, provided with yielding dog J, and fixed dog K, lever T, connected with said bar I, lever U, adapted to actuate and to be actuated by the lever T, and sleeve or traveller P, provided with nose X, substantially as and for the purpose set forth. 9th. In combination with type holder G, rack bar H, and means for moving the rack bar longitudinally, reciprocating bar I, dogs J and K, carried by said bars, levers T and U, the former connected with said bar I, screw shaft M, and sleeve or traveller P, provided with lug X, substantially as and for the purpose set forth. 10th. In combination with a channelled type holder and screw shaft M, a sleeve or traveller P, provided with ejector X, lever Q, and block R, carried by lever Q, and provided with a stem to enter into engagement with the thread of the screw shaft M, all substantially as set forth. 11th. In combination with a type holder, and with screw shaft N, sleeve or traveller P, lever Q, block R, carried by said lever and adapted to enter into engagement with the screw shaft, and a stop or bearing located in the path of the lever Q, and serving to lift one end and depress the other. 12th. The combination in a justifying machine, of a screw shaft M, a sleeve or traveller P, lever Q, provided with block R, and with seats or notches X, a spring pin Z, and stop located in the path of the lever Q, whereby the ends of said lever are alternately raised. 13th. In combination with table B, galley C, bunter S, movable

bodily and in a right line toward and from the table, a treadle A<sup>1</sup>, and band C<sup>1</sup>, connecting the bunter and the treadle. 14th. In combination with bed or table B, bar Y, slide Z, carried by said bar, bunter S, and bent arm X, carried by the bunter and extending from an opening in the cross bar Y, substantially as set forth.

**No. 42,401. Holder for Sliding Sash Windows.**

(*Arrête croisée.*)

Carl Hermann Richter, Boizenburg, Prussia, German Empire, 24th March, 1893; 6 years.

*Claim.*—A sliding sash window holder, consisting of the projection adapted to enter and engage with recesses provided in the side members of the window sash by means of a spring actuated locking bar I, capable of being operated, that is unlocked from either side of the door or casement in which the window slides, substantially as described.

**No. 42,402. Banjo.** (*Banjo.*)

Hobart C. Middlebrooke, Rock Rapids, Iowa, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In a banjo or like instrument, the combination, with the neck and the hook, of a yoke fastened to the neck, and connections between the yoke and the hoop, substantially as set forth. 2nd. The combination, with the neck and the hoop, of a yoke between the hoop and the neck, and connections adjustably connecting the hoop with the yoke, substantially as and for the purpose described. 3rd. The combination, with the neck and the hoop, of a yoke fastened to the neck, pivotal connections between the yoke and the hoop, and means for securing the hoop to the yoke at the located position, substantially as set forth. 4th. The combination, with the neck, the hoop, and the yoke, of pivotal connections between the hoop and the yoke, the plates F, secured to opposite sides of the hoop and having vertical slots and having their exposed faces roughened or ribbed, the binding screw G, and the washer and the collar I, on the screw G, and having the sides opposite the plates roughened, substantially as described, for the purpose specified.

**No. 42,403. Diary.** (*Journal.*)

Frederick E. Meeker, jr., Syracuse, New York, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. A diary or book that has in its construction an index B, with numerals representing the dates of the months printed thereon, said index B being on the outer edge of said diary or book. 2nd. A diary or book having in its construction narrow leaf F, inserted between each date on index B, thus increasing the space for memorandum, such narrow leaf F, being narrow enough to exhibit index B. 3rd. A diary or book so constructed with leaves having printed thereon, characters and numerals in similar combination as C, D, E, representing the month, the year and the day of the week that a selected date falls on for two or more years. 4th. A diary or book having in its construction index B, and containing leaves with characters and numerals printed thereon in similar combination as C, D, E, that with or without narrow leaf F, a person can select a date instantly on index B, and on opening the diary or book at the date thus selected, will be found that date of any month in the year and the day of the week it falls on for two or more years.

**No. 42,404. Bicycle.** (*Bicycle.*)

Frank M. Goodhue and James E. Goodhue, both of St. Charles, Illinois, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. The combination of bicycle wheels and frame with a driving chain, two driving wheels adapted to be connected therewith driving connections from each driving wheel to the pedal shaft and means for throwing the two driving wheels alternately but not simultaneously in or out of the driving connection with the chain. 2nd. The combination of bicycle wheels and frame therewith driving connections from each driving wheel to the pedal shaft and means for throwing the two driving wheels alternately but not simultaneously in or out of driving connection with the chain, said driving wheels adapted to impart different speeds to the driving wheels, while the speed of the pedal shaft remains constant. 3rd. The combination of bicycle wheels and a frame therewith, with a driving chain, two driving wheels continuously in engagement therewith, driving connections from the same to the pedal shaft, and means for alternately but not simultaneously operatively connecting the driving wheels with the pedal shaft. 4th. The combination of bicycle wheels and a frame therewith with a driving chain, two driving wheels continuously in engagement therewith, driving connections from the same to the pedal shaft, and means for alternately but not continuously operatively connecting the driving wheels with the pedal shaft, said driving wheels adapted to impart different speeds to the bicycle wheels, while the speed of the pedal shaft remains constant. 5th. In a bicycle, the combination of the pedal shaft with two wheels thereon, one loose on the shaft, the other adapted to slide along but rotate with the shaft, with a second shaft carrying two wheels, one adapted to be put into engagement with the sliding wheel on the pedal shaft, a driving chain continuously in contact with the two remaining wheels and with a sprocket wheel on the axle of the bicycle, a clutch device on the opposed sum

faces of the two wheels on the pedal shaft, and means for moving the sliding wheel so that it is alternately in engagement with the other wheel of the pedal shaft or with the opposed wheels on the shaft, whereby power is communicated from the pedal shaft to the bicycle wheels by either of two transmitting connections.

**No. 42,405. Method of Treating and Concentrating Pyritiferous Ores.** (*Méthode de traitement et de concentration des minerais pyritifères.*)

James Wilson Neill, Salt Lake City, Territory of Utah, U.S.A., 24th March, 1893; 6 years.

*Claim.*—The process of rendering magnetic non-magnetic ores of the class specified which consists in subjecting successive partitions of the ore successively to the action of the products of combustion increasing in temperature, and then withdrawing the ore from the action of the heat before the particles have lost their angularity.

**No. 42,406. Means for Supporting and Driving Rotary Screens.** (*Moyen de supporter et mouvoir les écrans rotatoires.*)

The Firm of R. L. F. Strathy and Company, assignee of Charles Havelock Taylor, both of Montreal, Quebec, Canada, 24th March, 1893; 6 years.

*Claim.*—1st. A rotary screen or the like, having a combined external overhead supporting and driving gear, as and for the purposes set forth. 2nd. A rotary screen or the like, suspended from an external overhead driving gear and rotatable bearings, as set forth. 3rd. A rotary screw or the like, all the supporting and driving gear of which is located externally of the same, and laterally of its longitudinal axis whereby its interior and ends are left completely free, open and unobstructed, as set forth. 4th. In a rotary screen or the like, of cylindrical form, the combination with the end pieces or heads of the body proper thereof, of external lateral annular extensions, and driving and supporting gear located externally of the screen body and laterally of its longitudinal axis, and adapted to support and rotate the screen through said extensions, as set forth. 5th. In a rotary screen or the like, of cylindrical form, the combination with the body proper, provided at its ends with external lateral annular extensions having peripheral bearing flanges, of a pair of shafts located above the screen, running parallel with the longitudinal axis thereof, and being situated on either side of the vertical axis of same, means out of contact with the body proper of said screen, for supporting said shafts, and rotating one of same, and rotatable bearings on the ends of said shaft on which the inner sides of said peripheral bearing flanges bear and travel, as set forth. 6th. In a rotary screen or the like, of cylindrical form, the combination, with the body proper, provided at its ends with external lateral annular extensions having peripheral bearing flanges projecting inward over the screen body proper so as to face each other, of a pair of shafts located above the screen within the space between said extensions, running parallel with the longitudinal axis of said screen, and being situated at equal distances on either side of the vertical axis of same, a hanger or support out of contact with the body proper of said screen for supporting said shafts, rotatable bearings on the ends of said shafts on which the inner sides of said peripheral bearing flanges bear and travel, and means for rotating one of said shafts and the rotatable bearings carried by it, as set forth. 7th. Means for supporting and driving rotary screens and the like located above the screens, as and for the purposes set forth.

**No. 42,407. Caster.** (*Roulette.*)

The James Smart Manufacturing Company, Limited, assignee of John Osmond, both of Brockville, Ontario, Canada, 24th March, 1893; 6 years.

*Claim.*—1st. A blank for forming the horn or frame of furniture casters, said blank stamped out of sheet metal and having a body A, provided with a central perforation a, two wings 3, 4, integral with said body and extending from opposite sides, said wings having a perforation b, near the ends, and a tail 5, integral with said body and extending therefrom intermediately of said wings, said tail provided with a perforation c, as and for the purpose set forth. 2nd. A caster frame or horn comprising a metal blank having a perforated body A, perforated wings 3, 4, and a perforated tail 5, said the perforations will be in alignment with the perforation in the body A, as set forth for the purpose described. 3rd. In a caster, the combination with the pin 15, and wheel 13, of the horn or frame having a body A, provided with a perforation a, parallel bent perpendicular wings 3, 4, and a tail 5, provided with a perforation c, and pin passing through said perforations a and c, and a washer 17, forced on said pin when inserted to hold the pin loosely, whereby the bearing through which said pin passes may be more or less in vertical alignment with the wheel, as set forth. 4th. The combination with a sheet metal plate having perforated wings integral therewith of a tubular bearings A<sup>5</sup>, located above the wings 3, 4, as set forth.

**No. 42,408. Car Coupler.** (*Attelage de chars.*)

Frank Averill Fox, San Francisco, California, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In a car coupler, the combination with a fixed section having the forwardly extending lugs provided with the trans-

versely curved bearing walls having the vertical surface and the inclined surface, and the swinging section provided with the transversely curved bearing walls having the vertical surface and the inclined surfaces, substantially as specified. 2nd. In a car coupler, the combination with the fixed section and the swinging section, of the swinging locking bolt carried by said swinging section, substantially as specified. 3rd. In a car coupler, the combination with the fixed section and the swinging section, of the locking bolt, a link or links connecting said bolt to the swinging section within a recess thereof, and a lever for moving said bolt in one direction, substantially as specified.

**No. 42,409. Automatic Gas Lighting and Extinguishing Device.** (*Allumoir et éteignoir automatique pour le gaz.*)

Albert Snoeck, Ensival, Liege, Belgium, 24th March, 1893; 6 years.

*Claim.*—1st. In an automatic gas lighting and extinguishing device, a burner capable of producing a main flame and an auxiliary flame, a valve to control the flow of gas thereto, and a time mechanism to automatically operate the said valve to extinguish one or the other of the said flames, substantially as described. 2nd. In an automatic gas lighting and extinguishing device, a burner capable of producing a main flame and an auxiliary flame, and a valve to control admission of gas thereto, combined with a time mechanism, and a device adjustable with relation to and actuated by said mechanism, to automatically operate said valve, substantially as described. 3rd. In an automatic gas lighting and extinguishing device, a burner capable of producing a main flame and an auxiliary flame, and a valve to control the admission of gas thereto, combined with a shaft connected with and to operate said valve, means to move said shaft, and a releasing mechanism to automatically control the movements of said valve by the said shaft, to operate substantially as described. 4th. An automatic burner containing main and auxiliary gas passages, and a grooved valve to control the admission of gas thereto, a valve seat containing annular grooves in line with the main and auxiliary passages, and co-operating with the said grooves in the said valve seat, the said parts having a passage to, at times, provide additional gas to the auxiliary flame, substantially as described. 5th. In an automatic gas lighting and extinguishing device, a main burner and an auxiliary burner, and a valve to control the admission of gas thereto, combined with a shaft connected with and to operate said valve, means to move said shaft, and independent releasing contrivances to permit movement of said shaft to light and extinguish the gas, substantially as described. 6th. In an automatic gas lighting and extinguishing device, an automatic gas burner, a shaft means to move the same to operate said burner, engaging devices to hold and release said shaft, and a time mechanism to automatically move said engaging devices after predetermined intervals, substantially as described. 7th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to move the same to operate the said burner, a locking projection on and movable with said shaft, a pawl to engage said projection to restrain said shaft from movement, and mechanism to automatically move said pawl from engagement with said projection to permit movement of said shaft, substantially as described. 8th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to move the same to operate said burner, a locking projection on and movable with said shaft, pawls to engage said projection to restrain said shaft from movement, and mechanism to automatically move said pawls to release said shaft and permit movement thereof to light and extinguish the said burner, substantially as described. 9th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to move the same to operate said burner, a locking projection on and movable with said shaft, a pawl to engage said projection to restrain said shaft from moving, a releasing shaft, means to rotate it once in twenty-four hours, and a projection movable therewith to actuate said pawl to release the shaft held thereby, to operate, substantially as described. 10th. In an automatic gas lighting and extinguishing device, an automatic burner, a disc on said shaft, two projections on said disc, one of which is at a greater distance from the axis of rotation than the other, an engaging member to engage one of said projections to restrain said shaft from rotation, and mechanism to move said member to disengage it from said projection, to permit partial rotation of said shaft until stopped by engagement of said member with the other of said projections, the said member being thereafter further moved, to be disengaged from the latter projection to permit further rotation of said shaft, to operate, substantially as described. 11th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to rotate it to operate said burner, a disc on said shaft having two projections one of which is at a greater distance from the axis of rotation than the other, two engaging devices, and mechanism to cause said engaging devices to alternately engage the two projections, successively, whereby four distinct movements are given to the said shaft, to operate, substantially as described. 12th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft, and means to move the same, to operate said burner, a time mechanism to control movement of said shaft, whereby, when the time mechanism is set, or varied, the mechanism which controls the movement of said shaft will likewise be correspondingly set or varied, substantially as described.

13th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft to control the same, a normally wound spring to actuate said shaft, means to control the intermitting rotation of said shaft, and a connection between the said shaft and burner whereby the burner will be operated during the winding operation to indicate that the burner is in working condition, substantially as described. 14th. In an automatic gas lighting and extinguishing device, a main and an auxiliary burner, and means to control the flow of gas thereto, combined with a protector having walls of wire gauze through which the air passes to the auxiliary burner, substantially as described. 15th. In an automatic gas lighting and extinguishing device, a burner capable of producing a main and an auxiliary flame, combined with a protector for said auxiliary flame, said protector being subdivided into two chambers, through one of which air passes to the flame and through the other of which the air passes from the flame, substantially as and for the purpose set forth. 16th. The herein described light protector, which consists of top and bottom plates, a connection perforated annular wall, a plate located between said top and bottom plates, and having a suitable opening for the passage of the flame, and a suitable chimney, substantially as described. 17th. An automatic burner capable of producing main and auxiliary flames, combined with a protector for said auxiliary flame, said protector comprising top and bottom plates, concentric rings or bands joining said plates and having openings, an intermediate plate arranged between said top and bottom plates, and having a flame opening, the openings in one of the said rings being offset, or out of line with the openings in another of said rings, said openings being closed by wire gauze, and a chimney surrounding said flame opening substantially as described. 18th. In an automatic gas lighting and extinguishing device, an automatic burner capable of producing main and auxiliary flames, combined with a protector for said auxiliary flame, said protector comprising a top plate, having a flame opening and a bottom plate, and a perforated band to connect said plates, and a removable cap to close said flame opening, substantially as described. 19th. In an automatic gas lighting and extinguishing device, an automatic burner capable of producing main and auxiliary flames, a valve to control the admission of gas thereto, and mechanism to operate said valve, combined with a protector for said auxiliary flame, having an opening for the passage of said auxiliary flame, and a removable cap actuated by said mechanism, to close said opening, substantially as described. 20th. In an automatic burner, the combination, with the auxiliary burner of a protector consisting of the top and bottom plates  $c$ ,  $c^1$ , the intermediate plate  $c^2$ , concentric bands  $c^3$ ,  $c^4$  and  $c^5$ , connecting said plates, openings  $c^6$ ,  $c^7$ , in said bands closed by wire gauze, the openings in one band being offset from the openings in another band, openings  $c^{11}$ ,  $c^{12}$ ,  $c^{13}$ , for the passage of the auxiliary flame, a chimney surrounding said opening  $c^{11}$ , and a removable cap  $m^5$ , to close the opening  $c^{13}$ , and mechanism controlled by the operation of the burner to move said cap, substantially as described. 21st. In an automatic gas lighting and extinguishing device, an automatic burner capable of producing main and auxiliary flames, a plug valve to control the admission of gas thereto, a protector for said auxiliary burner having an outlet opening for the auxiliary flame, a cap to close said opening, an arm  $m^3$ , to move said cap, and a connection  $m^1$ , between said arm and said plug valve to operate, substantially as described. 22nd. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft  $d^1$ , to operate the same, a spring to actuate said shaft, a shaft  $d^2$ , to control the rotation of the shaft  $d^1$ , the disc  $e$ , fast on said shaft  $d^2$ , and having projections 5, 6, pawls  $e^1$ ,  $e^2$ , to engage said projections, the shafts  $f^1$ ,  $f^2$ ,  $f^3$ , fast thereon to move said pawls, and a time mechanism to rotate said shafts, substantially as described. 23rd. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to rotate it, to operate said burner, a releasing device for said shaft, and a shaft  $f^4$ , having an arm to move said releasing device, combined with a wheel, means to rotate it, and an adjustable connection between said wheel and said shaft to operate, substantially as described. 24th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to rotate it to operate said burner, a releasing device for said shaft, and a shaft  $f^4$ , having an arm to move said releasing device, combined with a wheel, means to rotate it, and a worm and worm wheel connection, substantially as described, between said wheel and shaft  $f^4$  to operate, substantially as described. 25th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft and means to rotate it to operate said burner, a releasing device for said shaft, and a shaft  $f^4$ , having an arm to move said releasing device, combined with a wheel  $f^5$ , a worm  $i^1$ , movable therewith, and a worm wheel  $i$ , on said shaft  $f^4$ , and in mesh with said worm, substantially as described. 26th. In an automatic gas lighting and extinguishing device, a shaft  $f^6$ , a time mechanism to actuate the same, a sleeve on said shaft and an adjustable connection between said shaft and sleeve, an automatic burner, and mechanism moved by rotation of said sleeve to operate said burner, substantially as described. 27th. In an automatic gas lighting and extinguishing device, a shaft  $f^6$ , a time mechanism to rotate it, a sleeve on said shaft, an adjustable connection between said shaft and sleeve, and hour and minute hands moved by said sleeve, combined with an automatic burner, and mechanism controlled by movement of said sleeve to operate said burner, substantially as described. 28th. In an automatic gas lighting and

extinguishing device, an automatic burner, a shaft to control the operation of the same, a releasing device for said shaft, releasing mechanism to move said releasing device, an adjustable connection between said mechanism and said releasing device, a time mechanism and an adjustable connection between the same and said releasing mechanism, all to operate, substantially as described. 29th. In an automatic gas lighting and extinguishing device, a time mechanism between said shaft and sleeve, hour and minute hands moved from said sleeve, the pinion  $f^{12}$ , gear wheel  $f^{13}$ , pinion  $f^{11}$ , gear wheel  $f^{10}$ , mounted on the shaft  $f^9$ , an automatic burner, a shaft to control the operation of the same, and a releasing device for said shaft controlled by said shaft  $f^9$ , substantially as described. 30th. In an automatic gas lighting and extinguishing device, the combination with a time mechanism, and indicating hands therefor, of a partially concealed dial carrying two sets of indicating characters, and co-operating extensions on said hands to operate, substantially as described. 31st. The combination with a mechanism, and an indicating device moved thereby, of a partially concealed dial having two sets of indicating characters to co-operate with said indicating device, substantially as described. 32nd. The combination with a mechanism and a pointer  $o^2$ , moved thereby, of a partially concealed dial  $o$ , having two sets of indicating characters, and an extension  $o^3$ , on said pointer  $o^2$ , substantially as described. 33rd. The combination with two or more dials, one or more of which are partially concealed by the others, and two sets of indicating characters on said partially concealed dials, of indicating pointers to co-operate with said character and mechanism to move the said pointers, substantially as described. 34th. The combination with an automatic burner, and a valve to control the same, of an operating shaft for said valve, and an adjustable connection between said valve and its operating shaft, substantially as described. 35th. The combination with an automatic burner, and a valve to control the same, of an operating shaft for said valve, and a universal adjustable connection between said valve and its operating shaft, substantially as described. 36th. In an automatic gas lighting and extinguishing device, the combination with an automatic burner, and a valve to control the same, of a shaft to operate said valve, and a universal adjustable connection between said shaft and valve, consisting of the pin 2, pivoted on the pin 1, on said shaft, the yoke 3, jointed to and movable on said pin, and the projection 4, and ears 5 on the valve, substantially as described. 37th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft, and means to rotate it to operate said burner, a releasing device for said shaft, and a time actuated shaft  $f^7$ , having an arm to move said releasing device, combined with a wheel, means to rotate it, an adjustable connection between said wheel and said shaft, and means to indicate to the operator when he has moved the said adjusting device a distance sufficient to produce a certain variation in the time for moving said releasing device to operate, substantially as described. 38th. In an automatic gas lighting and extinguishing device, an automatic burner, a shaft, and means to rotate it to operate said burner, a releasing device for said shaft, and a shaft  $f^8$ , having an arm to move said releasing device, combined with a wheel  $f^8$ , a worm  $i^1$ , movable therewith, a worm wheel  $i$ , on said shaft  $f^8$ , and an operating wheel  $i^2$ , shaped to operate, substantially as described.

#### No. 42,410. Electrical Hose Signalling Apparatus.

(Appareil électrique à signaux.)

William Fowler, Colorado Springs, Colorado, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In a hose signalling apparatus, the combination, of a source of electricity, a circuit composed of three wires which are attached to the hose, a bell or other signalling device located at each extremity of the line of hose and within the circuit, a third bell or signalling device intermediately located and connected by means of branch wires with the wires of the main circuit, and a push button for each bell or annunciator, the elements of the apparatus being so arranged and connected that by pressing any button all the bells are sounded simultaneously, substantially as described. 2nd. In a hose signalling apparatus, the combination, of a source of electricity, a circuit, the wires of which are attached to the hose, a bell or annunciator located at each extremity of the line, electrically arranged couplings whereby the circuit is made or broken by uniting or disconnecting the hose sections, and a third annunciator or signalling device intermediately located and connected by branch wires with the wires of the main circuit at will, said connection being made by the use of a key attached to one of the metallic sections of the hose couplings, and suitable push buttons, the whole being so arranged and connected that by pressing any one of the buttons all the bells are sounded, substantially as described. 3rd. In a hose signalling apparatus, the combination of a source of electricity, a circuit composed of three wires which are attached to the hose sections, a bell or other signalling device located at each end of the line and within the circuit, one wire of each length of hose extending to the metallic section of the coupling and the other wires to special attachments located within the coupling sections, whereby the circuit is established by coupling the hose, and push buttons, the apparatus being so arranged that the pressing of any button rings both bells, substantially as described. 4th. In a hose signalling apparatus, the combination of a source of electricity, sig-

nalling mechanism located at each extremity of the line of hose, a circuit in which said mechanism lies, the wires of the circuit being carried by the hose, electrically arranged couplings consisting of the metallic sections of the coupling extremities of the hose to which the sections of one of the wires lead, and special parts located within the hose coupling sections to which the sections of the other wires lead, and a third signalling device intermediately located and connected with the main circuit by branch wires leading to a key carrying suitable contacts, one of the metallic parts of the hose coupling being fashioned to receive this key, one of the key contacts engaging said coupling, while the other contacts are electrically connected with the special attachments within the section, and a suitable push button for each bell, annunciator or signalling device, substantially as described. 5th. In an electrical hose signalling apparatus, the combination with the alarm mechanism, the hose sections and the conducting wires attached thereto, of an insulating ring attached to the engaging coupling extremities of the hose section, one of these rings being provided with metallic springs 32, to which the circuit wires lead, and the other with metal cased chambers connected with the circuit wires, and spring actuated pistons having contact pins 40 normally projecting from the outer surface of the ring, and an intermediate circumferential insulating plate provided on one face with metal contact plates 33, adapted to engage springs 32 respectively, and on the opposite face with separate contact rings respectively connected electrically with plates 33, and pins 40, when the hose sections are coupled, substantially as described. 6th. In a hose signalling apparatus, the combination, with a source of electricity, of annunciators and intermediate circuit wires wound spirally around the hose, and couplings constructed with reference to completing the circuit therethrough, and consisting of insulating rings 29 and 30, attached to the coupling extremities of the hose sections, ring 30, being provided with contact springs 32, normally projecting beyond the plane of its outer face and connected with the circuit wires, ring 29, being provided with metal walled chambers to which the circuit wires lead, and in which are located the spring actuated pistons having contact pins 40, normally protruding from the face of the rings, and an intermediate circumferential insulating plate provided with metal contact plates 33, on one face adapted to engage springs 32, respectively, and separate contact rings secured to the opposite face and respectively connected electrically with the springs 32, and pins 40, when the hose sections are coupled, substantially as described. 7th. In a hose signaling apparatus, an electrically arranged coupling consisting of two insulating rings 29 and 30, ring 30 being provided with springs 32, normally projecting beyond the plane of its outer face and to which the circuit wires lead, ring 29, being provided with metal walled chambers to which the circuit wires are connected, and having spring actuated pistons located therein and provided with contact pins normally protruding from the chambers and projecting beyond the face of the ring, and an intermediate insulating circumferential plate, having separate metal plates 33, on one face, and separate contact rings on the opposite face, the plates 33, being respectively connected with the rings and the latter with the pins 40, when the coupling is made, substantially as described. 8th. An electrically arranged hose coupling consisting of two insulating rings 29 and 30, ring 30 being provided with separate metallic contact rings on its outer face, to which the circuit wires lead, ring 29, being provided with metal walled chambers connected with the circuit wires, spring actuated pistons located therein and provided with contact pins normally extending beyond the face of the ring and adapted to engage the opposite metal ring when the coupling is established, substantially as described. 9th. A hose signalling apparatus consisting of a source of electricity, a circuit consisting of wires attached to the hose, and suitable connections at the hose couplings, whereby the circuit is preserved without interfering with the coupling or uncoupling the hose sections, said connections consisting of two insulating rings, 29 and 30, ring 30, being provided with separate metallic contact rings on its outer face, to which the circuit wires lead, ring 29, being provided with metal walled chambers connected with the circuit wires, spring actuated pistons located therein and provided with contact pins normally extending beyond the face of the ring and adapted to engage the opposite metal ring when the coupling is established, substantially as described.

**No. 42,411. Fraising Machine. (Machine à fraiser.)**

Alexander A. Barthelmes, Toronto, Ontario, Canada, 24th March, 1893; 6 years.

*Claim.*—1st. A fraising machine, consisting of a suitable bed plate, a work rest mounted thereon, cutter heads adapted to automatically move to and operate on the work on the rest, substantially as described. 2nd. A fraising machine, consisting of a suitable bed plate, a vise mounted thereon, cutter heads, mechanism, substantially as described, for the purpose of giving to said cutter heads a longitudinal movement to bring them into engagement with the vise and mechanism for transmitting to the cutter heads a rotary motion, substantially as described. 3rd. In a fraising machine, the combination of a bed plate in a vise mounted on said bed plate, provided with a movable jaw to automatically move towards and securely hold the work during the engagement of the cutter heads therewith, and to move from and release the work after the cutter heads have completed their operation, and cutter heads and mechanism for transmitting motion to the cutter heads and to the

movable jaw, substantially as described. 4th. A fraising machine, consisting of a suitable bed plate, a work rest mounted thereon, cutter heads adapted to automatically move towards and engage with the work on the rest, mechanism, substantially as described, for transmitting to said cutter heads a rotary motion, and for moving said cutter heads longitudinally to bring them into engagement with the work on the rest, and mechanism to move the cutter heads from engagement with the work after the operation of cutting has been completed, substantially as described. 5th. In a fraising machine, the combination of a bed plate, a vise mounted thereon provided with a movable jaw, a lever one end of which engages with and actuates said movable jaw, and the other end engaging with a cam mounted on a spindle rotated at a slower rate of speed than the driving mechanism of the machine, cutter heads adapted to move longitudinally on said bed plate to engage with the work held in the vise, mechanism for, substantially as described, moving said cutter heads into engagement with the work, and mechanism for transmitting to said cutter heads a rotary motion, substantially as described. 6th. In a fraising machine, the combination of a bed plate, a work rest mounted thereon, said work rest consisting of a stationary jaw and a movable jaw, a pivoted lever to operate said movable jaw, a cutter head mounted on a suitable spindle, journaled in bearings in the head stock, a pivoted lever to move longitudinally said cutter head into engagement with the work in the rest mechanism for operating said pivoted levers and mechanism for transmitting a rotary motion to said cutter heads, substantially as described. 7th. In a fraising machine, the combination of a suitable bed plate, a work rest mounted thereon consisting of a stationary jaw and a movable jaw, cutter heads adapted to move longitudinally into engagement with the work in the rest, mechanism for transmitting to said cutter heads a rotary motion, a spindle mounted in suitable bearings in the frame work of the machine, a cam mounted on said spindle, a pivoted lever one end of which engages with said cam and the other end with said movable jaw, a second cam mounted on said spindle and a second pivoted lever, one end of which engages with said cam and the other with said cutter head, the engagement of said lever with said cam and cutter head moving said cutter head longitudinally into engagement with the work in the rest, a friction clutch mounted on said spindle, a counter shaft on which is mounted the pulleys for transmitting a rotary motion to said cutter head, a spindle intermediate between said counter shaft and first mentioned spindle, reduction pulleys mounted on said counter shaft and on said second mentioned spindle, motion transmitted to said second spindle from said counter shaft, reduction pulleys mounted on said first and second spindles, mechanism mounted on said first mentioned spindle for the purpose of disengaging said friction clutches when said spindle has completed its revolution, substantially as described.

**No. 42,412. Hay Saver. (Crèche.)**

Thomas Doolan, Chicago, Illinois, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. The combination, with a manger, of a three sided hay saver constructed from a single piece of spring material formed with its ends bent to constitute pintles, and the parallel side portions, said portions being disconnected, so that their pintle ends may be moved to and from each other, and the said portions also being a sufficient distance apart to permit the horse's head between them, but not to allow its lateral movement therein, the saver being removably hinged at a considerable distance above the top of the manger and arranged to lie at an angle thereto with its front portion supported by the front edge of the manger, substantially as shown and described. 2nd. The combination, with a manger, of a three sided hay saver constructed from a single piece of spring material and formed with its ends bent to constitute pintles by which the saver is hinged with the outward semi-circular bends near each end, the parallel side portions, and the cross bar at the lower end, the saver being hinged at a considerable distance above the manger and arranged to lie at an angle to the top of the manger with the cross bar resting on the front edge of the manger, substantially as shown and described.

**No. 42,413. Cattle Guard. (Garde-bétail.)**

Frank C. Seymour, Chicago, Illinois, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. A cattle guard comprising a series of cross bars, of which those at one or both ends of the guard are set closer together than the rest, substantially as described. 2nd. In a cattle guard, a grating comprising rails running substantially parallel with the track and cross bars provided with at least one toothed lateral edge secured to such rails, substantially as described. 3rd. A cattle guard made in three or more sections, each section comprising longitudinal supporting rails and transverse cross bars provided with teeth along their lateral edges, substantially as described. 4th. In a cattle guard, a section comprising longitudinally extending toothed supporting rails adapted to be secured to the ties, and cross bars mounted upon such rails, the cross bars being bent or rounded to form edges upon their upper surface and provided with teeth along their lateral edges, substantially as described. 5th. In a cattle guard, a grating comprising side rails resting upon and secured to the ties and toothed cross bars attached to such rails, of



which bars those at one or both ends of the guard are set closer together than the rest, substantially as described. 6th. In a cattle guard, a grating comprising side rails secured to the ties and cross bars attached to such rails and provided with toothed lateral edges, the sides of the end cross bars extending down to the ties, whereby a smooth surface is afforded to prevent dragging chains, etc., from catching under the grating, substantially as described.

**No. 42,414. Bicycle. (Bicycle.)**

Henry Cutler, Toronto, Ontario, Canada, 24th March, 1893; 6 years.

*Claim.*—In a drive for bicycles, the combination with the pedal axle and the axle of the main driving wheel, of a bevel gear wheel secured to the pedal axle, having the bevel gear teeth situated to the inside next the frame, and connected by bevel gear pinions on the drive spindle H, to the outer face teeth of the gear wheel on the axle of the driving wheel, the spindle being journaled in brackets secured to the lower portion of the frame, as and for the purpose specified.

**No. 42,415. Automatic Car Brake.**

(*Frein automatique de chars.*)

Enoch Farnsworth, Bellwood, Pennsylvania, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In an automatic draw bar brake, the combination with an endwise movable draw bar, of a trip pivoted to said draw bar and movable longitudinally therewith, a brake lever arranged to be normally moved by said trip or detent, and a manually operated lever having a part extending in the path of said trip or detent and forming a bearing therefor, whereby said detent can be freed from engagement with the brake lever by said manual lever, as and for the purpose described. 2nd. In an automatic draw bar brake, the combination with a brake lever and a spring cushioned draw bar, of a trip or detent pivoted to and movable with the draw bar, and having the abrupt shoulder and the incline or cam, an operating lever arranged in the path of the shoulder on said trip, and connected with the brake lever, and a hand lever having an arm adapted to be adjusted in the path of the cam on said trip, substantially as described. 3rd. In an automatic draw bar brake, the combination with a brake lever and an endwise movable draw bar, of a spring associated with said draw bar, a trip or detent connected to and movable with said draw bar, and having the abrupt shoulder at its rear end, and an operating lever provided with a projection against which the abrupt shoulder bears, substantially as and for the purpose described. 4th. In an automatic draw bar brake, the combination, with a brake lever and an endwise movable draw bar, of a spring associated with said draw bar, a pivoted trip or detent movable with said draw bar, and having the incline or cam, an operating lever arranged to be operated by the trip or detent and connected to the brake lever, and a rock shaft having a hand lever and an arm adapted to be adjusted in the path of the cam or incline on said trip to permit the latter to be elevated by the arm, and thereby disconnected from the operating lever, substantially as and for the purpose set forth.

**No. 42,416. Feeding Device. (Appareil d'alimentation.)**

Allen Conkling, Chicago, Illinois, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. The combination, with a primary feed roll and its supporting mechanism, of an endless apron having its supporting mechanism mounted independently of that of said feed roll and adapted to support the apron with relation to the feed roll with variable surface contact, the apron guiding devices remaining relatively unchanged, substantially as specified. 2nd. The combination, with a primary feed roll, of an endless apron having oppositely located apron supporting and guiding mechanism, and a frame work for supporting said apron and its said mechanism mounted adjustably to and from and independently of the said feed roll, substantially, as specified. 3rd. The combination, with a primary feed roll, of an endless apron, oppositely located apron guiding and directing mechanisms, a frame work for supporting said mechanisms, and means for adjusting said frame work toward and along the active surface of said feed roll, substantially as specified. 4th. The combination, with a roll and an endless apron and with its moving and guiding mechanisms, of a frame work for the support and operation of said mechanisms, said frame work being mounted for bodily and pivotal movement, substantially as specified. 5th. The combination, with a feed roll or its equivalent and with an endless apron and of means for supporting said apron with one end higher than the other, of a pivoted frame work, adjustable bearings for the pivots, and means for changing the position of the frame work with relation to its points of support, substantially as specified. 6th. The combination, with a pair of feed rolls of a bed adapted to be projected between said rolls an endless apron mounted on the bed, with one end higher than the other, and means for simultaneously supporting and moving the bed inwardly and upwardly, substantially as specified. 7th. The combination of a feed roll and an endless apron mounted on a movable apron supporting bed having a curved extension, which said apron surrounds, and means for moving the bed inwardly and upwardly with relation to the feed roll, as set forth. 8th. The combination, with a feed roll

and an endless apron, of the bed having a curved extension at one end and a roller for supporting the apron and means for adjusting the bearings of said roller at the other end, a frame work for supporting said bed, and means for moving the frame work simultaneously upward and inward, substantially as specified. 9th. The combination, with a feed roll and an endless apron, of a bed terminating with an extension and provided with an apron-tightening and carrying roller, and a frame work adapted by adjusting devices for upward and inward movement toward said roll, substantially as specified. 10th. The combination, with a feed roll and an endless apron, of a bed having suitable apron supporting and moving devices, and frame work mounted for upward and inward movement toward said roll, and having a tie bar and rod, substantially as specified. 11th. The combination, with the primary feed rolls of the machine and an endless apron, of a bed having apron supporting and moving devices mounted independently of a feed roll, and means for changing the vertical and longitudinal position of the bed with relation to the said primary rolls of a machine, substantially as specified. 12th. The combination, of a feed roll and an endless apron, a bed having a curved extension, a roller and a frame having a sliding box in each side thereof, an adjusting screw for each box, a supporting sliding block on each side of the frame, and of brackets adapted to support the framework, and provided with adjusting screws, substantially as specified. 13th. The combination, with a feed roller or its equivalent and an endless apron, as C, of the bed, as E, terminating at one end in a bent plate, and provided at or near its other end with a roller, as G, and with a roller, as J, movably connected with the bed outside of the point of contact of the roller J with the apron, substantially as specified.

**No. 42,417. Trolling Apparatus.**

(*Appareil pour amorcer.*)

Henry Justus Welch, Carthage, New York, U.S.A., 24th March, 1893; 6 years.

*Claim.*—1st. In a trolling device, a transparent receptacle adapted to receive the bait, and provided with openings for the passage of water through the receptacle, and snells or lines attached to said receptacle and carrying hooks, as and for the purpose described. 2nd. In a trolling device of the character described, the combination, with a transparent chamber having one of its ends provided with a perforated cap, and its opposite end closed by means of a cork or its equivalent, said cork being provided with a peripheral groove, of a snell or line having one of its ends secured within said groove, and carrying hooks, substantially as described and for the purpose specified.

**No. 42,418. Method of Making Rubber Stamps. (Méthode de fabrication des timbres en caoutchouc.)**

William Frank Barnes, Orlando, Florida, U.S.A., 27th March, 1893; 6 years.

*Claim.*—1st. In a method of making rubber stamps herein described, consisting essentially of setting up the desired form of type provided on one end with raised letters or characters, and on the opposite end with letters or characters in intaglio, then obtaining a proof from the end containing the raised letters or characters, and finally placing the rubber on the matrix or sunken letters, and vulcanizing to produce the necessary rubber cast.

**No. 42,419. Device for Receiving Mail Matter, Milk, Parcels and Kindred Articles. (Appareil pour recevoir les matières postales, le lait, les paquets et autres articles semblables.)**

Frederick Paxton Robson, Ottawa, Ontario, Canada, 27th March, 1893; 6 years.

*Claim.*—1st. The herein described receiving device, consisting of the body A, separated by the diaphragm or plate G, into two parts, said diaphragm having the funnel F, communicating from the upper to the lower compartment, the latter being provided with the hinged door B, the former protected by the sloping hinged door or cover C, all combined and arranged, substantially as set forth. 2nd. The combination, with the body A, of the projections D, D, having the holes d, d, for suspending the device and the pocket E, placed above the diaphragm G, substantially as and for the purposes set forth. 3rd. As an article of commerce, the herein described receptacle made up of the body A, the hinged door B, the cover C, the projections D, the ticket pocket E, the funnel F, and the diaphragm G, substantially as set forth.

**No. 42,420. Coin Freed Mechanism.**

(*Mécanisme actionné par une pièce de monnaie.*)

John Thomas Calland, Leigh, Lancaster, England, 27th March, 1893; 6 years.

*Claim.*—1st. The rollers B, or equivalent device required to be coin freed after a given amount of travel, a pawl or its equivalent and a surface such as the edge of wheel travelling synchronously with the roller, (or device required to be coin freed) and having a catch registering with the pawl or its equivalent, in combination with a coin freed device operating said pawl. 2nd. In a coin freed mechanism, for the purposes described, the arrangement of a stop

automatically entering and remaining in the slot so as to prevent the entry of coin whenever the machine is not in condition to give the equivalent for that coin, but automatically removed when the machine is in condition for delivering that equivalent, substantially as described. 3rd. In coin freed mechanism, for the purposes described, the combination therewith of a recording device operated by clock work or other suitable mechanism, in connection with a moving part of the coin freed mechanism, so that at the end of a day or other period it can at once be seen how many times the apparatus has been made use of, substantially as described. 4th. The mechanism constructed and arranged, substantially as described and illustrated.

**No. 42,421. Perpetual Calendar.**

(*Calendrier perpétuel.*)

George Dreyfus, Paris, France, 27th March, 1893; 6 years.

*Claim.*—1st. A perpetual calendar consisting of a number card on which are marked in seven year columns and seven month columns respectively the numbers of the years for a desired period and the numbers 1 to 31 which are always visible, and of a name card carrying in divisions corresponding in size respectively to the width of a year and a month column the names of the months and the names of the days of the week repeated in order several times and which card is adapted to be moved relatively to the number card, the names and numbers being arranged on the cards, substantially as described, so that the name of any month can be brought opposite and column containing the numbers of the years and be visible when the names of the seven consecutive days will be opposite the month columns and will be visible and correspond with the numbers in those columns for that year, so that the whole forms a calendar for the said period. 2nd. A perpetual calendar consisting of a number card on which are marked in seven year columns and seven month columns respectively, the numbers of the years for a desired period and the numbers 1 to 31 which are always visible and of a name card carrying in seven divisions corresponding in size to the width of a year column the names of the months those months which in any non-leap year begin with the same day of the week being inserted in the same division and in order according to the name of the first day of the month for that year and also carrying in nineteen divisions corresponding in size to the width of the month column the names of the days of the week repeated in order the cards being adapted to be moved relatively to one another and the names and numbers being arranged on the cards, substantially as described, so that when the seven divisions containing the names of the months are opposite the year columns and are visible the central seven divisions containing the names of the days and opposite the month columns and are visible and that the whole forms a perpetual calendar for the said period.

**No. 42,422. Sharpener for Scissors.**

(*Rémouleur de ciseaux.*)

Charles H. Russell, assignee of George S. Collum, both of Hartford, Connecticut, U.S.A., 27th March, 1893; 6 years.

*Claim.*—1st. As an article of manufacture, a scissors' sharpener consisting of a wide cylindrical body portion or hub and at each end thereof an outwardly flaring smooth guiding flange, substantially as described. 2nd. As an article of manufacture, a scissors' sharpener consisting of a wide roughened cylindrical body portion or hub and at each end thereof an outwardly flared smooth guiding flange, substantially as described. 3rd. As an article of manufacture, a scissors' sharpener consisting of a wide cylindrical body portion or hub and at each end thereof an outwardly flaring smooth guiding flange having a pocket to protect the finger and thumb, substantially as described.

**No. 42,423. Cattle Guard. (*Garde-bétail.*)**

The Consolidated Railway Equipment Company, of Toronto, assignee of William Coe Munn, both of Toronto, Ontario, Canada, 27th March, 1893; 6 years.

*Claim.*—As an improved cattle guard a series of bars connected together located above the ties and supported upon a properly located pivot in combination with a spring or springs arranged to support one end of the guard substantially as and for the purpose specified.

**No. 42,424. Machine for the Manufacture of Veneer.**

(*Machine pour la fabrication du plaçage en bois.*)

Llewellyn A. Morrison, assignee of John Larsen, both of Toronto, Ontario, Canada, 27th March, 1893; 6 years.

*Claim.*—1st. A veneer knife having its cutting edge set on a line leading to the centre of the log and carried on a circle bearing having the cutting edge of the knife as the centre of its circle, substantially as and for the purpose specified. 2nd. A veneer knife supported in such a manner that its heel may be adjusted to alter the angle of the knife without changing the position of its cutting edge, a scarfing knife carried on a spindle supported by a carriage, a bar being fixed to the spindle of the scarfing knife which bar is resting on the spindle carrying the log keeps the cutting edge of the

scarfing knife at the same relative angle to the circumference of the log during the whole period of its reduction in size, substantially as and for the purpose specified. 3rd. As an improved bearing to receive the thrust upon the spindle R, a plate b, having a series of holes d, made through it to receive the ball e, in combination with the plates a and c, located on each side of the plate b, and held in contact with the balls e, substantially as and for the purpose specified. 4th. A pressure bar H, supporting the scarfing and scoring knives and suitably supported in slides, the combination of a worm rod extending longitudinally parallel with the pressure bar and connected to the pressure bar by means of worm wheels, substantially as and for the purpose specified. 5th. A pivoted forked rod D<sup>1</sup>, connected to the movable clutch arranged to connect the feed rod X, to the driving gear, in combination with the dog Z, held on the rock shaft F<sup>1</sup>, crank G<sup>1</sup>, and rod H, having a collar J, fixed to it, substantially as and for the purpose specified. 6th. In combination with a veneer machine, of a cross cut knife arranged to cut of the veneer at predetermined periods, substantially as and for the purpose specified. 7th. A cross head arranged to support a knife, and provided with a bearing box arranged to fit on to the eccentric portion of a driving shaft, in combination with mechanism connected to the said driving shaft, and arranged to impart a longitudinal movement to the cross head simultaneously with the cross motion imparted to it by the eccentric portion of the shaft, substantially as and for the purpose specified. 8th. A beam 10, having jaw shaped ends 11, supported by the pin 13, and having a strip of wood 21, fixed to the bottom side, in combination with a cross head 6, carrying a knife 7, and provided with pivoted blocks 14, fitting into the jaws of the ends 11, substantially as and for the purpose specified. 9th. A pulley 25, loosely journalled on the shaft 5, and having a projecting rim into which the half rims 26 are loosely placed, a spider 29 fixed to the shaft 5, and to which the rims 26 are adjustably connected, springs 30 connecting the rims 26 and flies 34 connected to the arms 33, in combination with the arms 35, each connected at one end to a fly 34, and at the other end to a hollow sleeve 34, spring 38 connected at one end to a sleeve 37, and at its other end to the collar 39, and arm 40, connected to the sleeve 37, and working in connection with the movable stop 41, arranged substantially as and for the purpose specified. 10th. A clutch mechanism arranged as described within the rim of a pulley fixed to the driving shaft, an arm 40 connected to the said clutch mechanism and held by a stop 41, in combination with mechanism arranged to remove the stop 41 from the arm 40, by the action of the veneer leaving the machine, substantially as and for the purpose specified. 11th. A clutch mechanism arranged as described within the rim of a pulley fixed to the driving shaft, an arm 40 connected to the said clutch mechanism and held by the stop 41, in combination with the arm 48, fixed to the horizontal rod 47, connected to the trigger 47, which is actuated by the veneer 45, substantially as and for the purpose specified.

**No. 42,425. Machine for Making Heel Stiffeners.**

(*Machine à renforcer les talons de chaussures.*)

Louis Côté, St. Hyacinthe, Quebec, Canada, 27th March, 1893; 18 years.

*Claim.*—1st. In a machine for forming heel stiffeners, the combination, with the frame A, provided with the mould socket H<sup>2</sup>, the mould H<sup>1</sup>, fitted to and movable in said socket, the sleeve shaft E<sup>1</sup>, mounted in bearings in said frame, the shaft E, mounted in said sleeve so as to be revoluble therewith and movable endwise therein, and provided with the head e<sup>1</sup>, and the stud e<sup>2</sup>, and the spheroidal former H, provided with an axial bore to receive said shaft E, and with the L-shaped groove e<sup>3</sup>, to receive the stud e<sup>2</sup>, substantially as described. 2nd. In a machine for forming heel stiffeners, the combination, with a former divided longitudinally into two parts, and constructed and arranged to be movable about the fulcrum at the heel end of said former, and a double faced cam for moving the free ends of said parts away from each other, of two pivoted side moulds each provided with a curved rod set therein near one end, a spring on said rod, and a pivoted plate having a slotted upright portion at its free end, to serve as a bearing for the free end of said curved rod, and an abutment for said spring. 3rd. In combination, with the divided former P, provided with a lip or lips on its under side, and a revolving wedge like cam for moving the free end of the two parts of said former away from each other, a pair of pivoted side moulds arranged one upon each side of said former, and each provided with a lip extending about four fifths more or less of its length from its inner end, and adapted to pass beneath said former to turn portions of the flange on the side of the stiffener, a segmental plate pivoted to the underside of said mould, at or near its front or outer end, and constructed and arranged to serve as an extension of said flange turning lip, a spring the tension of which tends to maintain said plate in its normal position, a stop to limit the movement of said plate in the direction which it is pressed by said spring, and a reciprocating notched plate for turning the heel portion of the stiffener flange, and constructed and arranged to abut against and move said segmental plate about its axis against the tension of said spring, when said flange turner is moved inward to turn the heel portion of the flange. 4th. In combination, with the divided former P, the two parts of which are fulcrumed at or near the heel end thereof and a wedge like cam for moving the free ends of said two parts away from each other, the pivoted side moulds O, O, each provided with

an adjustable anti-friction roll to bear against the side of said former at or near its movable end. 5th. The combination of the former P, divided longitudinally into two parts, and fulcrumed at or near the heel end thereof, and provided at or near their opposite ends with anti-friction rolls, and a wedge like cam constructed and arranged to act upon said rolls to force the free ends of the two parts of said former asunder, substantially as described. 6th. The combination of the former P, divided longitudinally into two equal halves, each provided in its inner face with a longitudinal recess; a vertical semi-circular rib on the inner face of one of said halves at its heel end; a correspondingly shaped groove or recess in the inner face of the other half of its heel end to receive said rib; a leaf spring secured by one end to each of said halves within said longitudinal recess and having formed in its other end a circular eye; the table J, and a stud set in said table and projecting upward therefrom through the eyes in said two springs, substantially as described. 7th. In a machine for forming heel stiffeners, the combination with the longitudinally divided former P, and the pivoted side moulds O, O, of the notched flange turning plate made in two parts, one above the other, and having their contiguous faces inclined to a horizontal plane and serrated or roughened, and any suitable means of securing said parts together and to their carrying arm, whereby the upper or working face of said plate may be adjusted to a higher or lower level. 8th. The combination of the divided former P, the two side moulds O, provided with lips to pass beneath the former to turn the side portions of the flange or heel seat, a cam for vibrating the two parts of the former and the two side moulds, and a holding down bar for preventing the two parts of the former from being lifted when the flange or heel seat is being turned. 9th. The combination with the divided former P, the pivoted side moulds O, O, the notched flange turning plate S, and its carrier arm R, of the horizontally reciprocating rod T, provided with the notch l, and the curved slot T', the constantly revolving crank K, k, and the latch lever g, pivoted to said arm R, and adapted to engage the notch l, in the rod T, substantially as described. 10th. The combination of the notched flange turning plate S, its carrier arm R, the rod T, provided with the notch l, and the slot T', the crank K, k, the latch lever g, and the adjustable segmental extension g<sup>2</sup>, of said lever. 11th. In combination, with the divided former P, the side moulds O, O, provided with flange turning lips, and the notched reciprocating flange turning plate S, the spring plate V, arranged beneath the heel portion of the former; and mechanism having provision for raising and lowering the movable end of said plate, substantially as and for the purposes described.

**No. 42,420. Nut Lock.** (*Arrêtée-écrou.*)

Daniel Rice, Joseph S. Kirk and Allen Rice, all of Canton, Ohio, U.S.A., 27th March, 1893; 6 years.

*Claim.*—The combination of the bolt A, provided with the screw threaded portion, the screw threaded nut B, provided with the inclined notches d, the spring washer C, provided with the base or foot a, and the divisions b, and c, formed of different lengths, and the division b, formed thinner than the division c, and the side extension b', located upon the division b, and extending above the periphery of the nut B, substantially as and for the purpose specified.

**No. 42,427. Trellis for Hop and Grape Vines.**

(*Trellis pour vignes de houblon et raisin.*)

Joseph Tweddle, Stoney Creek, assignee of George Russell, Hamilton, Ontario, Canada, 27th March, 1893; 6 years.

*Claim.*—1st. In a hop or grape vine trellis consisting of the combination of the posts, wires attached thereto at right angles on the top and anchored, braces projecting from the sides of the posts to the wires, diagonal brace wires securing each third post at their tops, all constructed substantially as and for the purpose specified. 2nd. In a vine trellis the combination of corner posts A, intermediate side posts B, interior posts B', crossed wires E, F, secured on the tops of the posts, substantially as and for the purpose specified. 3rd. In a vine trellis, the combination of the corner posts A, intermediate side posts B, interior posts B', crossed wires E, F, secured on the tops of the posts, diagonal top brace wires d, d, braces H, all constructed and arranged substantially as specified. 4th. In a vine trellis, the combination of the corner posts A, intermediate side posts B, interior posts B', crossed wires E, F, diagonal wires d, d, braces H, wire tightener J, recessed and guttered brick D, all constructed substantially as and for the purpose specified.

**No. 42,428. Starting Gear for Rotary Machines.**

(*Mécanisme pour mettre en mouvement les machines rotatoires.*)

John Head and Henry O'Kelly Webber, both of King Williamstown, Cape Colony, South Africa, 27th March, 1893; 6 years.

*Claim.*—1st. The starting gear for high speed rotary machines consisting in the combination with the bevel gear for driving alternately two or more such machines of an independent bevel wheel K adapted to gear simultaneously with two or more driving spindle cones and provided with disconnecting hand gear, substantially as set forth. 2nd. In two or more high speed rotary machines the combination with the coned driving spindles, their driving wheels B B', sliding shafts S S', levers H, L, L', L<sup>2</sup>, and hand gear G, G', for operating same, of starting wheel K provided with operating

gear, all substantially as and for the purposes set forth. 3rd. A foot bearing for the driving spindles of high speed rotary machines consisting in the combination with the spindle with pointed foot of collar and cup bearings provided with a higher level lubricant receiver and pipe, substantially as shown for the purpose specified.

**No. 42,429. Process of Obtaining Chlorates of the Alkalies by Electrolysis.** (*Procédé pour obtenir par l'électricité du chlorate des alcalis.*)

William Taylor Gibbs and Stanislaus Paschal Franchot, both of Buckingham, Quebec, Canada, 27th March, 1893; 6 years.

*Claim.*—1st. A process of obtaining chlorate from an alkali or alkaline earth by electrolysis consisting in subjecting a solution of its chloride to the action of an electric current in a cell having an oxide of copper kathode until about one half of the chloride in said solution is decomposed and converted into chlorate, drawing off the solution into crystallizing tanks and allowing it to cool and crystallize, then draining off the remaining liquor making up its strength with fresh chloride and returning it into the cell that has had its kathode removed, washed, dried and reoxidized, substantially as set forth. 2nd. As part of a process for the manufacture of chlorate, of one of the alkalies or alkine earths by electrolysis, the subjecting of a solution of chloride of said alkali to the action of an electric current in a cell having a kathode composed of an oxide which readily yields up its oxygen in the presence of nascent hydrogen, substantially as set forth. 3rd. As part of a process of obtaining the chlorate of one of the alkalies or alkaline earths by electrolysis, the combustion of the hydrogens in the cell by the use of a kathode composed of a substance carrying oxygen which is yielded up in the presence of nascent hydrogen, substantially as set forth. 4th. A process of manufacturing chlorate of potassium by electrolysis consisting in subjecting a solution of chloride of potassium to the action of an electric current in a cell having an oxide of copper kathode until about one-half of the potassium chloride in said solution is decomposed and converted into potassium chlorate, drawing off the solution into crystallizing tanks and allowing it to cool and crystallize, then drawing off the remaining liquor making up its strength with fresh chloride and returning it into the cell that has had its kathode removed, washed, dried and reoxidized, substantially as set forth.

**No. 42,430. Setting Device for Saw Mill Carriages.** (*Appareil pour donner la voie aux châssis de scieries.*)

James H. Dodds, Eau Claire, Wisconsin, U.S.A., 27th March, 1893; 6 years.

*Claim.*—1st. In a setting device for saw mill carriages, the combination with a set shaft, of an operating wheel provided in its opposite sides with annular grooves, the clutch levers arranged in proximity to the opposite sides of said wheel and provided with clutch studs to engage the said grooves, the discs or rotary plates provided with studs to engage slots in the free ends of said clutch levers, and means to rotate said discs alternately in opposite directions, substantially as specified. 2nd. In a setting device for saw mill carriages, the combination with a set shaft, of an operating wheel provided with opposite annular grooves, the opposite clutch levers provided with clutch studs to engage said grooves, the opposite rotary discs provided with studs to engage slots in the free ends of said clutch levers, and the crank shaft provided with a hand lever and connected to said discs by oppositely extending operating bars, substantially as specified. 3rd. In a machine of the class described, the combination with a set shaft, operating wheel, clutch mechanisms and a crank shaft connected to said clutch mechanism, of an operating lever, a notched sector, and a stop A<sup>1</sup>, provided with a tooth D<sup>1</sup>, and a retaining spring to hold the tooth in engagement with the desired notch, substantially as specified. 4th. In a setting device for saw mill carriages, the combination with a set shaft, of an operating wheel, the opposite rotary discs, means to operate said discs in opposite directions, the opposite clutch levers provided at one end with clutch studs to engage annular grooves in opposite sides of the wheel and connected at their free ends, respectively, to the said discs, and the stop pins arranged adjustably in the path of that end of each clutch lever which bears the clutch stud, whereby the lateral movement of said end of the lever is limited, substantially as specified. 5th. In a setting device for a saw mill carriages, the combination with a set shaft, of an operating wheel, opposite rotary discs, means to rotate said discs in opposite directions, clutch levers connected to the discs and provided with clutch studs to engage annular grooves in opposite sides of said wheel, the movable bands arranged between the discs and the adjacent sides of the wheel, the stop pins carried by said bands and arranged in the path of the clutch ends of said levers, and means to adjust said bands to bring opposite stop pins in contact with the clutch levers, substantially as specified. 6th. In a setting device for saw mill carriages, the combination with a set shaft, of an operating wheel, the opposite rotary discs, means to rotate said discs in opposite directions, movable bands arranged between the opposing surfaces of the discs and the wheel, clutch levers loosely connected at one end to the discs and provided at the opposite end with clutch studs to engage annular grooves in opposite sides of the wheel, stop pins adjustably mounted in said bands, eccentrics rotatably mounted in bearings in the discs, and slide guides carried by the bands and engaged by said eccentrics, substantially as specified.

**No. 42,431. Car Coupler. (Attelage de chars.)**

Erasmus Ripley Trammell, Lakeland, Florida, U.S.A., 28th March, 1893; 6 years.

*Claim.*—The combination, with a twin jaw car coupling, of a depending rectangular stirrup frame rigidly connected with the draw head of the coupler, and comprising vertical sides arranged at the sides of the draw head and embracing the same and secured thereto, said sides having their upper ends bent inward forming supporting lugs arranged on the top of the draw head, and a transverse bottom piece formed integral with the sides and arranged beneath the knuckle of the coupling, substantially as and for the purpose described.

**No. 42,432. Fibre Preparing Machine.**

(Machine pour préparer la fibre.)

John Lius Acosta, New York, State of New York, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. In a fibre preparing machine, the combination of two sets of fibre carrying chains arranged one after the other but offset in different planes, fibre cleaning devices disposed on opposite sides of said chains, and obliquely disposed chains between the two sets of carrying chains to guide the fibres from the first set of chains to the second set, substantially as shown and described. 2nd. In a fibre preparing machine, the combination of two fibre cleaning wheels having their axes parallel but offset in different planes, and having their peripheries overlapping two sets of fibre carrying chains offset in different planes, and obliquely disposed chains between the two sets of carrying chains to guide the fibres from the first set of chains to the second set, substantially as shown and described.

**No. 42,433. Sling Carrier.**

(Embrelage pour monte-charge.)

Samuel George Emerson and William Francis Campbell, both of Tweed, Ontario, Canada, 28th March, 1893; 6 years.

*Claim.*—1st. In a carrier, the dog S, with arms P, to engage with lugs on each side of the pulley D, substantially as and for the purpose hereinbefore set forth. 2nd. In combination, with a carrier, the draft wheel D, with lugs on each side to engage with the arms P, on the dog S, substantially as and for the purpose hereinbefore set forth. 3rd. In a carrier, the combination of a dog S, having arms P, and lugged wheel D, substantially as and for the purpose hereinbefore set forth. 4th. In a carrier, the combination of the lugged draft pulley D, dog S, swivel r, and the stop block u, substantially as and for the purpose herein set forth.

**No. 42,434. Draw Gear for Railway Cars.**

(Train de char pour chemin de fer.)

Thomas Ashley Bissell, Buffalo, New York, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. The combination, with the car frame and the laterally moving draw bar, of longitudinal centering springs connected at their inner portions to the car frame, and bearing with their outer portions against opposite sides of the draw bar, and transversely movable supports guided on the car frame and attached to the free outer portions of the centering springs, substantially as set forth. 2nd. The combination with the car frame and the laterally movable draw bar of longitudinal centering springs attached at their rear ends to the car frame and bearing with their front ends against the draw bar, and laterally movable loops guided in the car frame, and embracing the front portions of the centering springs, substantially as set forth. 3rd. The combination with the car frame, and the laterally movable draw bar, of longitudinal centering springs, bearing with their front portions against opposite sides of the draw bar, and having their rear ends adjustably attached to the car frame, and stops arranged on the car frame between the ends of the springs, against which the springs abut with their outer sides, substantially as set forth. 4th. The combination, with the car frame, and the laterally movable draw bar, of laterally adjustable bolts arranged on the car frame, longitudinal centering springs attached at their rear ends to said adjustable bolts, and bearing with their front ends against opposite sides of the draw bar, and stops arranged on the car frame between the ends of the springs against which the springs abut, substantially as set forth. 5th. The combination with the car frame and the laterally movable draw bar, of laterally adjustable bolts arranged on the car frame, longitudinal centering springs attached at their rear ends to said bolts and bearing with their front ends against opposite sides of the draw bar, brackets secured to the car frame and having transverse eyes or openings, loops embracing the front portions of the centering springs, and having guide bolts which slide in the eyes of said brackets, and a strap secured to the car frame between the ends of the centering springs and having upright side bars against which the springs bear, substantially as set forth.

**No. 42,435. Washing Machine. (Machine à blanchir.)**

Lars Grondahl, Red Wing, Minnesota, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. The combination of a washing machine frame, having uprights at the corners and brackets secured to its rear, a frame B,

pivoted to said brackets, a crank shaft carried by the frame B, and having bearings  $b^2$ , on said shaft, and strips  $b^3$ , secured to said bearings, with a notched strip G, secured to the frame of the machine, substantially as described. 2nd. The combination of a washing machine frame, having uprights at the corners and brackets secured at its rear, a frame B, pivoted to said brackets, a crank shaft and pounders carried by the frame B, a rod  $B^2$ , secured to the frame B, and a catch H, pivoted to the frame of the machine and adapted to retain the frame B, substantially as described. 3rd. The combination of a washing machine frame having a multiple crank shaft, a series of pounders connected to said shaft, a tank adapted to receive all the pounders, and a secondary tank within the first tank and adapted to receive less than all the pounders, substantially as described. 4th. The combination of a washing machine frame, having a multiple crank shaft, a series of pounders, connected to said shaft, with a removable tank located vertically under the pounders, substantially as described.

**No. 42,436. Fastener for Egg Cases, etc.**

(Fermeture pour boîtes à œufs.)

Cephas Barker Murley and John Andrew Ritchie, both of Charlottetown, Prince Edward Island, Canada, 28th March, 1893; 6 years.

*Claim.*—1st. The metal plate C, in combination with the screw D, as a fastener for egg cases or other packages, as described, substantially as and for the purposes hereinbefore set forth. 2nd. The metal plate C, made of spring steel, with a push button, instead of a screw D, as shown, substantially as and for the purposes hereinbefore set forth.

**No. 42,437. Cash Carrier. (Chien de magasin.)**

Noah Dillenbeck and Norman Elford Dillenbeck, both of Syracuse, New York, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. A carrier mechanism, consisting in the combination of an oscillatory and eccentrically pivoted weight, a carrier, and means to transmit the force, exerted by the oscillation of the weight, to the carrier to give it the impulse along the wire trackway. 2nd. An oscillating and eccentrically pivoted weight, a propelling arm connected thereto, a slide connected to said propelling arm, and means to detachably connect the carrier to said arm. 3rd. The combination with the oscillatory eccentrically pivoted weight, and the propelling arm pivotally connected to the rim of said weight, and also connected to a slide, of the slide, a carrier detachably connected to said slide, and means to set the weight and arm in their normal positions, and to release them to give the carrier its impulse along its trackway.

**No. 42,438. Cattle Guard. (Garde-bétail.)**

John J. Callaghan and Albro R. Horn, both of Stephen's Point, Wisconsin, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. A cattle guard section extending longitudinally of a track and consisting of a single sheet of metal and composed of a series of vertical portions and a series of inclined portions, the vertical portions being secured to similar faces of the ties, and the inclined portions each extending upward from the base of one tie to the top and across the adjacent tie, substantially as described. 2nd. A cattle guard section extending longitudinally of a track and consisting of a single sheet of metal and composed of a series of vertical portions and a series of inclined portions, and a series of curved portions connecting the upper ends of the vertical and inclined portions and presenting a broad smooth surface to avoid injuring animals, substantially as described. 3rd. A cattle guard section constructed of a single sheet of metal and consisting of a series of inclined portions provided with a longitudinal corrugations, a series of vertical portions arranged to be secured to similar faces of cross ties, and a series of curved portions connecting the upper ends of the inclined and vertical portions, substantially as described.

**No. 42,439. Shaft Tug. (Boucleteau de limonière.)**

John Grammer, Houston, Virginia, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. In a shaft tug, the combination of an inner and outer portion hinged together at their lower ends, said inner portion being rigid and provided with the side bars 6, adapted to receive between them the harness strap, an upper cross bar 7, having a buckle tongue, and a lower cross bar 8, situated between said side bars and adapted to engage the inner side of said strap, substantially as set forth. 2nd. In a shaft tug, the combination of an inner and outer portion hinged together at their lower ends, said inner portion being rigid and provided with side bars 6, adapted to receive between them the harness strap, an upper cross bar 7, having a buckle tongue, a lower cross bar 8, situated between said bars and adapted to engage the inner side of said strap, and a third cross bar z, above the bar 7, substantially as set forth. 3rd. In a shaft tug, the combination of an inner and outer section hinged together at their lower ends, the outer section being slotted to form the stop 15, for supporting the said section in position to sustain the shaft, and the pin or offset p, carried by said inner section and situated in said slot, substantially as set forth. 4th. In a shaft tug, the combination of an inner and outer section hinged together at their lower ends, the buckle tongue

9, mounted upon the inner section and having its free end adapted to be secured between said sections, and a fastening device for the latter, substantially as set forth. 5th. In a shaft tug, the combination of an inner and an outer section hinged together at their lower ends, the cross bars and tongue 9, for attaching the inner section to the harness, the catch 20, for securing the outer section, and the rigid pin 24, substantially as set forth.

**No. 42,440. Snap and Buckle. (Boucle.)**

Daniel W. Simmonds, Cave Spring, Georgia, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. The herein described improved snap hook and buckle, the same consisting of the snap hook proper, having the integrally formed buckle frame at its rear end, said buckle frame having its opposite side bars widened toward their rear ends, a pair of parallel cross bars in substantially the same vertical plane elliptical in cross section connecting the rear corners of the side bars and converged transversely toward each other at their rear ends thereby forming a passage way flared toward its inner end or mouth, forming biting edges, an intermediate cylindrical bar connecting the side bars between their ends and in front of the passage way, and the rearwardly projecting buckle tongue loosely hung upon the intermediate cross bars and adapted at its free end to overlap and lie upon the upper end cross bar, substantially as specified.

**No. 42,441. Electrical Measuring and Current Indicating Instrument. (Instrument de mesure et indicateur de courant électrique.)**

James J. Wood, Fort Wayne, Indiana, U.S.A., 28th March, 1893; 6 years.

*Claim.*—1st. A current direction indicator, consisting of the combination of an electro magnet traversed by the current, a permanent magnet pivoted within the inductive influence of the electro magnet, and having a normal tendency to assume a position transverse to the lines of force of the electro magnet, and a tell-tale connected to and operated by said permanent magnet, whereby it moves to one side when the current passes in one direction, and to the opposite side when it passes in the other direction. 2nd. A current direction indicator, consisting of the combination of an electro magnet traversed by the current, a permanent magnet pivoted within the inductive influence of the electro magnet, and having a normal tendency to assume a position transverse to the lines of force of the electro magnet, and a tell tale or indicating plate connected to and moved by said permanent magnet whereby it moves to one side when the current passes in one direction, and to the opposite side when it passes in the other direction, and a stationary dial plate or screen having an opening in front of said plate through which the indication carried by the plate may be seen. 3rd. A current direction indicator, consisting of the combination of an electro magnet traversed by the current, a permanent magnet pivoted within the inductive influence of the electro magnet, a stationary dial plate or screen, and a tell-tale or indicating plate connected to said permanent magnet arranged behind an opening in said screen, having a normal tendency to assume a certain position when at rest, and bearing upon its surface a distinctive mark or colour not normally visible through said opening, whereby when a current is passed through the electro magnet said permanent magnet swings to one side or the other, according to the direction of the current, and thereby moves said indicating plate and in the position indicating an incorrect connection of the terminals exposes a distinctive mark or colour on said plate behind the opening therein. 4th. The combination, with an electric measuring instrument, of an indicator for showing whether the terminal connections are correctly made, consisting of a permanent magnet pivoted within the inductive influence of the electro magnetic member of the instrument, having a normal tendency to assume a position transverse to the lines of force in said electro magnetic member, and a tell tale connected to and operated by said permanent magnet, whereby it moves to one side when the terminals are rightly connected, and to the opposite side when they are wrongly connected. 5th. The combination, with an electric measuring instrument, having a dial plate D, with an opening through it, of an indicator consisting of a counter weighted disc F, pivoted behind said opening, and a permanent magnet G, attached to said disc and arranged within the inductive influence of the electro magnetic member of the instrument. 6th. In an electric measuring instrument, comprising an electro magnet, its inclosing coil, and a repellant armature, the construction of said magnet with its core subdivided into two sections magnetically separated or insulated, whereby upon the cessation of the magnetizing current, the like magnetic poles of the two sections mutually repel each other, and thereby assist in the suppression of residual magnetism whereby the instrument is rendered more sensitive.

**No. 42,442. Sidewalk. (Trottoir.)**

Horace Brunson, Chicago, Illinois, and Clifford Charley Coulter, Mansfield, Ohio, both in the U.S.A., 28th March, 1893; 6 years.

1st. A sidewalk block consisting of a mass of cement or similar material having embedded therein a rigid frame work consisting of the side and end pieces, the cross pieces extending centrally between the side and end pieces, and the inwardly projecting flanges extending from the base of the side and end pieces, the edges of the frame and side pieces being bevelled, substantially as described.

**No. 42,443. Lath. (Latte.)**

Mary Brown, William E. Casson and John Ernest Casson, assignee of Squire Toney, all of Viroqua, Wisconsin, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. A wooden lath or sheathing of less thickness at its centre than at its edges, and provided with a straight surface on one side, the straight surface having channels or recesses formed therein, substantially as set forth. 2nd. As an improved article of manufacture, a plastering strip or lath having a concave back, a concave edge, a straight edge, and intermediate rectangular channels or recesses *b*, substantially as shown and for the purpose set forth.

**No. 42,444. Nut. (Ecrou.)**

The National Elastic Nut Company, assignee of Justin Hurbert Burdick, both of Milwaukee, Wisconsin, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. A nut blank, consisting of a strip of metal, the ends of which are formed with integral extensions, one parallel at its upper edge, with the upper edge of said strip, while the lower edge of the other extension is parallel with the lower edge of said strip, and the inner edges of said extensions being formed on oblique lines extending from a point below to a point above the longitudinal centre of said strip. 2nd. A nut provided with a slit extending from the top of said nut to a point below the centre thereof, and thence laterally to a point above said centre, and thence downward to the bottom of said nut, substantially as set forth.

**No. 42,445. Pump. (Pompe.)**

The Cleveland Faucet Company, assignee of Edward Harding Weatherhead, both of Cleveland, Ohio, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. In an apparatus for pumping liquids by water power, the combination of a liquid chamber connected in use with a cask or liquid supply and provided with a movable piston head for one of its ends, a water chamber connected in use with a water supply under pressure and having the said movable piston head for one of its ends, said chambers being arranged on an axial line and of equal diameter, and means for moving the piston head in that direction that increases the size of the liquid chamber to cause the liquid to flow into it, substantially as described. 2nd. In an apparatus for pumping liquids by water power, the combination of a primary water chamber connected in use with a water supply under pressure, a liquid chamber connected in use with a cask or liquid supply, and a secondary water chamber connected in use with a water supply under pressure, said chambers being arranged on an axial line, substantially as described. 3rd. In an apparatus for pumping liquids by water power, the combination of a primary water chamber connected in use with a water supply under pressure, a liquid chamber connected in use with a cask or liquid supply, and provided with a movable piston head for one of its ends, and a secondary water chamber connected in use with a water supply under pressure and provided with said last mentioned movable piston head for one of its ends, said chambers being arranged on an axial line, substantially as described. 4th. In an apparatus for pumping liquids by water power, the combination of a primary water chamber connected in use with a water supply under pressure and provided with a movable piston head for one of its ends, a liquid chamber connected in use with a cask or liquid supply, and provided with a movable piston head for one of its ends, and a secondary water chamber connected in use with a water supply under pressure and provided with said last mentioned movable piston head for one of its ends, said movable piston heads being connected together and moving in unison, and said chambers being arranged on an axial line, substantially as described.

**No. 42,446. Friction Clutch. (Embrayage à friction.)**

The William Hamilton Manufacturing Company, assignee of George Munro, both of Peterborough, Ontario, Canada, and Hans P. Clausen, of Milwaukee, Wisconsin, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. In a friction clutch, the combination with a friction wheel A, having a laterally projecting flange *a*, of a clutch hub C, having spoke arms C<sup>1</sup>, and sleeved on the clutch shaft B<sup>1</sup>, a T-shaped lever E, pivoted at the intersection to said spoke arms, shoes D, D<sup>1</sup>, pivoted to the horizontal arm of said lever E, and engaging frictionally with the flange *a*, on opposite sides thereof, a hub ring G, provided with radial lugs *g*, and sleeved on said hub C, and a lever F, fulcrumed to said lugs and having a knuckle joint connection with the vertical arm of the lever E, and pivotally connected by links L, to the clutch collar H, sleeved on the clutch shaft B<sup>1</sup>, as and for the purpose set forth. 2nd. In a friction clutch constructed as set forth, the combination with the clutch hub C, of the rings K, and G, having serrated meeting faces *r* and *s* and sleeved on said hub, the ring G, having radial lugs *g*, and the ring K, rotatively adjustable on said hub and fixed by a screw *k*, as described, for the purpose set forth. 3rd. In a friction clutch, the combination with the wheel or pulley A, having a laterally projecting flange *a*, and a grip or clutch mechanism comprising a hub C, having radial arms C<sup>1</sup>, radial moving jaws or friction shoes D, D<sup>1</sup>, carried by said arms

and levers E, fulcrumed to said arms and connected pivotally to said shoes so as to close against the opposite sides of said flange A, of a collar ring G, adjustable axially upon the clutch hub C, and levers F, fulcrumed to said collar ring, so as to connect with and actuate said levers, substantially as and for the purpose set forth. 4th. In a friction clutch, the combination of a collar or ring G, adjustable axially on the clutch hub C, levers F, fulcrumed to said collar, a radially movable collar H, sleeve on the clutch shaft, and links L, connecting said collar and levers, whereby looseness and wear are taken up and uniform engagement of the friction surfaces is obtained, substantially as set forth.

**No. 42,447. Gas Burner. (Bec à gaz.)**

Arthur Spear and Edward F. Angell, both of Chicago, Illinois, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. In combination with a gas burner, a thermostatic bow having one end secured to the side of the burner and arched above the tip thereof, a pin valve secured with the free end of said bow, a transverse aperture through which the pin valve slides, said aperture intersecting the supply way of the burner, and a pivoted cam lever adapted when turned to thrust the bow outward, whereby to move the valve and cause its port to register with the supply way, said cam lever adapted when released to drop down so as to release the bow, substantially as described. 2nd. The combination with a gas burner having a supply way, and a transverse aperture intersecting said supply way, a thermostatic bow having one end secured to the burner and the other to a pin valve adapted to slide in said aperture, said pin valve being normally in position to close said aperture, manually operated means independent of the supply cock for moving the pin valve to cause its port to register with the supply way, said bow when less heated because of excess pressure of gas being adapted to contract and move the pin valve so as to partially close the port thereof whereby the quantity of gas consumed is regulated, substantially as described.

**No. 42,448. Thermostat. (Thermostat.)**

Emil C. C. Krough, Stephen D. McGowen and Terrence B. McGowen, all of Monmouth, Illinois, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. The combination with the temperature actuating contact of a thermostat, of a longitudinally movable contact rod adapted to be pressed into engagement with the first named contact, substantially as described. 2nd. The combination with the temperature actuating contact of a thermostat, the longitudinally movable rod forming a contact held normally away from the other, the adjusting cam, the shaft carrying the same adapted to be moved longitudinally to force the rod contact against the other contact, substantially as described. 3rd. In combination with the temperature actuating contact of a thermostat, held normally away from the other, the adjusting cam, the longitudinally movable shaft carrying said cam, and the locking device to hold said shaft from rotation when moved longitudinally, substantially as described. 4th. In combination with a temperature actuating contact of a thermostat, the longitudinally movable contact rod held normally from the other, the adjusting cam, the longitudinally movable shaft carrying said cam, the toothed wheel to hold said shaft from rotation, and the spring pressed collar to engage said pawl, substantially as shown and described. 5th. In combination with the temperature actuating contact of a thermostat, the longitudinally movable contact rod forced normally from the other, the adjusting spiral cam to move said rod, and the stop to limit rotary movement of the cam, substantially as described.

**No. 42,449. Spinning Spindle. (Broche à filer.)**

Leonard W. Huyck and Ethan Allen, both of Rochester, New York, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. The combination, with the spindle, of the yarn holding jaws thereon, the spring for holding said jaws normally closed, and a device mounted on the spindle support arranged to be moved, so as to co-operate with and separate said jaws when desired, against the tension of the spring without stopping the spindle, substantially as described. 2nd. The combination, with the spindle, of the yarn holding jaws thereon, the spring for holding them normally closed, and the blade adapted to co-operate with said jaws to separate them against the tension of the spring, substantially as described. 3rd. The combination, with the spindle, of the yarn holding jaws thereon having the bevelled edges, the spring for holding them normally closed, and the blade mounted on the spindle support for co-operating with and separating said jaws, substantially as described. 4th. The combination, with the spindle, of the stationary jaw thereon, and the movable spring operated jaw co-operating therewith, the former having the bevelled edges, substantially as described. 5th. The combination, with the spindle, of the removable sleeve secured thereon having the stationary jaws and the movable spring pressed jaw, said jaws having the bevelled edges, substantially as described. 6th. The combination, with the spindle, of the sleeve secured thereon having the spring bobbin

holding fingers engaging the spindle at the centre and having the free edges for engaging the bore of a bobbin, substantially as described. 7th. As an article of manufacture, a yarn holder adapted to be applied to a spindle, consisting of a sleeve having the jaws thereon, one being provided with the bevelled edge, and a spring for holding the jaws together, substantially as described. 8th. As an article of manufacture, a yarn holder adapted to be applied to a spindle, consisting of a sleeve having the stationary jaw thereon, the sliding jaw, a spring for moving the latter, and a clamping device for securing said sleeve removably to a spindle, substantially as described. 9th. As an article of manufacture, a yarn holder adapted to be applied to a spindle, consisting of a sleeve split at one end provided with a stationary jaw, a movable jaw sliding on the sleeve, a stationary collar, a spring secured between said collar and the movable jaw, and a set screw for securing the collar and clamping the sleeve to the spindle, substantially as described. 10th. As an article of manufacture, a yarn and bobbin holder consisting of a sleeve provided at one end with spring arms for engaging a bobbin, the yarn holding jaws below said arms, a spring for operating upon one of them, and clamping devices for securing said sleeve to the spindle, substantially as described.

**No. 42,450. Sash Balance.**

(Contre-poids de croisée.)

James McArthur, assignee of Samuel Jenkinson, both of Rochester, New York, U.S.A., 29th March, 1893; 6 years.

*Claim.*—1st. The combination, with the front plate, and the casing thereon, of the drum located entirely within the casing, the tape connected thereto, the coverplate connected to the casing, having the arms projecting inside the drum, and the spring connected to said plate at its outer end, and to the drum at its inner end, substantially as described. 2nd. The combination, with the front plate and the rearwardly projecting plate thereon, a second plate extending parallel with the latter, and a screw pin connecting them, and having a shoulder of the drum journalled on the pin and arranged with one of its sides in contact with one of the plates, of a spring for rotating it and a spring arranged between the shoulder on the pin and the drum, substantially as described. 3rd. The combination, with the front plate and the rearwardly projecting plate thereon, having the central boss, a second plate extending parallel with the other, and a screw pin connecting the plates, having a shoulder, of the drum journalled on the pin and boss and arranged between the plates, a spring located between the shoulder on the pin and the drum, and a spring connected to one of the plates and to the drum for rotating the latter, substantially as described. 4th. The combination, with the front plate, the rearwardly projecting plate thereon having the central boss, and the screw pin having the shoulder, of the drum journalled on said boss and pin, a spring arranged between the shoulder on the pin and the drum for pressing the side of the latter into engagement with the plate, and a spring for rotating the drum, substantially as described. 5th. The combination, with the front plate, the rearwardly projecting plate thereon, the screw pin having the shoulder, the drum having the slotted sleeve or hub, and the collar in it, of the cover plate having the arms, the spring connected thereto at one end and at the other to the drum, and the spring between the collar on the drawer and the shoulder on the screw pin, substantially as described. 6th. The combination, with the front plate, the rearwardly extending plate, and the drum having the peripheral flange and the central slotted hub, of the cover plate having the arms projecting inside the drum, a spring connected to one of said arms at one end and to the hub of the drum at the other, and a tape adapted to be secured to the drum, substantially as described. 7th. The combination, with the front plate, rearwardly projecting plate, and cover plate, of the drum arranged to engage one of the side plates, the spring for rotating it, and a spring arranged to press the drum into contact with the plate it engages, substantially as described.

**No. 42,451. Method of Producing Colouring Matter from Logwood. (Production de teinture du bois de campêche.)**

William J. Matheson & Co., New York, State of New York, assignee of Peter T. Austin, New Brunswick, New Jersey, both in the U.S.A., 29th March, 1893; 12 years.

*Claim.*—1st. In the art of making logwood extract the improvement which consists in an adding to logwood extract an alkaline nitrite in the presence of water and causing a reaction between the nitrite and the extract, substantially as described. 2nd. In the art of making logwood extract the improvement which consists in adding to logwood extract an alkaline nitrite in the presence of water causing a reaction between the nitrite and the extract and evaporating the product to dryness, substantially as described. 3rd. As a new article of manufacture a colouring matter derived from logwood extract by the incorporation therewith of an alkaline nitrite and characterized by the fact of its being a friable solid soluble in cold water and rapidly soluble in hot water, substantially as described.



**CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO THE FOLLOWING PATENTS.**

2911. HENRY W. ATWATER, 2nd five years of No. 28,724, from the 17th day of March, 1893. Improvements in Removable Jaws for Pipe and Bolt Wrench, 2nd March, 1893.
2912. THE VICTOR BRUSH COMPANY (assignee), 2nd and 3rd five years of No. 28,621, from the 3rd day of March, 1893. Improvements in the manufacture of Cylindrical Brushes and Apparatus therefor, 2nd March, 1893.
2913. THE VICTOR BRUSH COMPANY (assignee), 2nd and 3rd five years of No. 28,878, from the 12th day of April, 1893. Improvements in apparatus for inserting and fixing the Bristles of Brushes and the like, 2nd March, 1893.
2914. ROBERT TORRANCE, 2nd five years of No. 28,759, from the 24th day of March, 1893. Improvements in Sulky Gears, 2nd March, 1893.
2915. THOMAS F. MORRIN, 2nd five years of No. 28,626, from the 5th day of March, 1893. Improvements in Steam Generators, 3rd March, 1893.
2916. WILLIAM H. KERR, 2nd five years of No. 28,811, from the 4th day of April, 1893. Improvements on Bags, and method of and machinery for making the same, 6th March, 1893.
2917. NARCISSE LACERTE, 3rd five years of No. 16,515, from the 17th day of March, 1893. Medicinal Compound, 6th March, 1893.
2918. WILLIAM HENRY WRIGHT, 2nd five years of No. 28,644, from the 7th day of March, 1893. Improvements in Sugar Sap Evaporators, 6th March, 1893.
2919. JOHN MAGUIRE and ROBERT CARROLL, 2nd five years of No. 28,697 from the 14th day of March, 1893. Improvements in Drain Tile Traps, 7th March, 1893.
2920. CANADIAN ELECTRIC RAILWAY SIGNAL AND SUPPLY COMPANY (assignee), 2nd five years of No. 28,717, from the 16th day of March, 1893. Improvements in Electric Railway Signals, 9th March, 1893.
2921. BOSTEDO PACKAGE AND CASH CARRIER COMPANY (assignee), 2nd five years of No. 28,669, from the 10th day of March, 1893. Improvements in Cash and Package Carrier System, 9th March, 1893.
2922. TORONTO DROP FORGE COMPANY (assignee), 3rd five years of No. 16,497, from the 13th day of March, 1893. Improvements in Iron Fences, 9th March, 1893.
2923. JAMES W. CUTHBERTON, 2nd five years of No. 28,671, from the 12th day of March, 1893. Pump Suction Bucket, 11th March, 1893.
2924. FREDERICK O. YOUNG and LABEN HEATH, 2nd five years of No. 28,768, from the 24th day of March, 1893. Improvements in Faucets, 13th March, 1893.
2925. AUSTIN BERRY, 2nd five years of No. 28,688, from the 13th day of March, 1893. Improvements in Sleighs, 13th March, 1893.
2926. WINDSOR PATENT BRUSH COMPANY (assignee), 3rd five years of No. 16,780, from the 4th day of May, 1893. Improvements on Brushes, 14th March, 1893.
2927. DAVID W. BUNDY, 2nd five years of No. 28,709, from the 15th day of March, 1893. Improvements in Pay Devices, 14th March, 1893.
2928. JACOB WRIGHT, 2nd five years of No. 28,734, from the 21st day of March, 1893. Improvements on Hinges, 14th March, 1893.
2929. THE DOMINION FIRE ESCAPE COMPANY (assignee), 2nd five years of No. 28,778, from the 27th day of March, 1893. Improvements in Fire Escapes, 15th March, 1893.
2930. TRONSON DRAPER, 2nd five years of No. 28,727, from the 19th day of March, 1893. Improved Ball Turning Lathe, 15th March, 1893.
2931. WILLIAM H. H. CHILDS, 2nd five years of No. 29,117, from the 8th day of May, 1893. Improvements in Machines for making Sheating Paper, 21st March, 1893.
2932. HENRY G. TIPPING, 2nd five years of 28,901, from the 14th day of April, 1893. Improvements in Endless Plateways for Wheeled Vehicles, Instruments and Machines, 22nd March, 1893.
2933. THE PIERCE, BUTLER AND PIERCE MANUFACTURING COMPANY (assignees), 2nd five years of No. 28,754, from the 23rd day of March, 1893. Improvements in Hot Water Boilers, 23rd March, 1893.
2934. CARTER & CO. (assignee), 3rd five years of No. 16,565, from 28th day of March, 1893. Improvements on Numbering Machines, 27th March, 1893.
2935. FRANZ GUSTAV OSCAR EHLE, 2nd five years of No. 29,581, from the 28th day of July, 1893. Improvements in Dinner Pails, 27th March, 1893.
2936. THOMAS TEMPLE, 2nd five years of No. 29,207, from 26th day of May, 1893. Improvements in Railway Track Cleaners, 27th March, 1893.
2937. ECKLEY B. COX and SAMUEL SALMON, 2nd and 3rd five years of No. 28,803, from the 4th day of April, 1893. Improvements in Mechanical Movements, 28th March, 1893.
2938. GEORGE WILKINSON, 2nd five years of No. 28,949, from the 18th day of April, 1893. Improvements in Trusses, 30th March, 1893.





# TRADE MARKS

Registered during the month of March, 1893, at the Department of Agriculture—  
Copyright and Trade Mark Branch.

4554. THE COLLINS COMPANY, of Collinsville, Hartford Co., Connecticut, U.S.A. General Trade Mark, 1st March, 1893.
4555. MAXIME BLANCHON, de Paris, France. Un produit pharmaceutique, 2 mars, 1893.
4556. ROBERT MITCHELL BALLANTYNE, of Stratford, Ont. Overshoes, 3rd March, 1893.
4557. LAWRENCE A. WILSON, of Montreal, Que. Rye Whiskey, 4th March, 1893.
4558. LOUIS OVIDE GROTHÉ, of Montreal, Que. Cigars, Cigarettes and Tobacco, 4th March, 1893.
4559. TASSÉ, WOOD & CO., of Montreal, Que. Cigars, Cigarettes and Tobacco, 4th March, 1893.
4560. FRANKLIN G. CALLENDER, of Toronto, Ont. Brain Food Coffee, 9th March, 1893.
4561. J. H. FARR & CO., of Toronto, Ont. Carriage and Coach Varnishes, 9th March, 1893.
4562. M. LAING & SONS, of Montreal, Que. A Baking Compound made of Cottonseed Oil and Beef Suet, 10th March, 1893.
4563. THE DRUMMOND TOBACCO CO., of St. Louis, Missouri, U.S.A. Plug Chewing Tobacco, 14th March, 1893.
4564. THE ELECTRIC APPLIANCE CO., of Burlington, Coffey Co., Kansas, U.S.A. Electric Insoles for Boots and Shoes, 14th March, 1893.
4565. SAMUEL S. FORREST, of Halifax, N.S. Condensed Milk, 16th March, 1893.
4566. { THE ANGLO-BRITISH COLUMBIA PACKING CO., LD., of Van-  
4567. { couver, B.C. Canned Salmon, 20th March, 1893.
4568. HORMIDAS LAPORTE, of Montreal, Que. Tea, 20th March, 1893.
4569. { THE ATLAS TACK CORPORATION, of Boston, Mass., U.S.A. Tacks  
4570. { and Nails, 22nd March, 1893.
4571. CLARK & ALDEN, of North Woburn, Middlesex Co., Mass., U.S.A. A Substitute for Coffee, 23rd March, 1893.
4572. THE JOHN GOOD CORDAGE AND MACHINE CO., of Jersey City, N.J., and New York, N.Y., U.S.A. Binder Twine, 23rd March, 1893.
4573. THE METALLIC ROOFING COMPANY OF CANADA, LD., of Toronto, Ont. Sheet Metal Plates, such as roofing, siding and other covering plates, 24th March, 1893.
4574. THE DELSARTE CORSET CO., of Newark, N.J., U.S.A. Corsets, Waists, Braces, Girdles, Strofiners, Dresses, Circulars, Coats, Union Garments and Shirts, 24th March, 1893.
4575. HENRY SIMON, of London, Ont. Cigars, 27th March, 1893.
4576. ROBERT WATSON & THOMAS WATSON, of Toronto, Ont., trading as R. & T. WATSON. Caramels, 28th March, 1893.
4577. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Chemical Substances used for agricultural, horticultural, veterinary and sanitary purposes, 28th March, 1893.
4578. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Bleaching Powder, 28th March, 1893.
4579. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Common Soap and Detergents and raw or partly prepared vegetable, animal and mineral substances used in manufactures, but excluding coal and linseed oils, and including glycerine, 28th March, 1893.
4580. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Common Soap and Detergents, and raw or partly prepared vegetable, animal and mineral substances used in manufactures, but excluding coal and linseed oils, and including glycerine, 28th March, 1893.

4581. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Bleaching Powder, 28th March, 1893.
4582. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Bleaching Powder, 28th March, 1893.
4583. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Chemical Substances used for agricultural, horticultural, veterinary and sanitary purposes, Common Soap and Detergents, and raw or partly prepared vegetable, animal and mineral substances used in manufactures, but excluding coal and linseed oils, and including glycerine, 28th March, 1893.
4584. THE UNITED ALKALI CO., LD., of G 11 Exchange Buildings, Liverpool, England. Chemical Substances used for agricultural, horticultural, veterinary and sanitary purposes, 28th March, 1893.
4585. JOLLY & SON, LD., of 194 Regent St., London, England. Pills, 29th March, 1893.
4586. JAMES F. WHELAN & JOHN E. FERGUSON, of Halifax, N.S., trading as WHELAN & FERGUSON. General Trade Mark, 29th March, 1893.
4587. CL. ESMONIN, d'Outremont, Que. Pommade Antidartreuse et Antiherpetique, guérison des affections cutanées, etc, 29 mars, 1893.
4588. EDWARD GLEDHILL, of Toronto, Ont. Periodical, 29th March, 1893.
4589. THE OD CHEM. CO., of New York, N.Y., U.S.A. Remedies for Diseases of the Blood, etc., 29th March, 1893.

# COPYRIGHTS

Entered during the month of March, 1893, at the Department of Agriculture—

## Copyright and Trade Mark Branch.

6814. A STRONG WEAKNESS TO WED AN OLD MAN. Words by R. Seymour. Music by Chas. Bohner. Whaley, Royce & Co., Toronto, Ont., 1st March, 1893.
6815. MODERN SCHOOL GEOGRAPHY AND ATLAS. The Canada Publishing Company, Ltd., Toronto, Ont., 1st March, 1893.
6816. AT THE BALL. Words by Chas. D. Bingham. Music by F. Boscovitz. A. & S. Nordheimer, Toronto, Ont., 1st March, 1893.
6817. PLAN OF THE TOWN OF COTE ST. ANTOINE, PARISH OF MONTREAL, PROVINCE OF QUEBEC. (Map). James N. Patton, Montreal, Que., 2nd March, 1893.
6818. MAP OF THE TOWNSHIP OF NORTH GWILLIMBURY, YORK COUNTY, ONTARIO, CANADA. Joseph Lloyd, Aurora, Ont., 3rd March, 1893.
6819. ASSESSED TO DEATH AND AMERICAN LEGION OF HONOR. (Articles). The Monetary Times Printing Company of Canada, Ltd., Toronto, Ont., 3rd March, 1893.
6820. ARDRI; OR, THE PARLOUR GAME OF FOOTBALL. (Chart). Frederick T. Butler, Toronto, Ont., 3rd March, 1893.
6821. THE FRENCH TEACHER, actuellement en voie de publication par articles dans le "Maître de Français," publié à Montréal, Qué., (Droit Temporaire d'Auteur). Louis Tesson, Montréal, Qué., 3 mars, 1893.
6822. LECTURE ON CO-OPERATIVE DAIRYING AND WINTER DAIRYING. By Mrs. E. M. Jones, Brockville, Ont., 4th March, 1893.
6823. BELL TELEPHONE COMPANY OF CANADA, LIMITED, LONDON EXCHANGE, SUBSCRIBERS DIRECTORY, ONTARIO DEPARTMENT, FEBRUARY, 1893. The Bell Telephone Company of Canada, Limited, Montreal, Que., 6th March, 1893.
6824. THE MALCOLM LEDGER. A. G. Malcolm, Toronto, Ont., 8th March, 1893.
6825. RUINES CLERICALES. AU PAYS DES RUINES, I. A. Filiatreault, Montréal, Qué., 8 mars, 1893.
6826. NEW CATALOGUE AND PRICE LIST OF TOILET PAPERS, MANUFACTURED BY J. C. WILSON & COMPANY, 700 CRAIG ST., MONTREAL. James Crockett Wilson, Montreal, Que., 9th March, 1893.
6827. LIVRET DES FAMILLES ASSOCIÉES ET CONSACRÉES À LA SAINTE FAMILLE DE JESUS, MARIE, JOSEPH. J. H. Perreault, Ptre., Montréal, Qué., 9 mars, 1893.
6828. HUNT'S SUNDAY SCHOOL RECORD. The Endeavor Herald Publishing Co., Toronto, Ont., 9th March, 1893.
6829. APPLICATION FOR REGISTRY IN THE DOMINION IDENTIFICATION COMPANY. (Form). Arthur H. Beal, St. John, N. B., 10th March, 1893.
6830. YEAR BOOK AND CLERGY LIST OF THE CHURCH OF ENGLAND IN THE DOMINION OF CANADA, 1893. Joseph P. Clougher, Toronto, Ont., 10th March, 1893.
6831. PHOTOGRAPHIE DE MGR. MAXIME DECELLES. (Marqué A). L. A. Choquet et frère, St. Hyacinthe, Qué., 13 mars, 1893.
6832. PHOTOGRAPHIE DE MGR. MAXIME DECELLES. (Marqué B). L. A. Choquet et frère, St. Hyacinthe, Qué., 13 mars, 1893.
6833. PHOTOGRAPHIE ET BIOGRAPHIE DE MGR. MAXIME DECELLES. L. A. Choquet et frère, St. Hyacinthe, Qué., 13 mars, 1893.
6834. GEORGIE PORGIE. Humorous Part Song. By Sydney Percival. I. Suckling & Sons, Toronto, Ont., 13th March, 1893.
6835. INSURANCE PLAN OF THE CITY OF MONTREAL. Volume V. Charles Edward Goad, Montreal, Que., 13th March, 1893.

6836. INSURANCE PLANS OF BATH, BLOOMFIELD, CONSECON, MIMICO, WELLINGTON AND BRANTFORD IN ONTARIO. Charles Edward Goad, Montreal, Que., 13th March, 1893.
6837. RAPPORTS JUDICIAIRES REVISÉS DE LA PROVINCE DE QUÉBEC. par l'Honorable M. Mathieu. Tome V. Wilfred John Wilson, Montréal, Qué., 16 mars, 1893.
6838. HOW TO WRITE A BUSINESS LETTER. By Christopher Alexander Fleming, Owen Sound, Ont., 17th March, 1893.
6839. LA MAYEUX, Roman, actuellement en voie de publication par articles dans le "Petit Journal," publié à Montreal, Province de Québec, La Société du Petit Journal, de Paris, France, 17 mars, 1893.
6840. ALPHA POLKA. By Emma M. Horton. A. & S. Nordheimer, Toronto, Ont., 17th March, 1893.
6841. CHRISTINE SCHOTTISCHE. By C. A. Fry. A. & S. Nordheimer, Toronto, Ont., 17th March, 1893.
6842. DADDY'S PIPE. Words by Chas. D. Bingham. Music by F. Boscovitz. A. & S. Nordheimer, Toronto, Ont., 17th March, 1893.
6843. THE ALERT POLKA. By Maggie Mitchell. A. & S. Nordheimer, Toronto, Ont., 17th March, 1893.
6844. VELLENSICA VALSE. By W. Daunt Scott. A. & S. Nordheimer, Toronto, Ont., 17th March, 1893.
6845. MAYS' SYSTEM; THE FIGURE 9 AND ITS USES. James Mays, Chatham, Ont., 17th March, 1893.
6846. HOW TO DOUBLE THE WEALTH OF CANADA. By T. E. Ewen, M.A., Belleville, Ont., 18th March, 1893.
6847. THINK A LITTLE. Words by James Fax. Music by Chas. Bohner. Whaley, Royce & Co., Toronto, Ont., 20th March, 1893.
6848. CURFEW POLKA. For Piano. By Eric Arni. A. & S. Nordheimer, Toronto, Ont., 20th March, 1893.
6849. THE GRAND TRUNK RAILWAY TRANSITION CURVE. By E. S. M. Lovelace, B.A. Sc., A.M. Can. Soc. C. E., Montreal, Que., 21st March, 1893.
6850. JACK AND HIS DOG. (Lithograph.) The Royal Soap Co., Winnipeg, Man., 22nd March, 1893.
6851. PRETTY POLL. (Lithograph.) The Royal Soap Co., Winnipeg, Man., 22nd March, 1893.
6852. PUSSY'S SCRATCH. (Lithograph.) The Royal Soap Co., Winnipeg, Man., 22nd March, 1893.
6853. PETIT GUIDE DU CHASSEUR DE PELLETERIE. Par Henry de Puyjalon, Montréal, Qué., 22 mars, 1893.
6854. EMMA LEILA. Polka Brillante. By W. B. Miller. Arranged by Jos. Monk. Sydney Ashdown, Toronto, Ont., 24th March, 1893.
6855. PROSPECTUS RENT GUARANTEE SCHEME. (Circular.) David W. Livingstone, Toronto, Ont., 27th March, 1893.
6856. PICTURESQUE VIEWS AND MAPS OF THE MUSKOKA LAKES. Ralph, Smith & Co., Toronto, Ont., 27th March, 1893.
6857. LOVE'S DREAM AFTER THE BALL. By Alphons Czibulka. I. Suckling & Sons, Toronto, Ont., 28th March, 1893.
6858. THE HONOURABLE ALEXANDER MACKENZIE, HIS LIFE AND TIMES. By Wm. Buchanan and Hon. Geo. W. Ross, LL.D. The Rose Publishing Co., Ltd., Toronto, Ont., 28th March, 1893.
6859. ORDER SHEET. H. S. Howland, Sons & Co., Toronto, Ont., 29th March, 1893.
6860. BARN DANCE. (Dancing Where the Orange Blossoms Grow.) By Joseph F. Monk. The Anglo-Canadian Music Publishers' Association, Ltd., London, England, 29th March, 1893.
6861. PEEP O' DAY JERSEY. By Jos. Knom. The Anglo-Canadian Music Publishers' Association, Ltd., London, England, 29th March, 1893.
6862. SWEETEST AND DEAREST WALTZ. By Florence Fare. The Anglo-Canadian Music Publishers' Association, Ltd., London, England, 29th March, 1893.
6863. THE DOMINION OF CANADA HOTEL GUIDE. Davis & Henderson, Toronto, Ont., 30th March, 1893.

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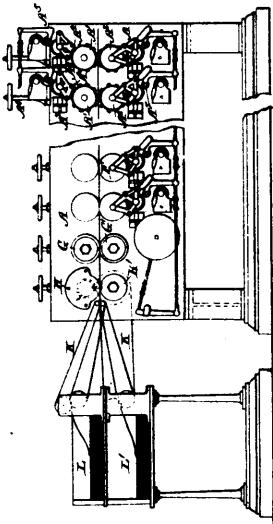
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## ILLUSTRATIONS.

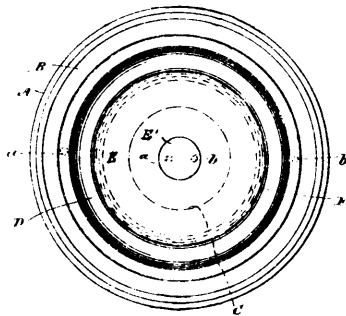
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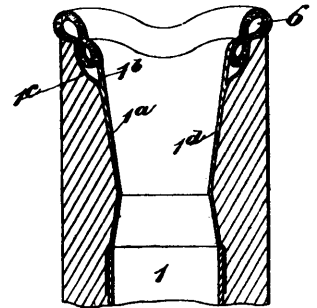
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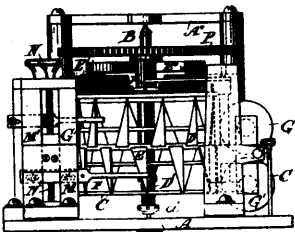
42116 Black's Apparatus for preparing tickets, &c., cut from a continuous web of paper.



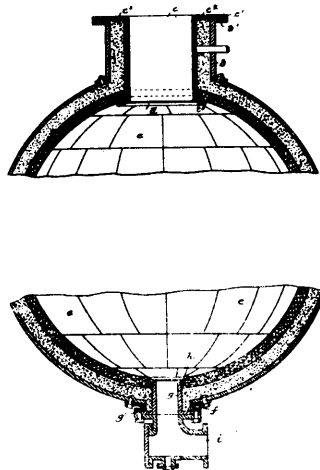
42117 Taylor's Car wheel.



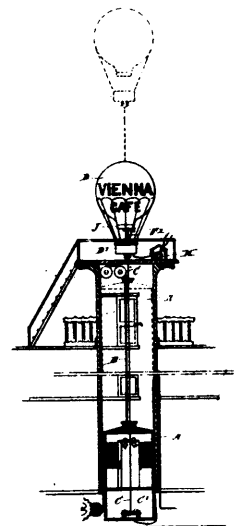
42118 Rose's Apparatus for transmitting and receiving sound.



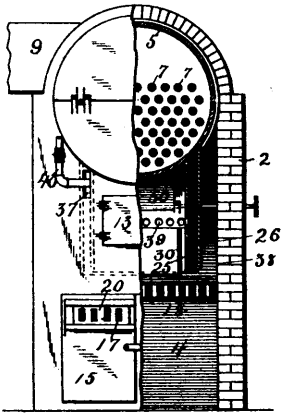
42119 Burke's Telegraphic Transmitter.



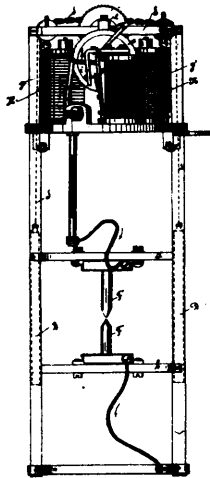
42120 Curtis and Jones' Paper Pulp Digester.



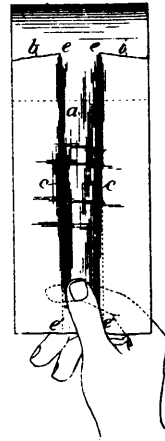
42121 Eisner's Advertising Device.



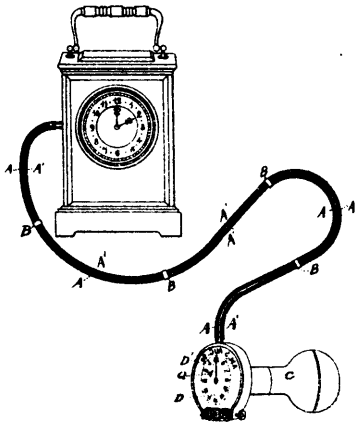
42122 Harkins' Boiler Furnace.



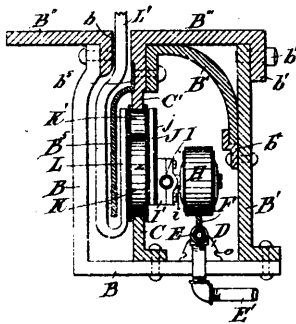
42123 Næck and Holstein's Arc Lamp.



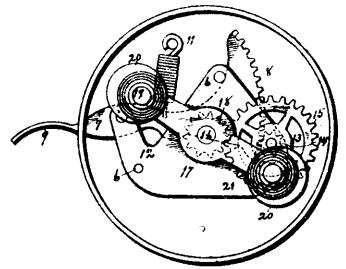
42124 Jerome's Toilet Paper.



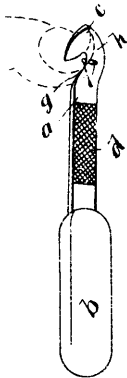
42125 Warwick's Conductor for transmitting motion to movable objects.



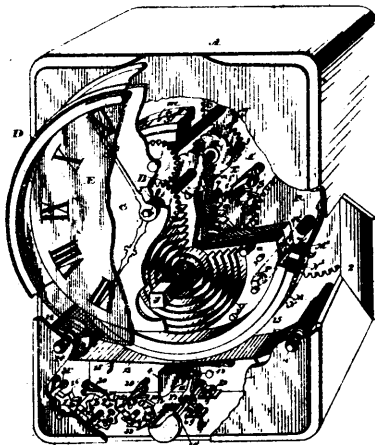
42126 Shoomaker's Electric Railway System.



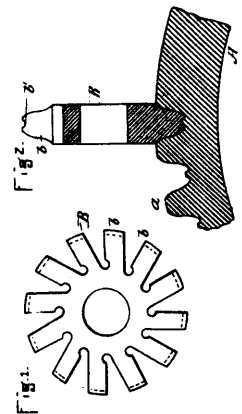
42127 Rockwell's Bell.



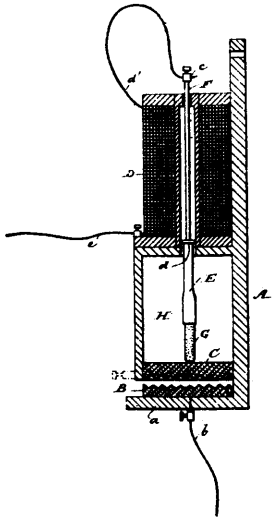
42128 Lewis's Nail Parer and Cutter.



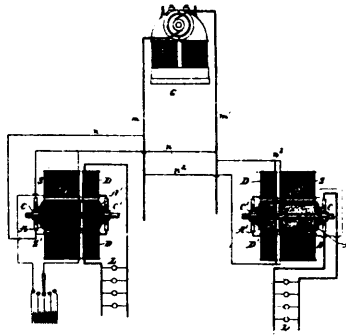
42129 Sharpe's Ticket Register.



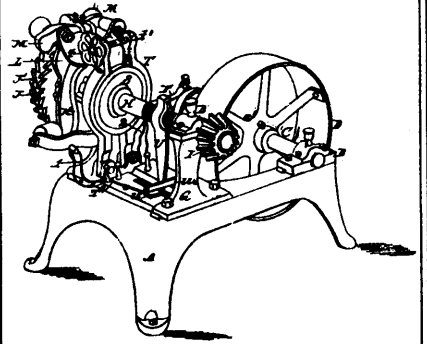
42130 Trask's Gears and Gear Cutter.



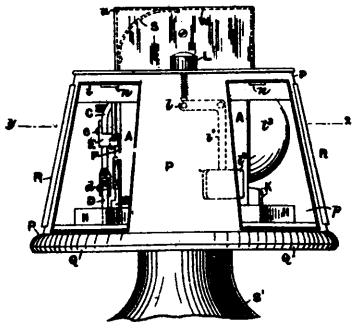
42131 Garton's Lightning Arrester.



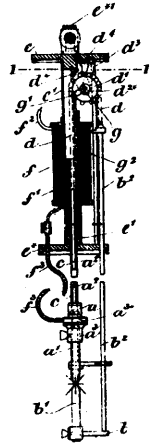
42132 Thompson's System of Electrical Distribution.



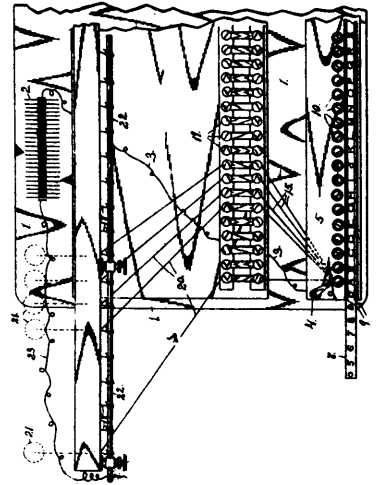
42133 Replie's Electrical Governor.



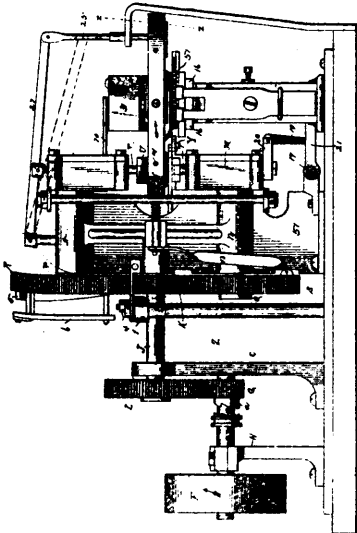
42134 Harrison's Advertising Match Box.



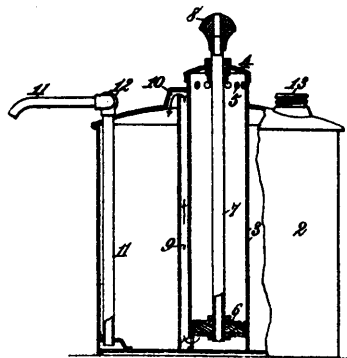
42135 Akester's Arc Lamp.



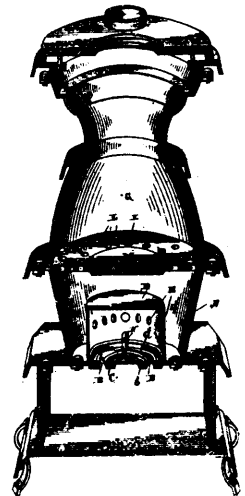
42136 Boughton's Signal Telegraphy.



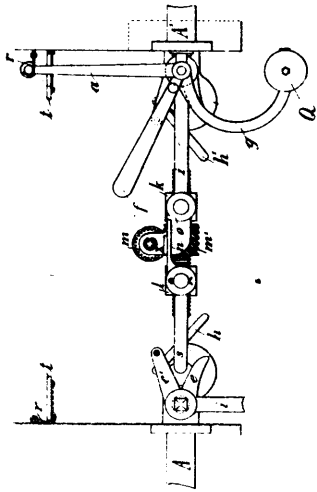
42137 Wood's Brick Machine.



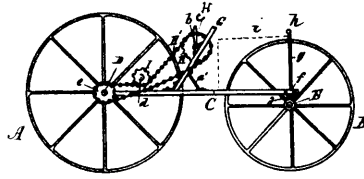
42138 Tschantz's Oil Can.



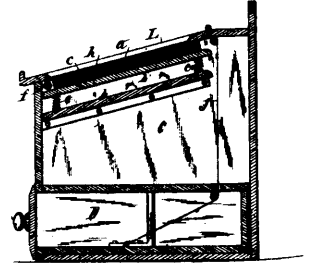
42139 Dillon's Oil Stove.



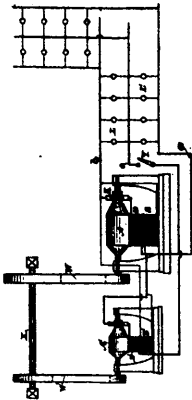
42140 Zehneck and Strauch's Car Coupler.



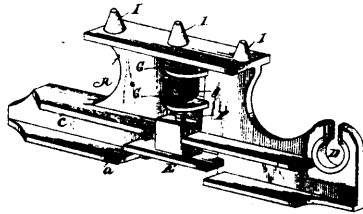
42141 Thompson's Vehicle Motor.



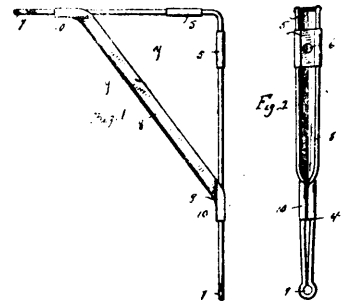
42142 Richardson's Cash Register and Recorder.



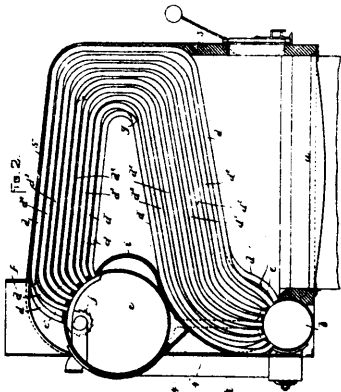
42143 Rice's System of Electrical Distribution.



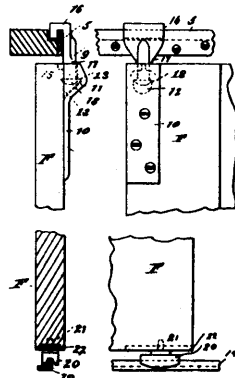
42144 Meagher's Tool for Setting and Gaging Saws.



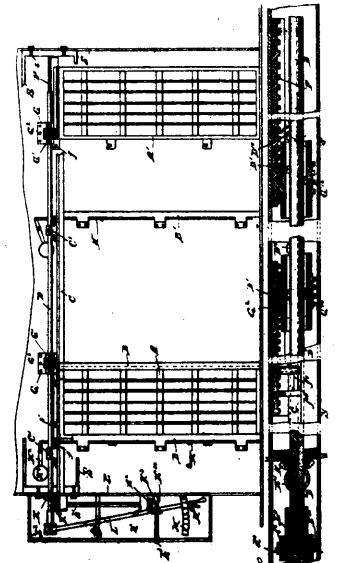
42145 Bradley's Shelf Bracket.



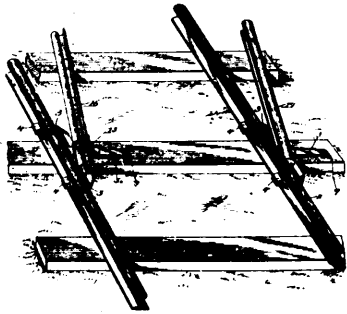
42146 Mosher's Steam Boiler.



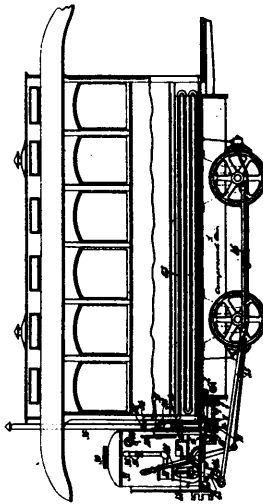
42147 Brill's Door for Cars.



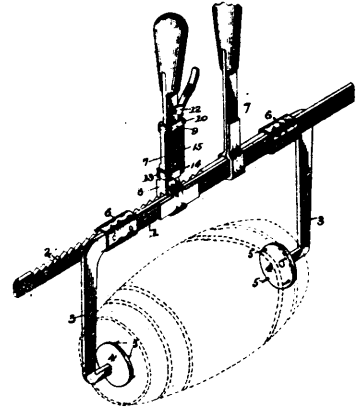
42148 Sparks' Lock for Jail Doors.



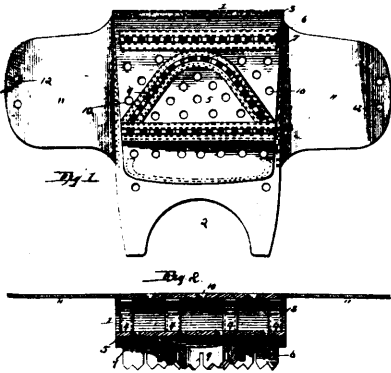
42149 Bourdette's Wrecking Frog.



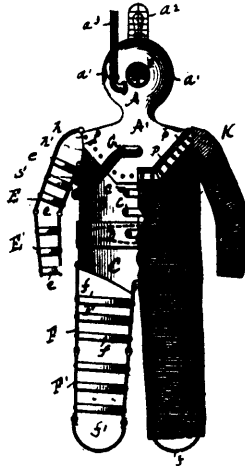
42150 Kames' Motor for Propelling Vehicles.



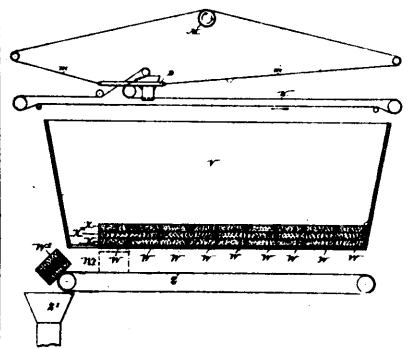
42151 Vaag's Device for Clamping the Heads of Barrels.



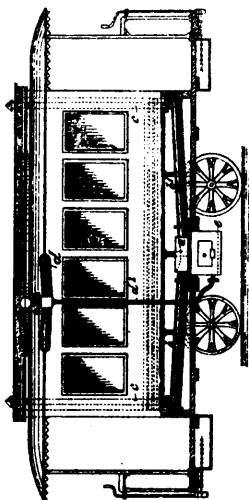
42152 Whitaker's Veterinary Shield.



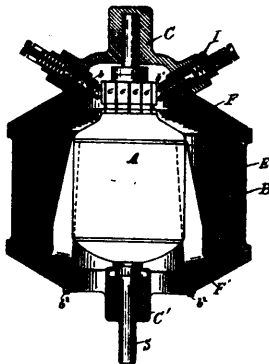
42153 Boucher, Brault and Filteau's Diving Suit.



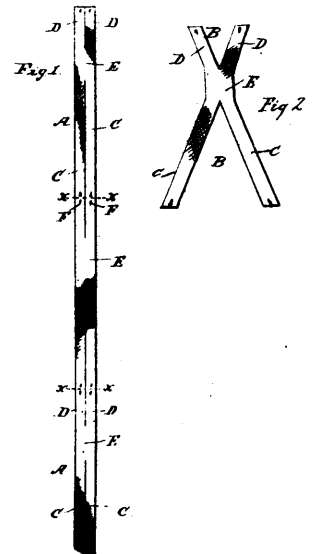
42154 Drummond's Apparatus for Mixing Sugar.



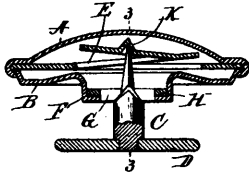
42155 Strauss' Oil Vapor Heating Apparatus.



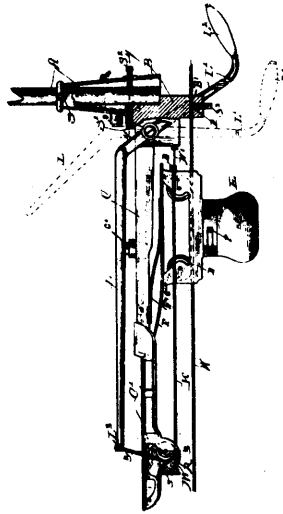
42156 Lundell's Electric Motor.



42158 Krouse, Meyers and Girard's Suspender.



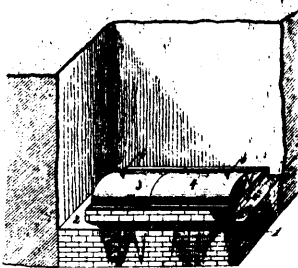
42159 Keplinger's Button.



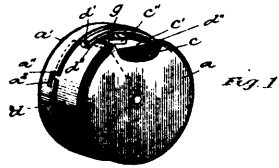
42160 Gipe's Cash Carrier.



42161 Brewer and Smith's Garment Supporter.



42162 Scott's Grave Box Cover.



42163 Sherman's Pocket Lamp.

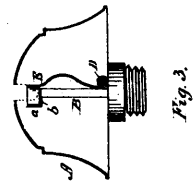


Fig. 3.

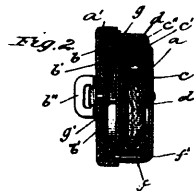


Fig. 2.

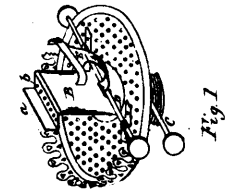
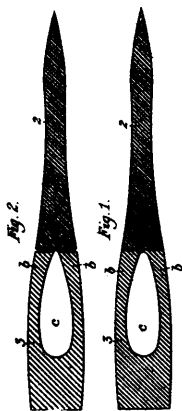
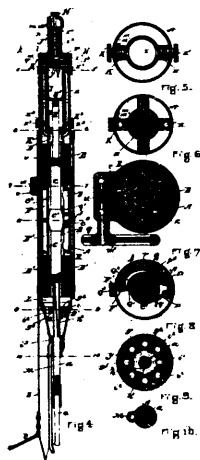


Fig. 1.

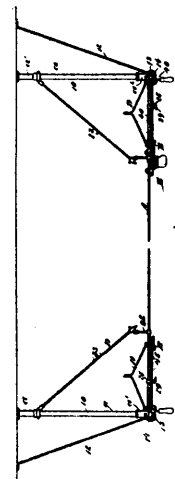
42164 Cleversley and Death's Lamp Extinguisher.



42165 Hubbard's Axe.

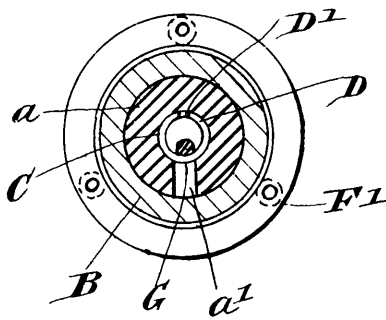


42166 McKay's Means for giving Reciprocating Motion.

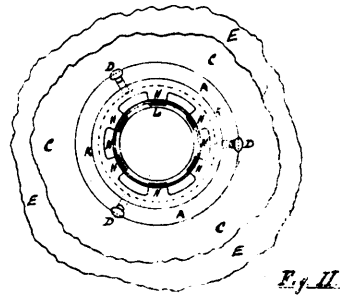
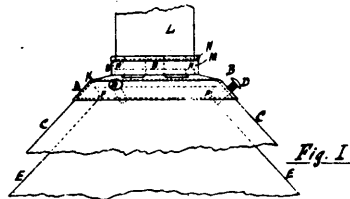


42167 Starr's Propelling Mechanism for Cash and Parcel Carriers.

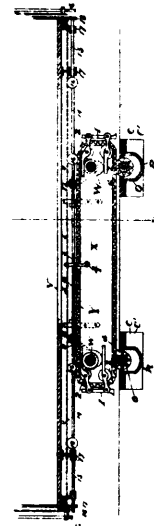




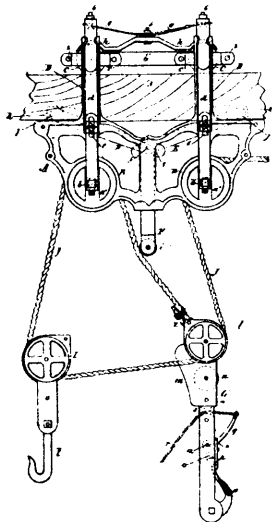
42169 Dubrule and Lebel's Carriage Axle.



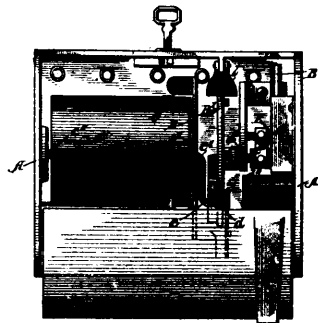
42170 Hellyer's Shade Holder for Incandescent Electric Lamps.



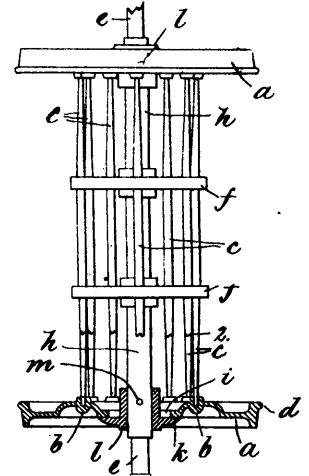
42171 Brintnell's Electric Propulsion of Cars.



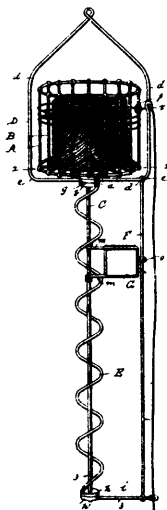
42172 Jones's Elevator and Carrier for Hay and Grain.



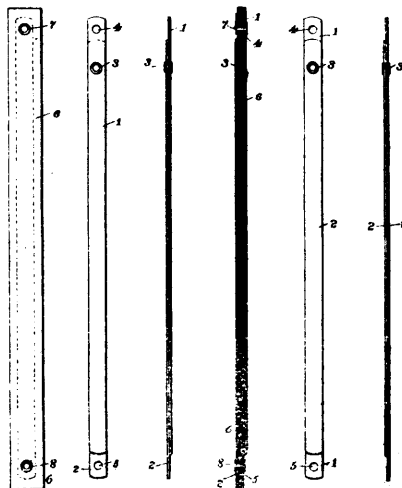
42173 Housh's Coin Operated Machine.



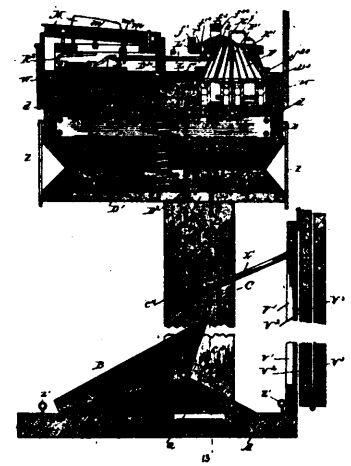
42174 Findlay's Vehicle Axle Wheel and Spring.



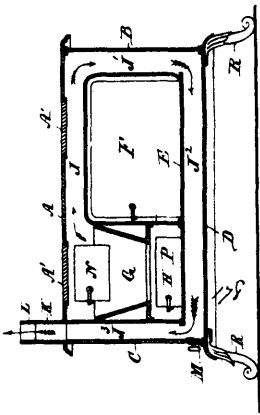
42175 Tracy and Graham's Twine Holder.



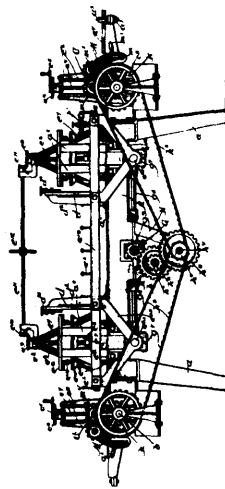
42176 Bray's Dress Stay.



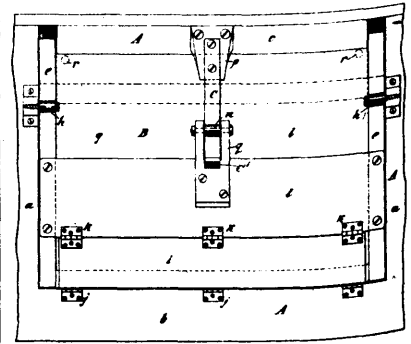
42177 Clark's Organ.



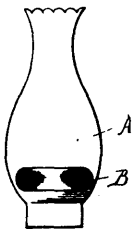
42178 Lemieux's Stove.



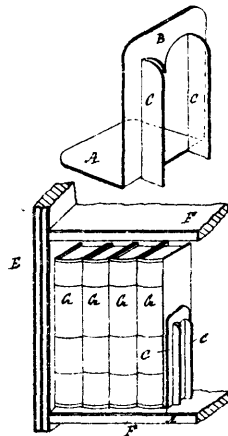
42179 Ruehs' Sand Papering Machine.



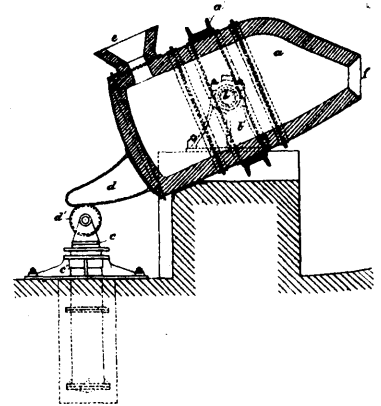
42180 Wisser's Rack for Musical Instrument Cases.



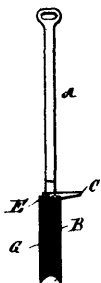
42181 Mefford's Lamp Chimney.



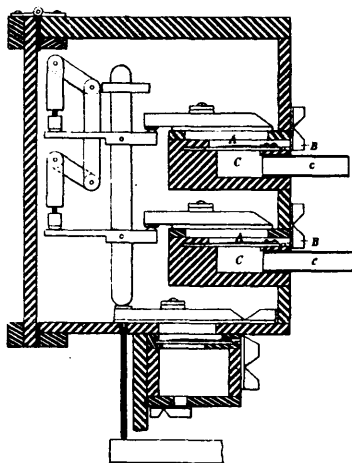
42182 Richard's Support for Books, &c.



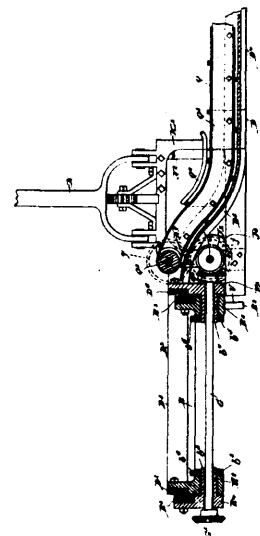
42183 Hilgenstock's Apparatus for Carrying out the Desulphurisation of Pig Iron.



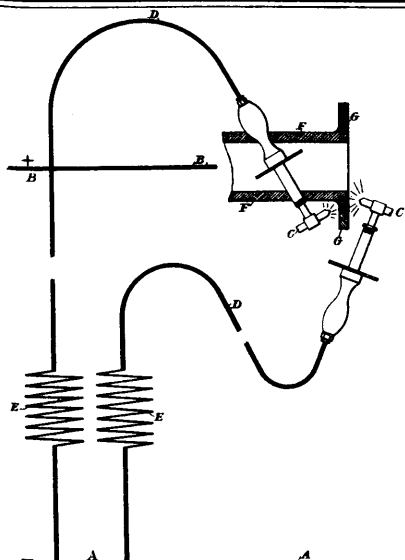
42184 Roe's Weeder.



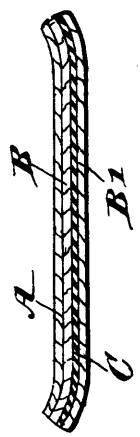
42185 Hamilton's Organ.



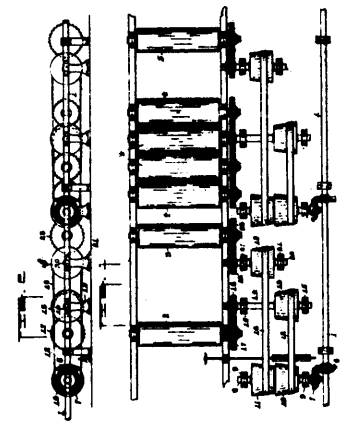
42186 Hamlet's Harvester.



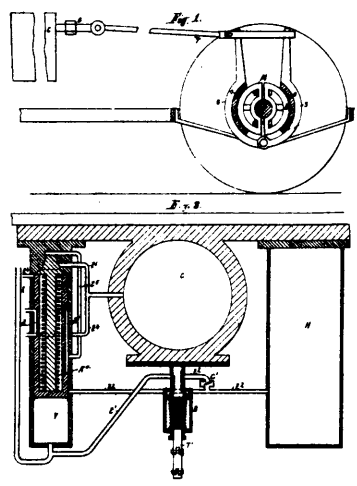
42188 Howard's Method of Heating and Welding by Electricity.



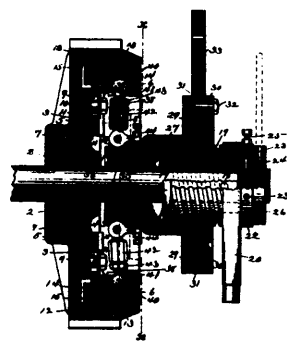
42189 Matthews' Boot and Shoe.



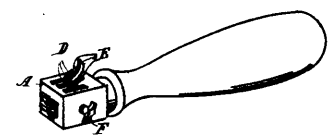
42190 Grosset's Paper Making Machine.



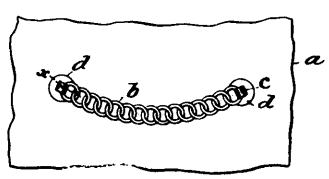
42191 Luyer's Brake for Railways.



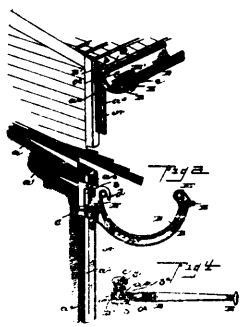
42192 McLaughlin's Friction Clutch.



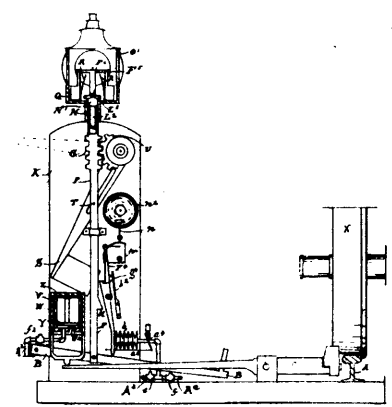
42194 Moseley's Cancelling and Dating Stamp.



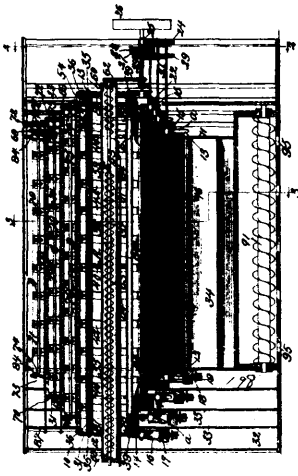
42195 Abbott's Garment Supporter.



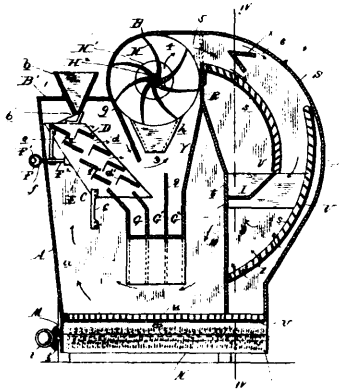
42196 Bingman's Eave Trough Hanger.



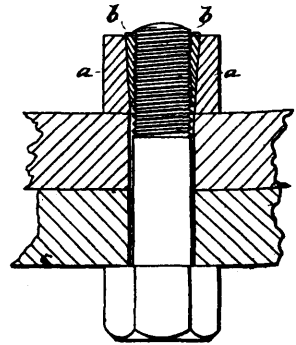
42197 Humpidge and Hollingshead's Signal for Railways.



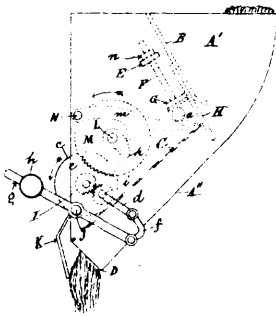
42198 Metherell's Machine for Scalping and Bolting Flour.



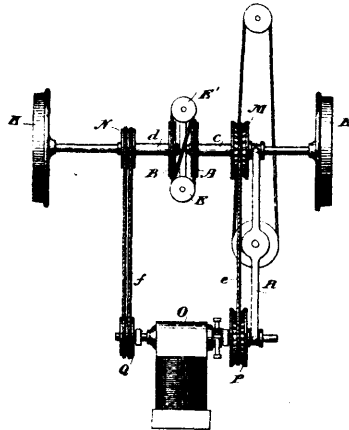
42199 Whitmore's Middling Purifier.



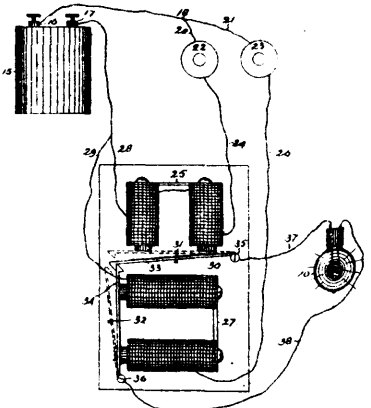
42200 Barlow and Hall's Nut Lock.



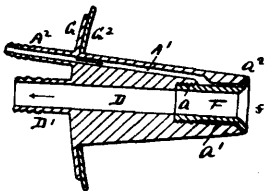
42201 Swayne's Feed Regulator for Hoppers.



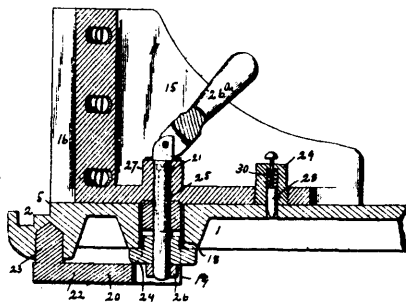
42202 Edison's Apparatus for Transmitting Power.



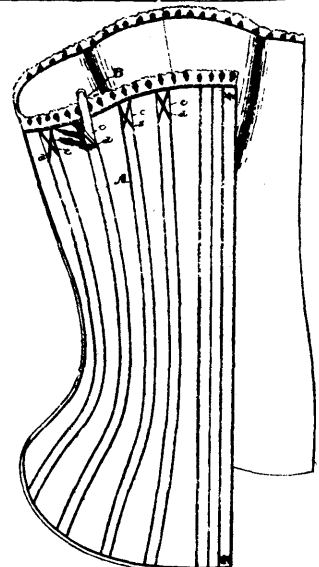
42203 Schrist's Method of Controlling Electric Lights.



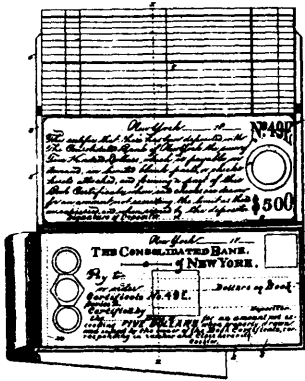
42204 Wardell's Vaginal Syringe.



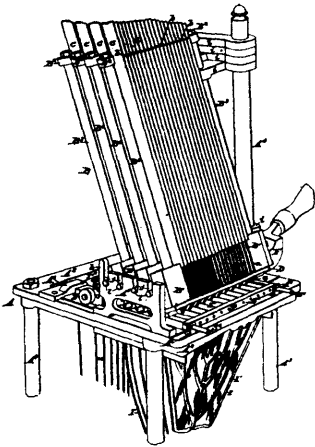
42205 Fox's Trimming Machine.



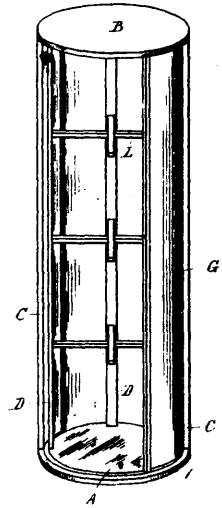
42206 Lewis' Corset.



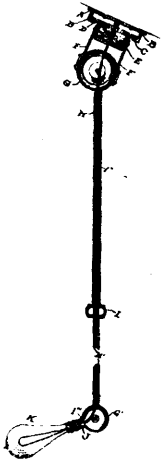
42207 Hopkins' Check Book.



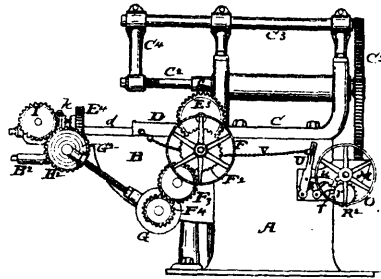
42208 McMillan's Type Setter.



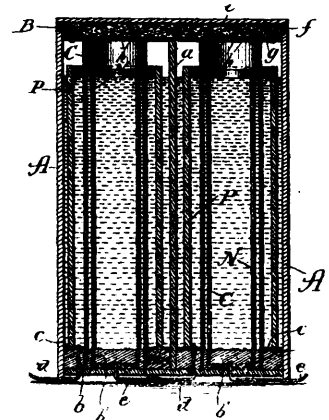
42209 Grouleff's Hat Case.



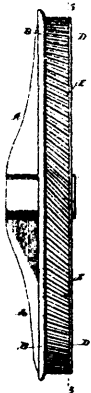
42210 Holt's Electric Light Hanger.



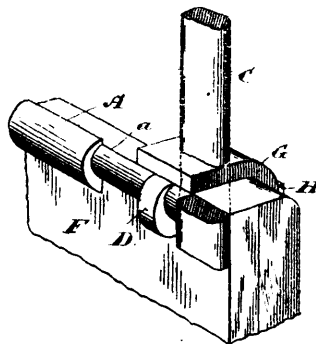
42211 Sherman's Gear Cutting Machine.



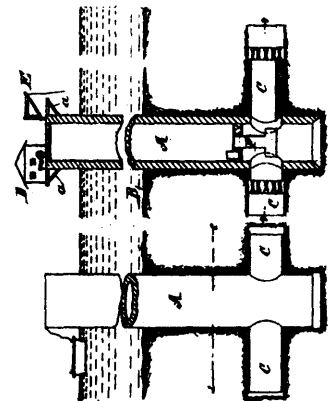
42212 Crowds' Galvanic Battery.



42213 Parmelee's Car Wheel.

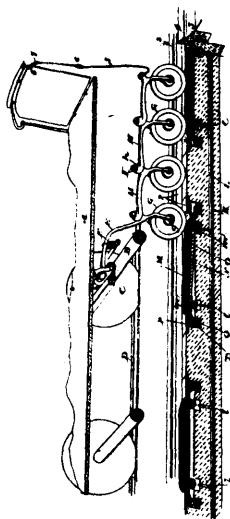


42214 Everett's Means for connecting a Dash-board to the body of a Vehicle.

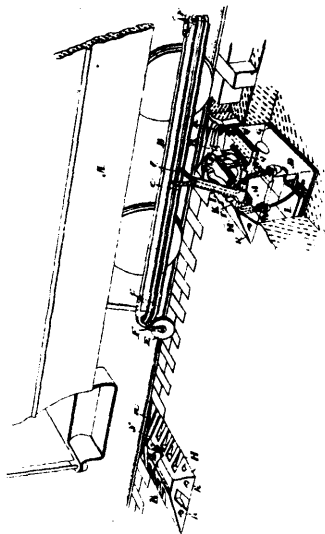


42215 Palmer and Hinds' Apparatus for tunnelling and mining under water.

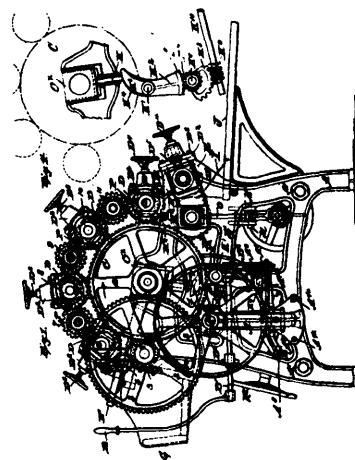




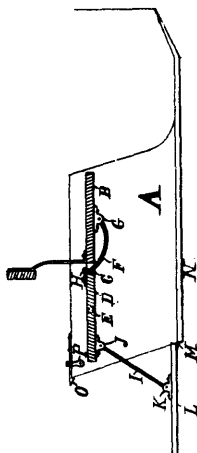
42226 Brintnell's Method of Propelling Cars Electrically.



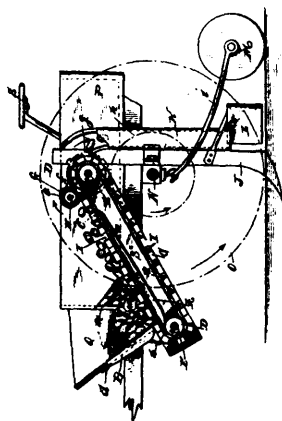
42227 Brintnell's Method of Propelling Cars Electrically.



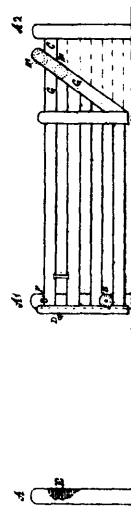
42228 Wendell's Mangle.



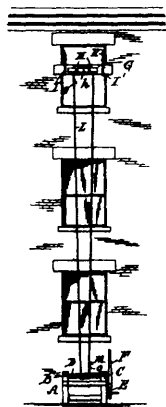
42229 Hodge's Seat for Vehicles.



42230 Essex's Potato Planter.



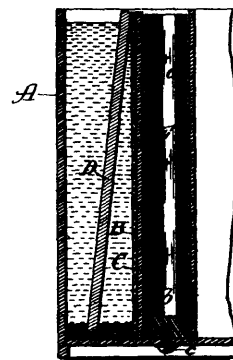
42231 Devlin's Gate.



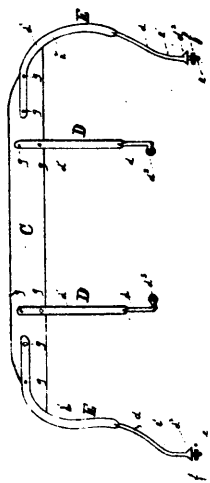
42232 Towne's Fire Escape.



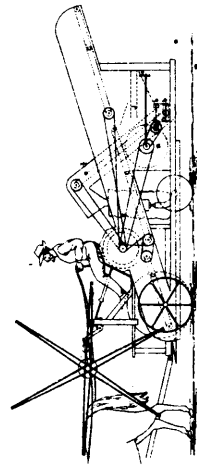
42233 Ephraim's Sole for Boots and Shoes.



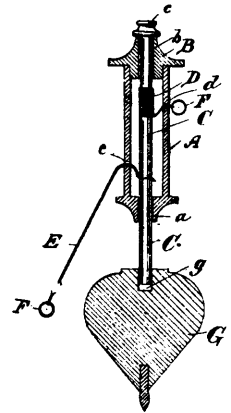
42234 Crowder's Galvanic Battery.



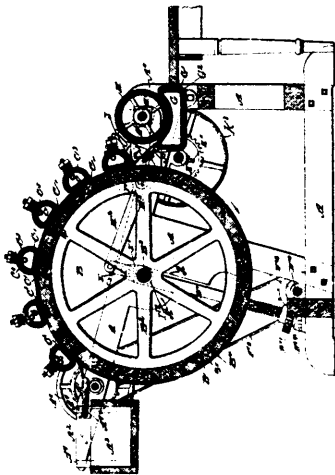
42235 Torrance's Spring Pack for Vehicle Seat.



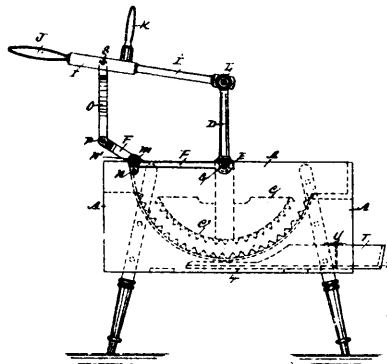
42236 Conroy's Machine for Harvesting, Threshing and Fanning Grain.



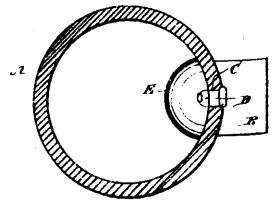
42237 Bedard's Spinning Top.



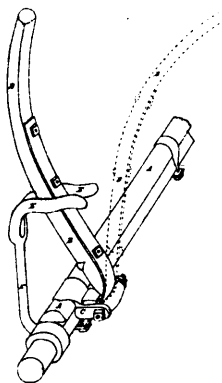
42238 Wiles and Vendell's Mangle.



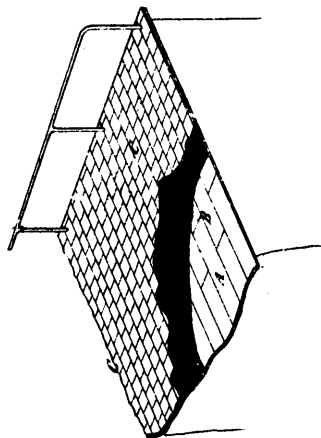
42239 Semmens' Washing Machine.



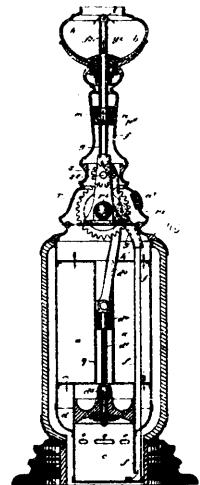
42240 Skaife's Gully.



42241 Miller's Machine for holding up vehicle shafts.

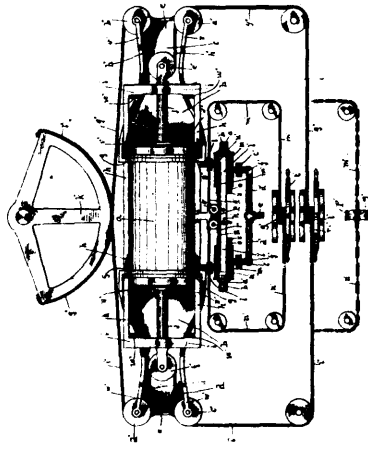


42242 Chesebrough's Roof and Floor covering.

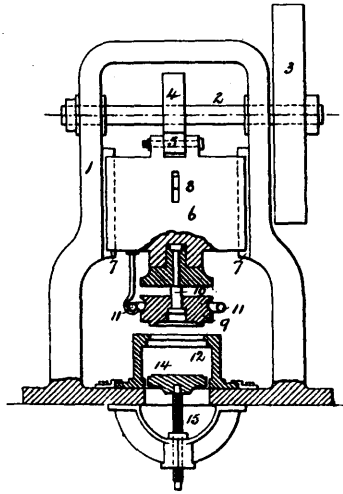


42243 Newton's Lamp.

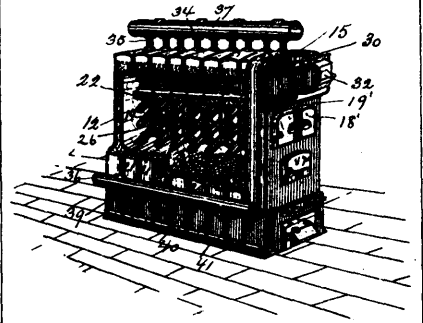




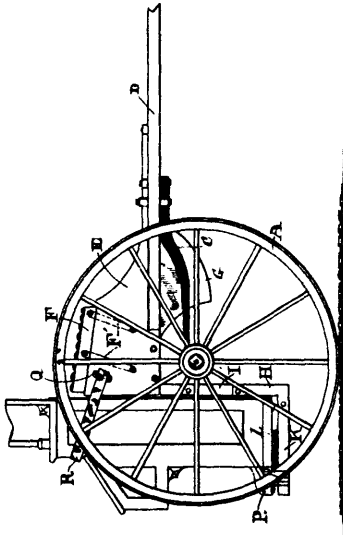
42244 Maxon's Steam Engine for ship-steering Apparatus.



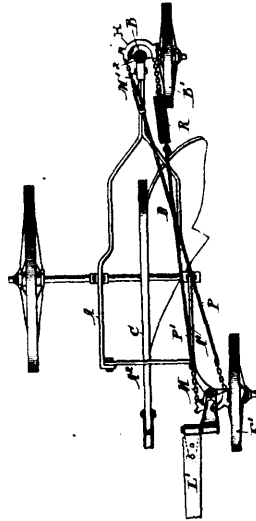
42245 Asche's Machine for closing and soldering cans.



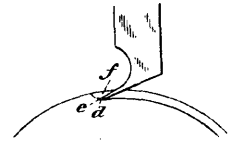
42246 Higgins' Steam Generator.



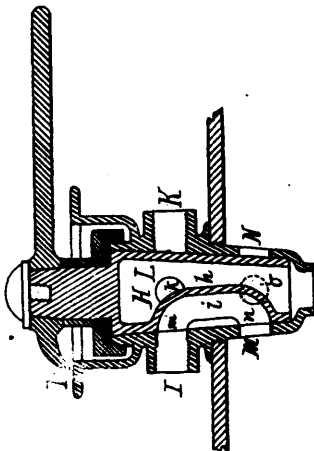
42247 Barrows' Two-Wheeled Vehicle.



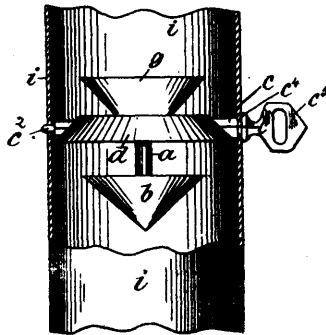
42248 Sobey's Sulky Plow.



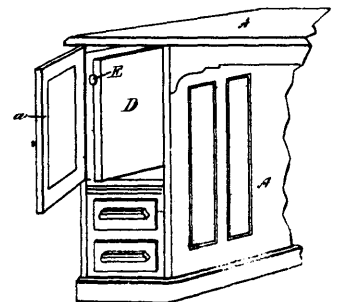
42249 Edison's Phonograph Recorder.



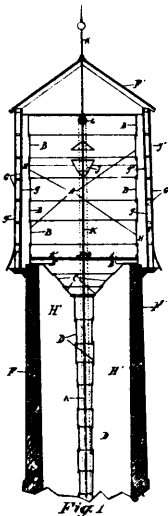
42250 Bowden's Filter.



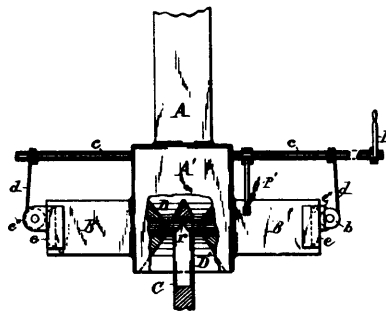
42251 Couch's Damper.



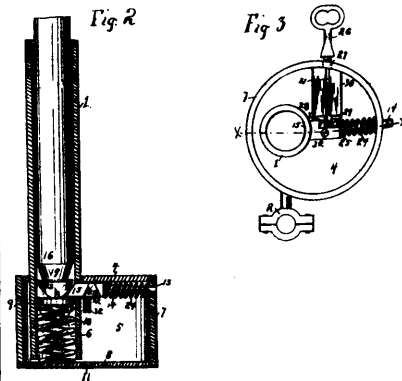
42252 Vetter's Type-writer Desk.



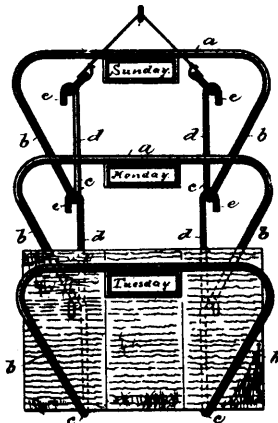
42253 Galt's Tank for Storing Liquids.



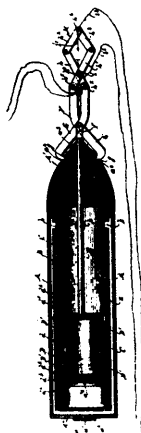
42254 Broga's Car Coupler.



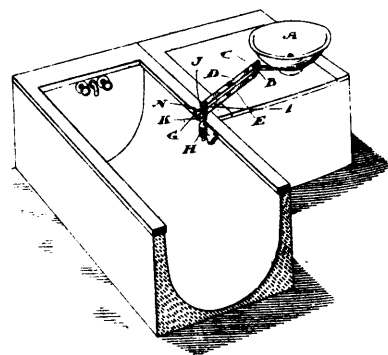
42255 Saxton's Whip Lock and Socket.



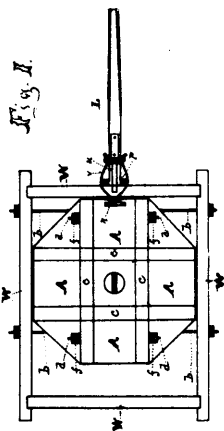
42256 Elias' Paper Holder.



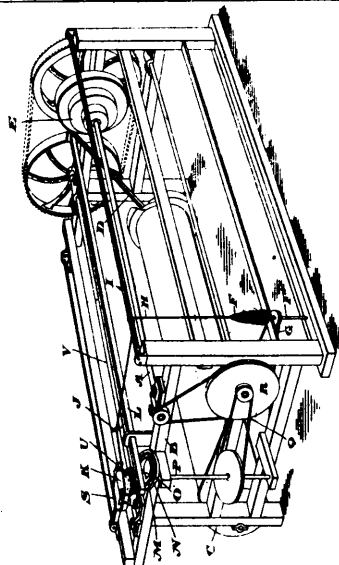
42257 Walker's Cartridge.



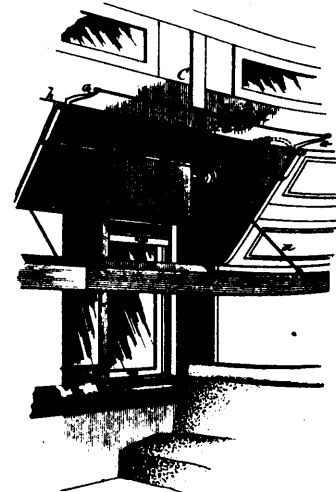
42258 Malcolm's Swinging Basin Support.



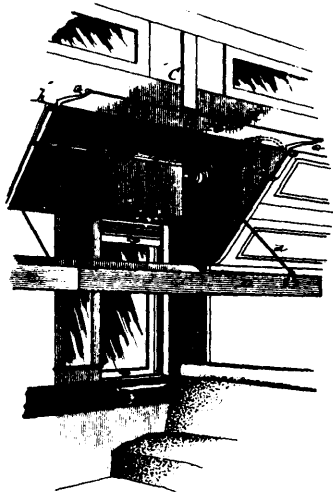
42259 Lehman's Machine for Setting Tires.



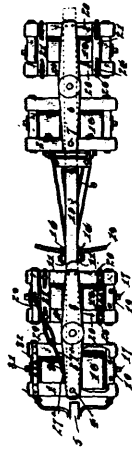
42260 Houghton's Twister and Shuttle Spooler.



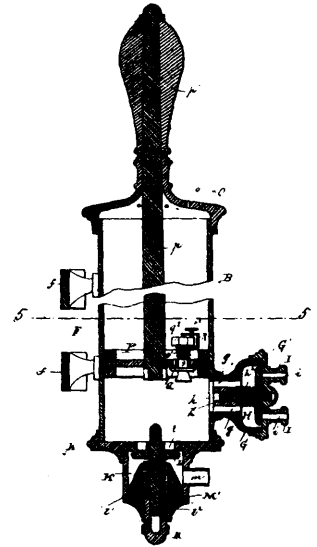
42261 Session's Curtain Rod.



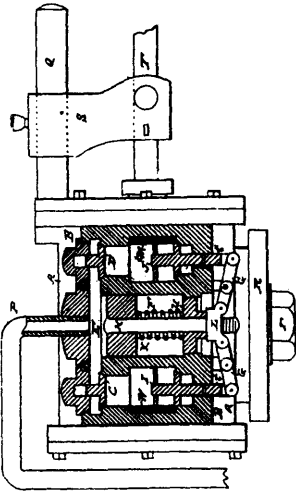
42262 Session's Curtain Rod.



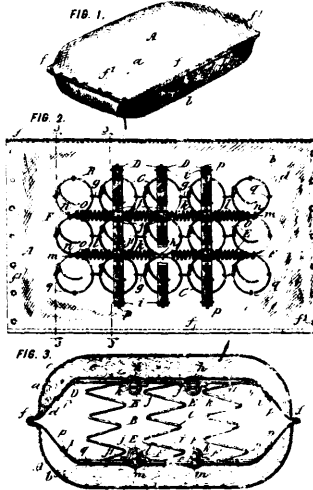
42264 Kent's House-moving Truck.



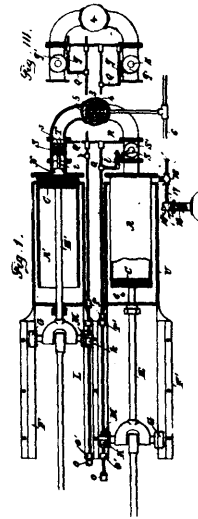
42265 Jensen's Cow Milking Machine.



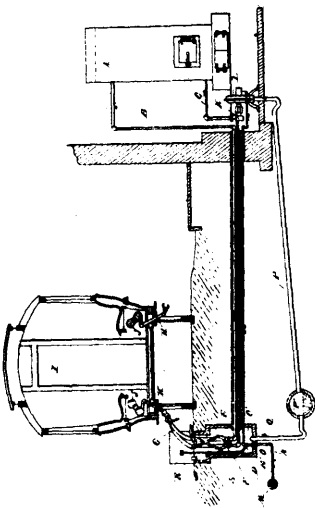
42266 Genett's Air Compressing Pump.



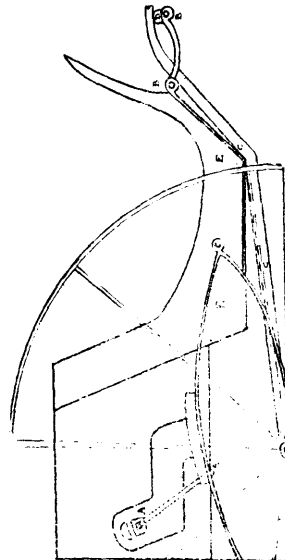
42267 Lewis' Spring Pillow.



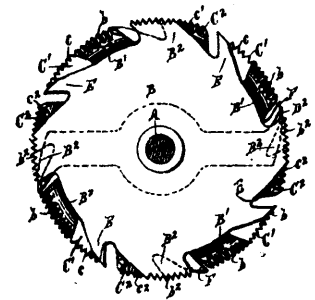
42268 Bornholdt's Pump.



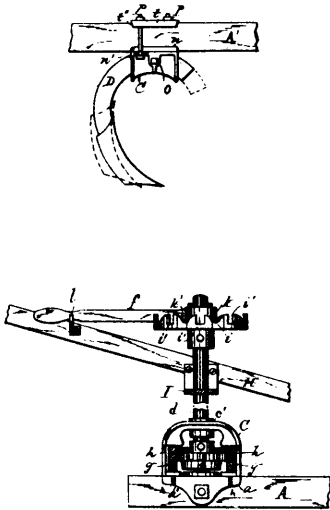
42269 McElroy's Supply Station for car heating system.



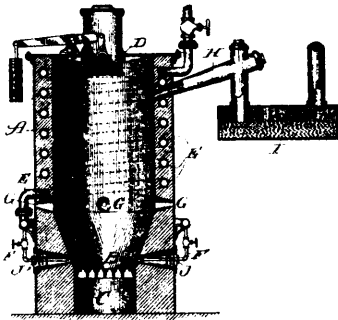
42270 Souler and Mason's Road Cart.



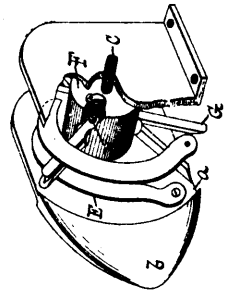
42272 Huther's Cutting Head.



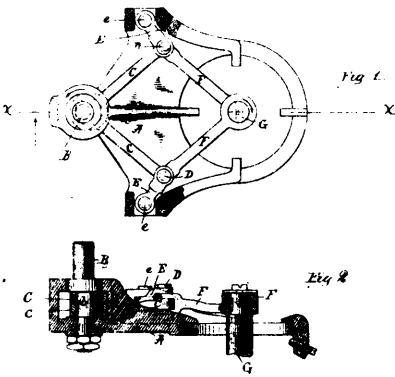
42273 Davison and Norris' Cultivator.



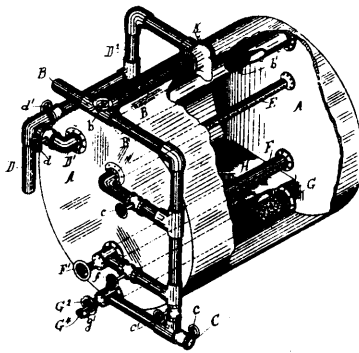
42274 Hennin's Apparatus for making Ammonia and Gas.



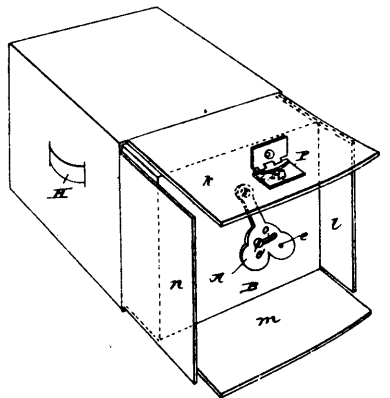
42275 Morrow's Flax Harvester.



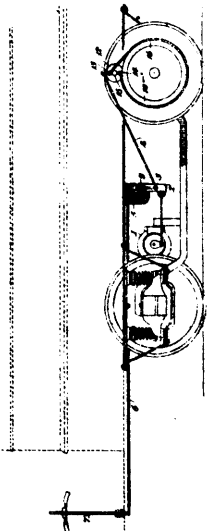
42276 Jenkin's Mechanical Movement.



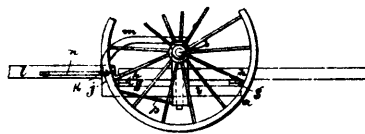
42277 Bowden's Filter.



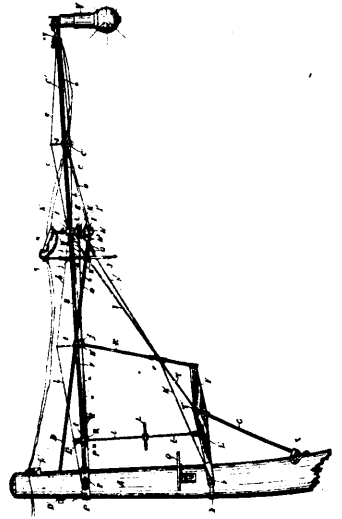
42278 Topley's Camera.



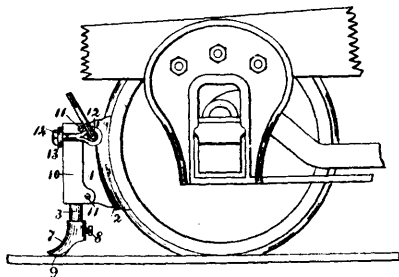
42279 Edison's Propelling Device for Electric Cars.



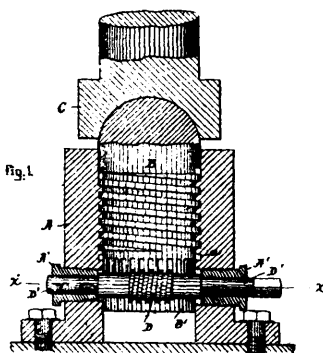
42280 Dewitt's Crank Axle for Vehicle Wheels.



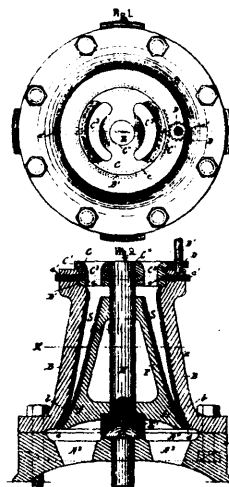
42281 Ingalls' Electric Lamp Hanger.



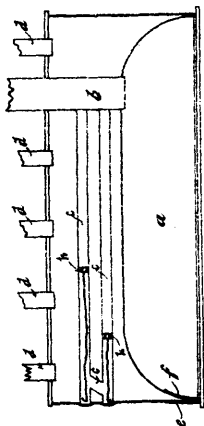
42282 Peay's Car Wheel Guard.



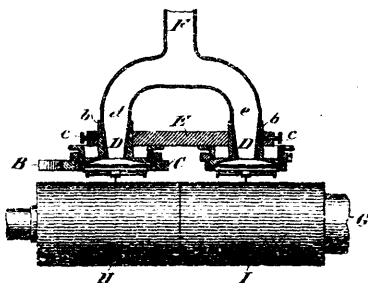
42283 Jenkins' Step Bearing Device.



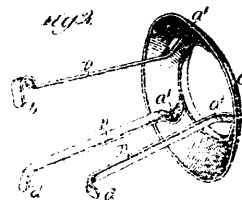
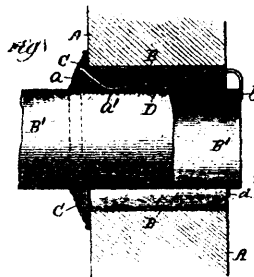
42284 Seaver's Pulverizer.



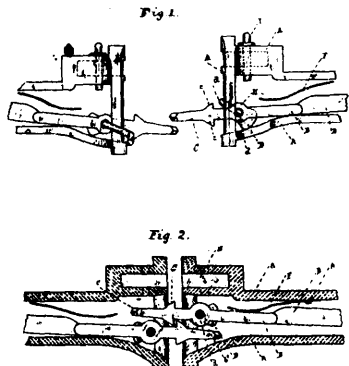
42285 Poirier's Heating Furnace.



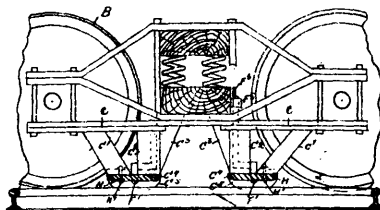
42286 Edison's Phonograph.



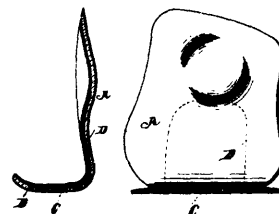
42287 Gregory's Stove Pipe and Collar Holder.



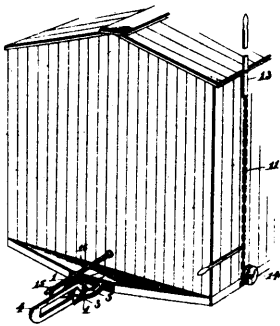
42288 Kindleberger's Car Coupler.



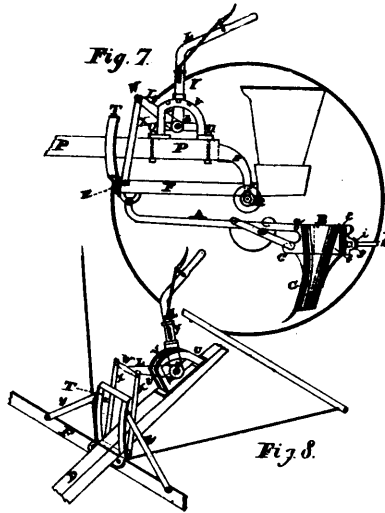
42289 Spearing's Safety Attachment for Cars.



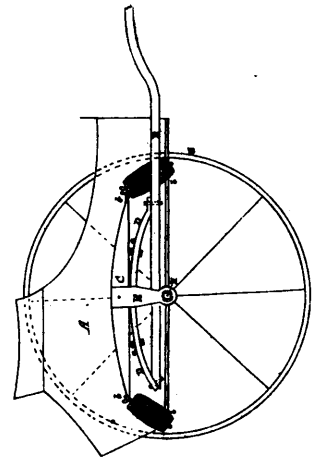
42290 Pugsley's Ankle Supporter.



42291 Carpenter's Car Coupler.



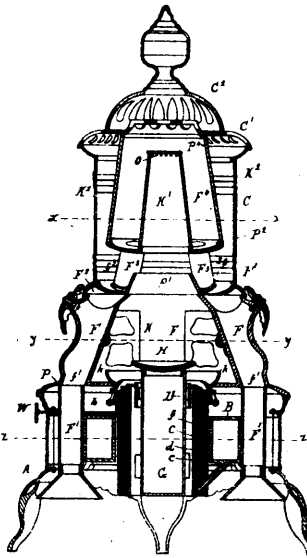
42292 Coulthard's Cultivator and Seeding Machine.



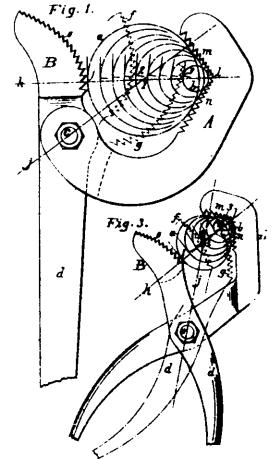
42293 Shepherd's Vehicle Spring.



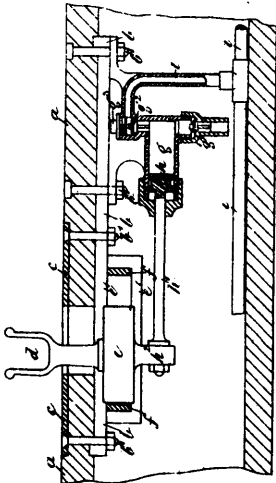
42294 Bresse and Consigny's Wire for making Pegs for Boots and Shoes.



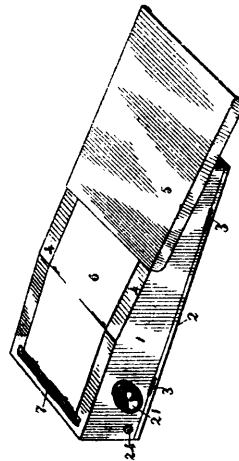
42295 Benedict's Oil Stove.



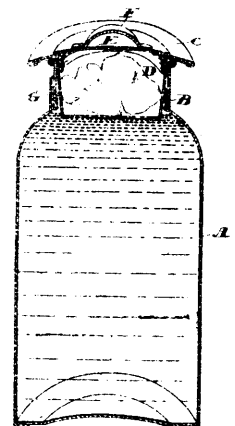
42296 Gunnarson's Wrench.



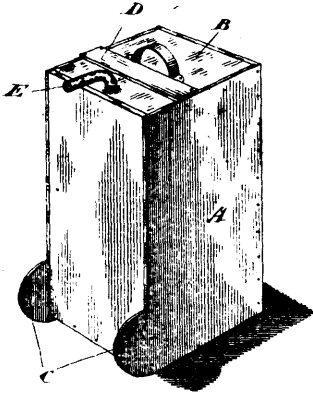
42297 Clapham's Apparatus for Propelling Boats and Air Storage for same.



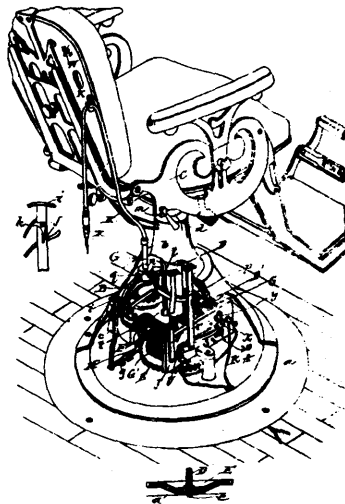
42298 Pinkney's Stenographer's Table.



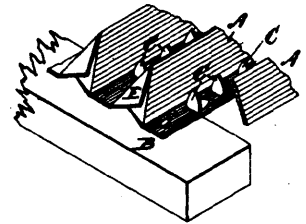
42299 Clark's Milk Can Lid.



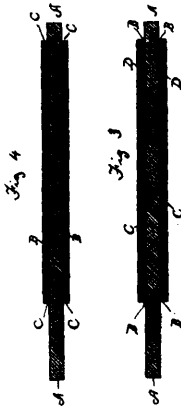
42300 Schooley's Oil Can Casing.



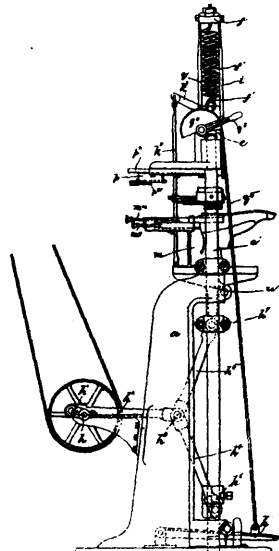
42301 Gould's Dental Chair.



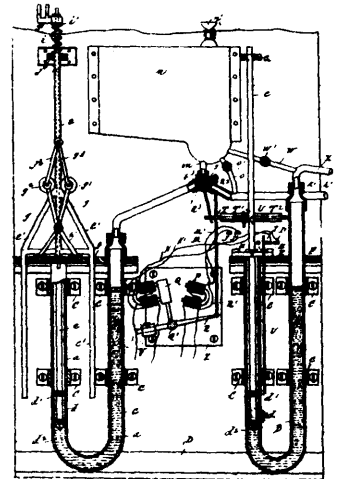
42302 Miller's Cattle Guard.



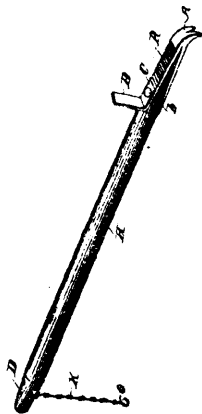
42303 Everson's Mode of making Compound Metal Tubes.



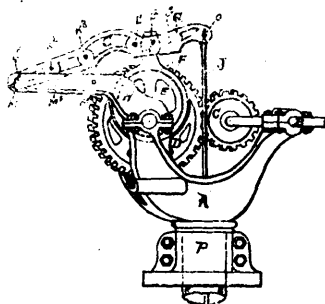
42304 Webster's Heel Nailing Machine.



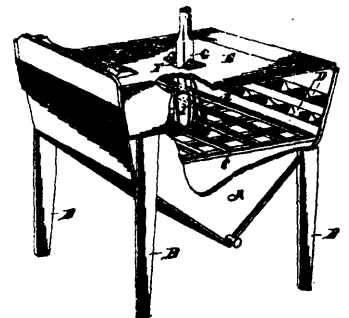
42305 Shields' Temperature Regulator.



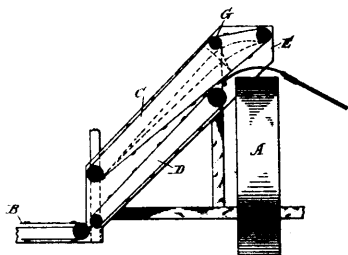
42306 Richardson's Wire Stretcher.



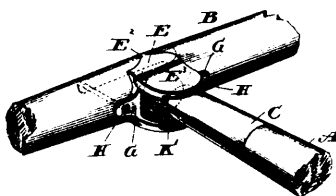
42307 Martin's Mechanical Motion for Pumping Machines.



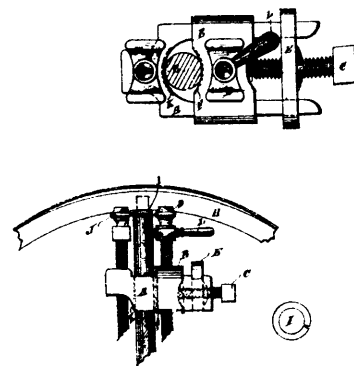
42308 Wilson's Washing Machine.



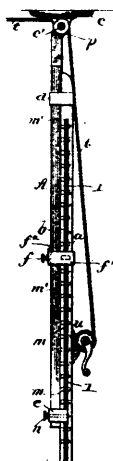
42309 Kane's Harvester Elevator.



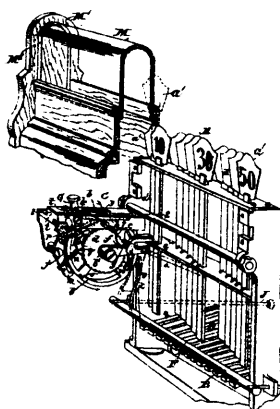
42310 Cox's Neck Yoke.



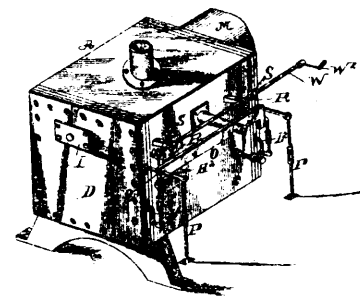
42311 Rickers' Machine for Tightening Tires.



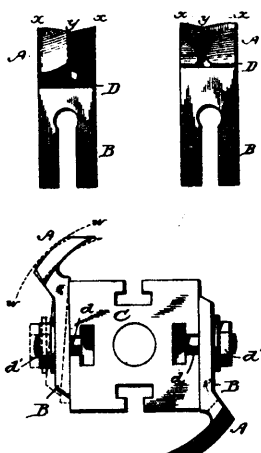
42312 Stokely's Wire Stretcher.



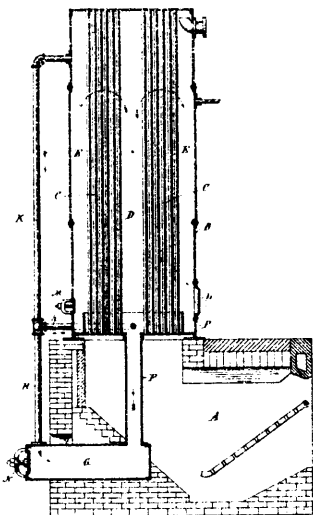
42313 Foote's Cash Register and Indicator.



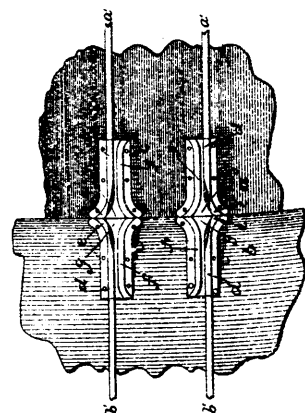
42314 Powell's Steam Engine.



42315 Gollins' Bit for Wood Working Machine.

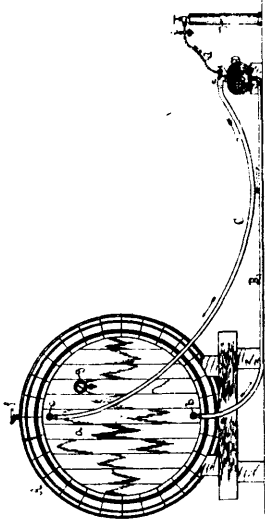


42316 Baker's Vertical Boiler.

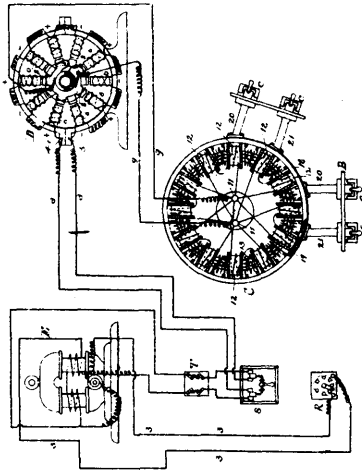


42317 Rever's Means for Transferring Railway Cars to and from floating Vessels.

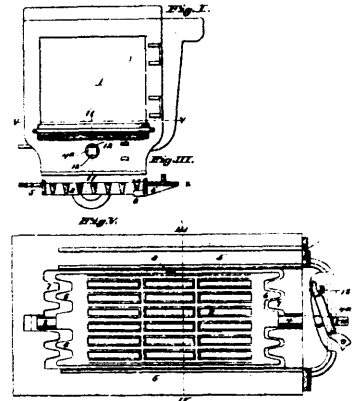




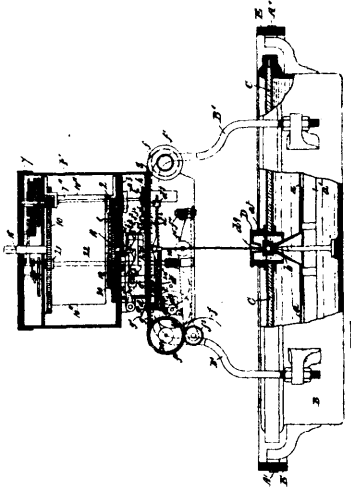
42318 Feigenspan's Apparatus for Impregnating Beer with Carbonic Acid.



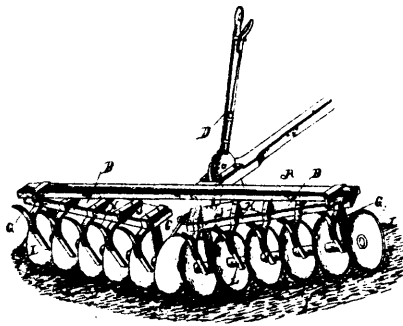
42319 Burton, Eddy and Briggs' Electric Metal Heating Machine.



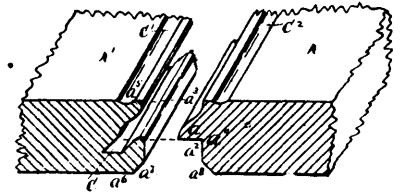
42320 Culver's Grate for Ranges and Stoves.



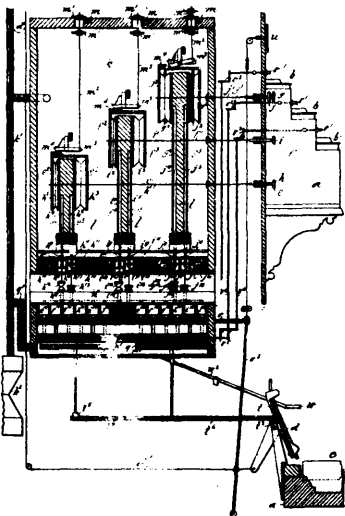
42321 Wrigley and Hope's Compass.



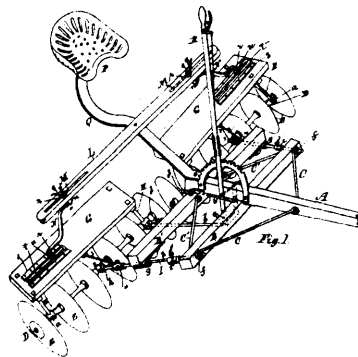
42322 Merrick's Cleaner for Disc Harrows.



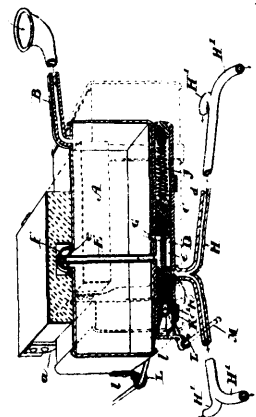
42323 Feldmann's Lumber for Flooring, &c.



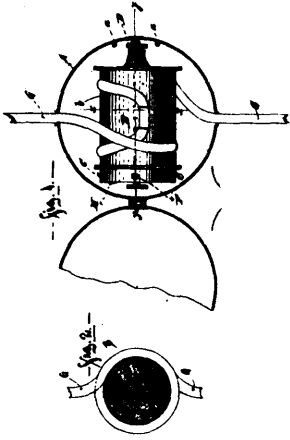
42324 Haskell's Organ.



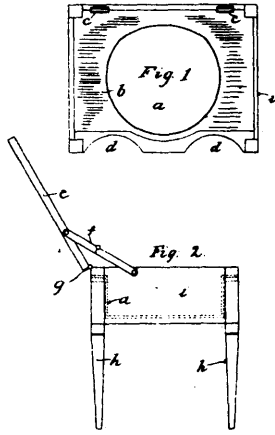
42325 Woodlan's Disc Harrow.



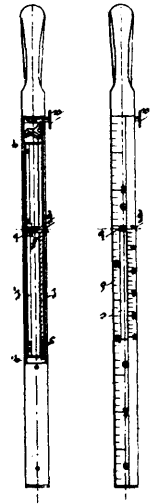
42326 Clouston's Lubricator.



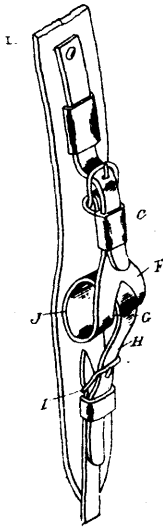
42327 Kidd's Apparatus for Raising and Lowering Incandescent Electric Lamps.



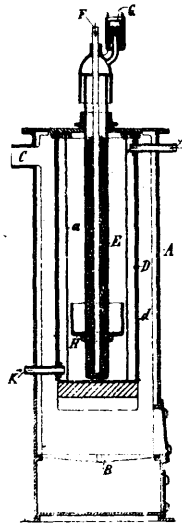
42328 Gosden's Hip Bath.



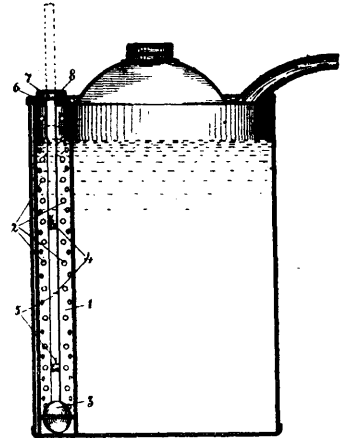
42329 Boas and Weinmann's Measure.



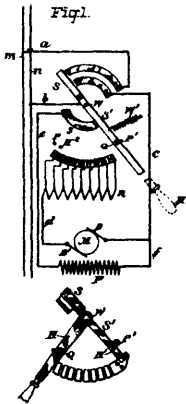
42330 Marshall's Thill Tug.



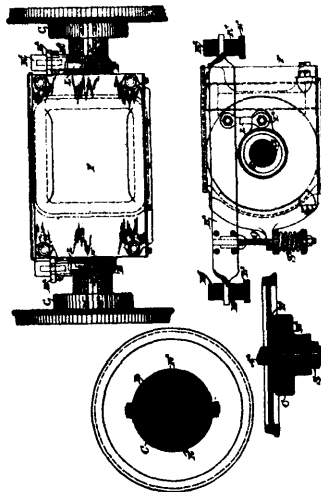
42331 Niewerth's Apparatus for making chemicals by electricity.



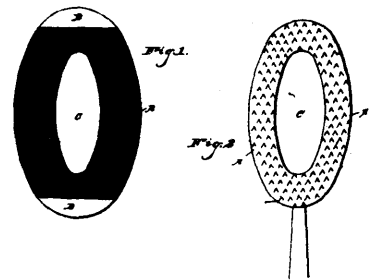
42332 Lewis' Liquid Gauge.



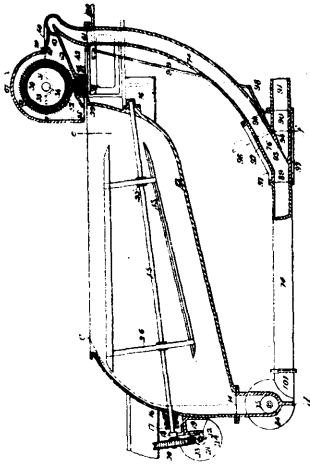
42333 Rice's Motor Switch.



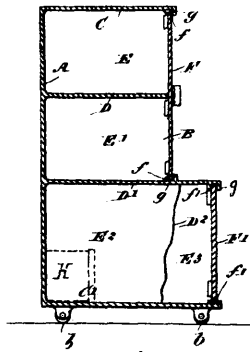
42334 Bassett's Electric Locomotive.



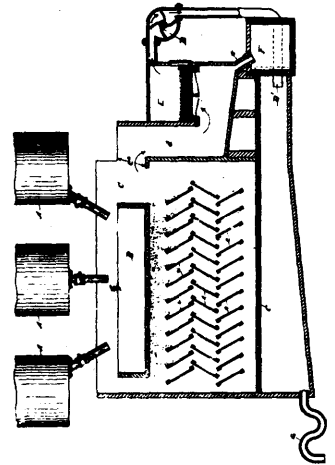
42335 Tompkin's Foot Rasp for Horses.



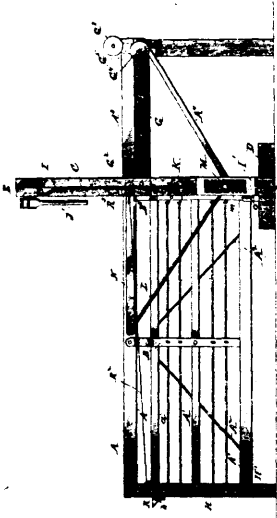
42336 Taylor's Engine.



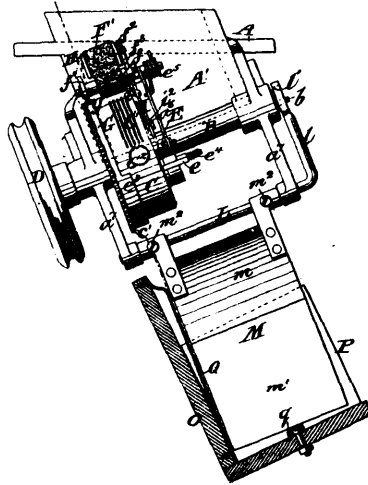
42337 Keen's Trunk, &c.



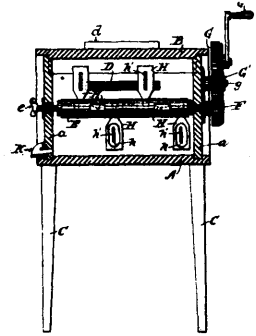
42338 Dow's Means for obtaining Bromine from natural Brine.



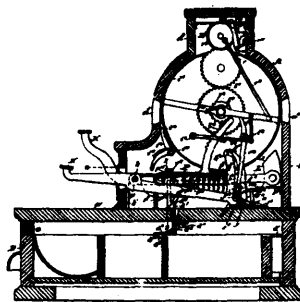
42339 Casper's Gate.



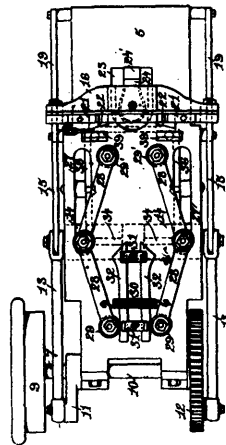
42340 Landfear's Mail Cancelling and Post marking machine.



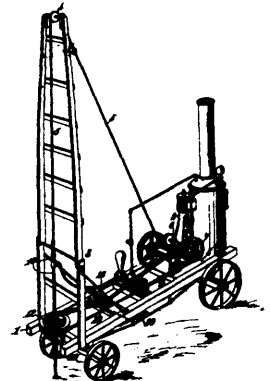
42341 Bushaw's Churn.



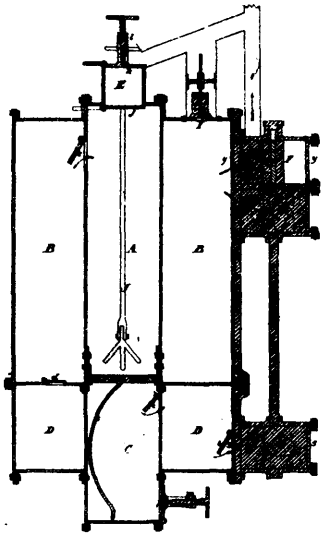
42342 Webster's Cash Registering and Indicating Machine.



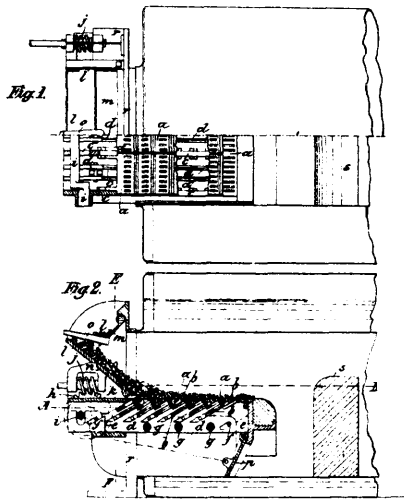
42343 Wike's Horse Shoe Bending Machine.



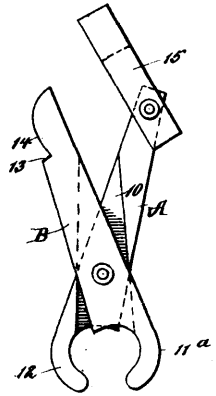
42344 MacEachen's Apparatus for Drilling Wells.



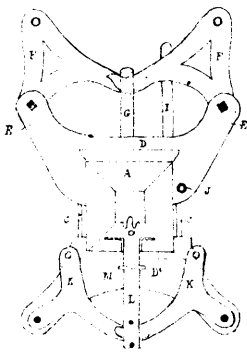
42345 Silverwood's Fire Motor.



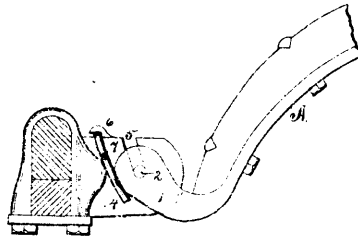
42346 Dobb's Furnace Grate.



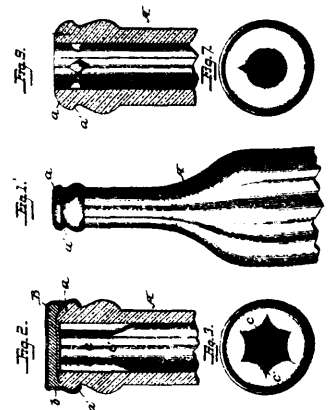
42347 Lookwood's Clothes Pin.



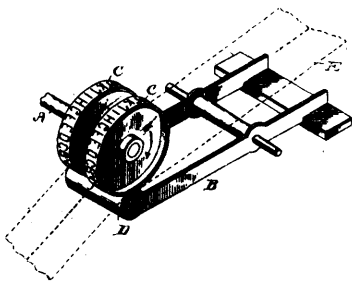
42348 Wynn's Car Coupler.



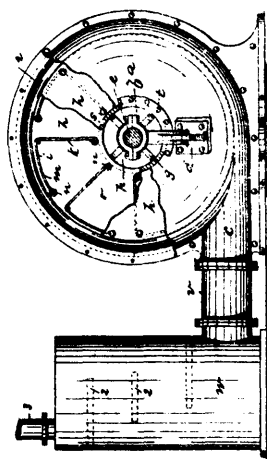
42349 Root's Thill Coupler.



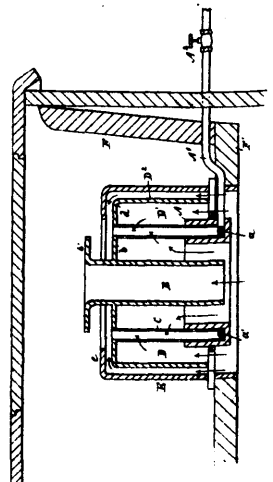
42350 Straus' Bottle.



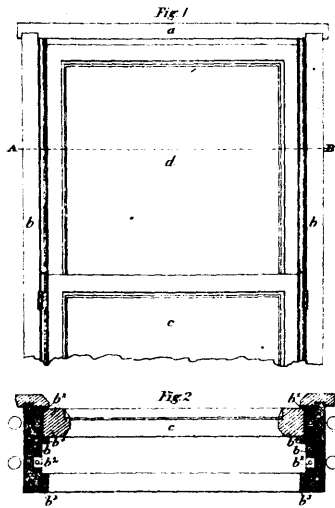
42351 Bates and Hoevenbergh's Printing Telegraph.



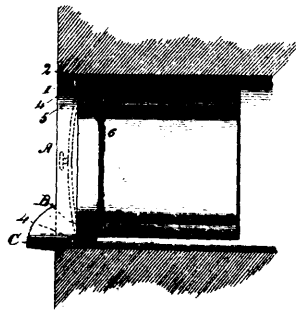
42352 Ruble's Blower and Smoke Consumer.



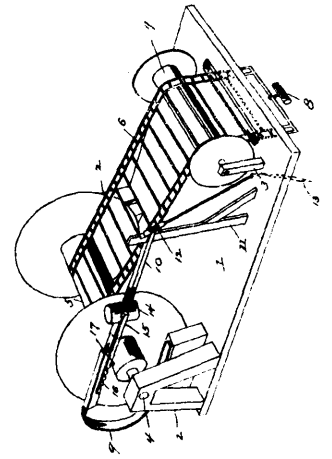
42353 Mummy's Hydrocarbon Burner.



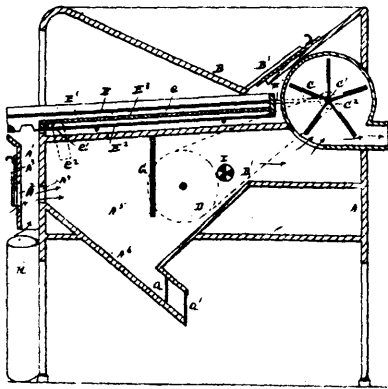
42354 Clere's Window Sash.



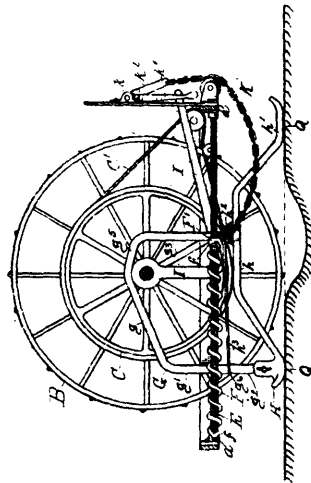
42355 Cassel's Pipe Thimble.



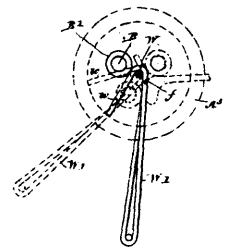
42356 Howell's Fire Escape.



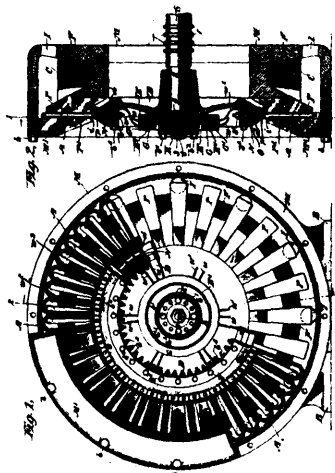
42357 Davidson's Grain Cleaner and Grader.



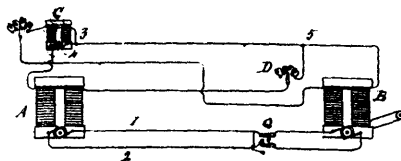
42358 McCloskey's Harvester.



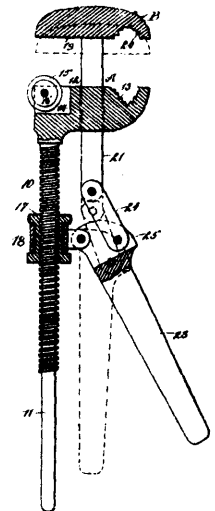
42359 Taylor's Wire Attaching Device.



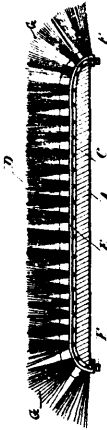
42360 Lundell's Dynamo Electric Machine.



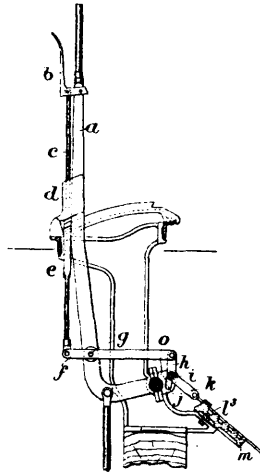
42361 Leonard's Electric transmission of Power.



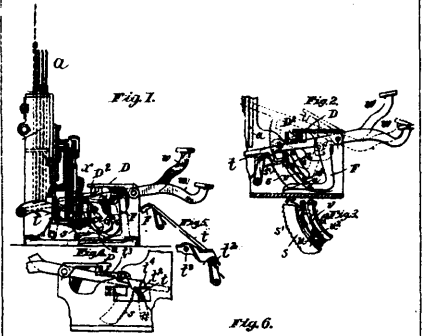
42362 Fletcher's Wrench.



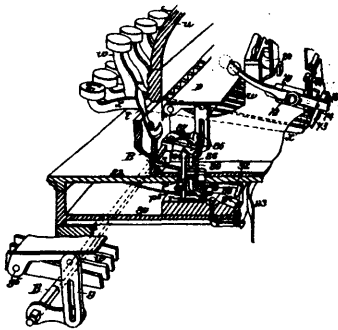
42363 Smith's Brush.



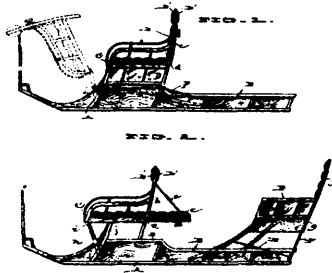
42364 Dutton's Interlocking Apparatus for Railway Signalling.



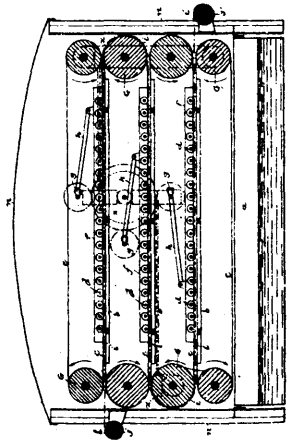
42365 Foote and Range's Cash Register and Indicator.



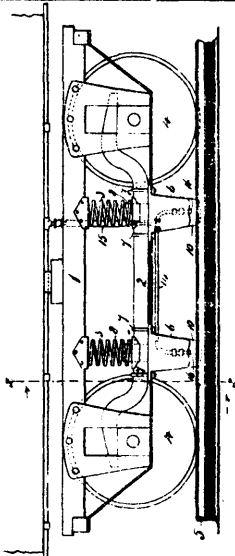
42366 Range's Cash Register.



42367 Stratton's Jump Seat for Vehicles.



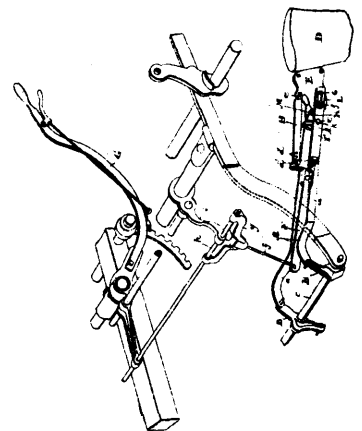
42368 Legrand's Felt-making Machine.



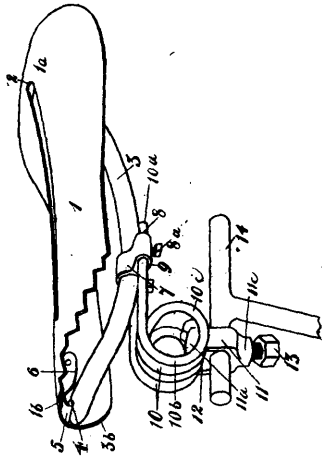
42369 Spearing's Safety Shoe and Brake for Car Trucks.



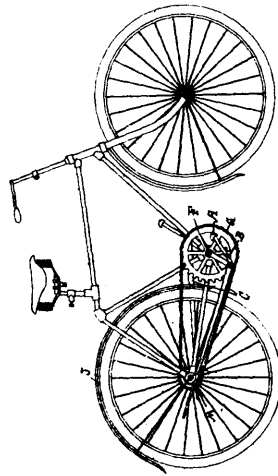
42370 Hunter's Tubular Pneumatic Action for Organs.



42371 Johnston's Seeding Machine.



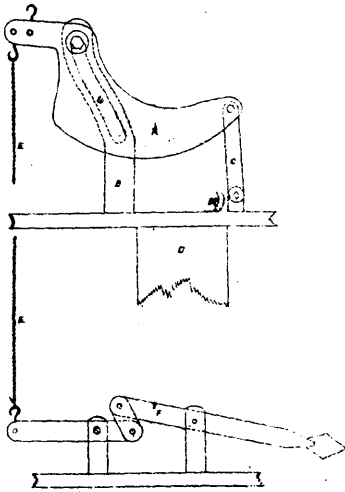
42372 Lavender's Saddle for Velocipedes.



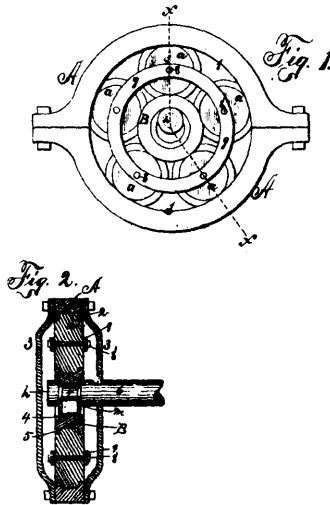
42373 Howell's Bicycle.



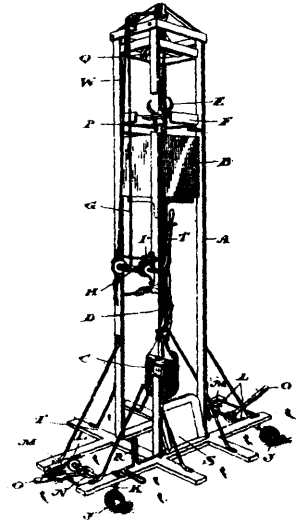
42374 McQuillen's Horse-Shoe.



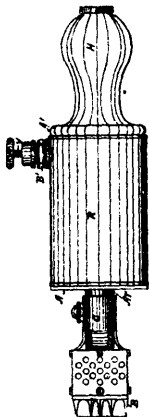
42375 Cosens' Machine for Cutting off Fish Heads.



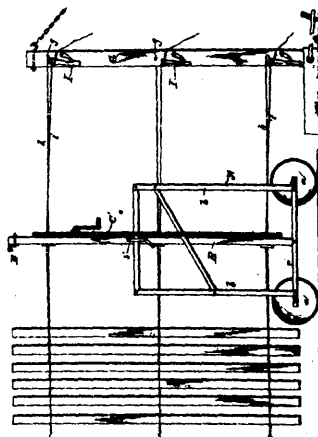
42376 Andrew's Journal Bearing.



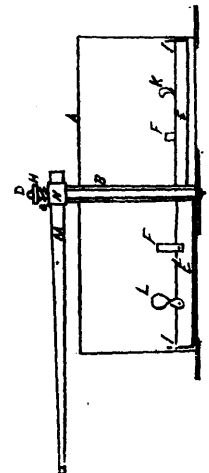
42377 Budd's Post Hole Digger.



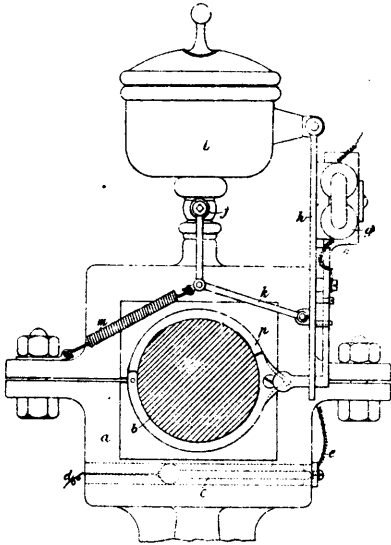
42378 Fitzmaurice's Branding Tool.



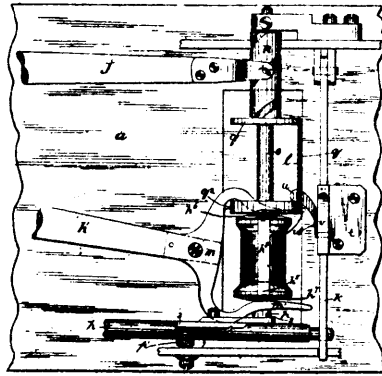
42379 Hoag's Fence-making Machine.



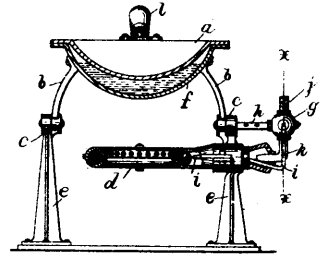
42380 Brown's Machine for Mixing Mortar, &c.



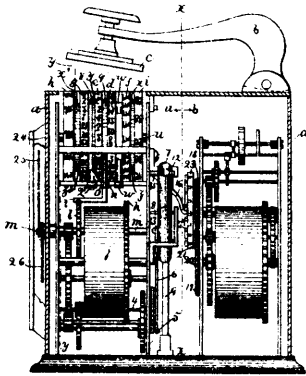
42381 Tavernier and Martin's Lubricator.



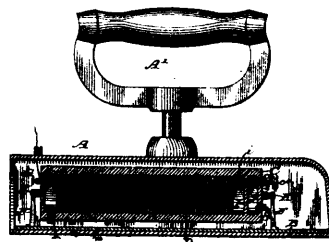
42382 Boppel's Sewing Machine.



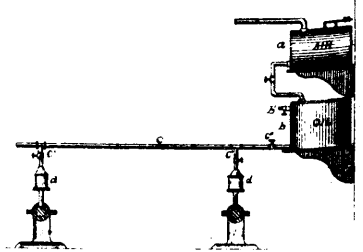
42383 Doty's Oyster Cooker.



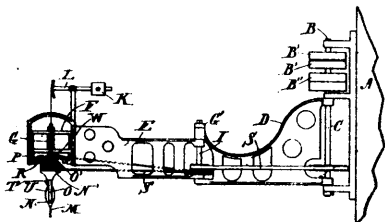
42384 Symond's Time Stamp.



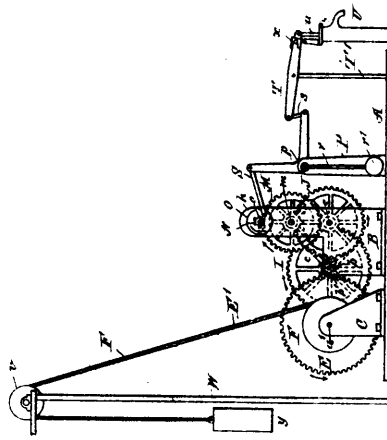
42385 Butterfield's Vacuum Core for Electrical Heating Device.



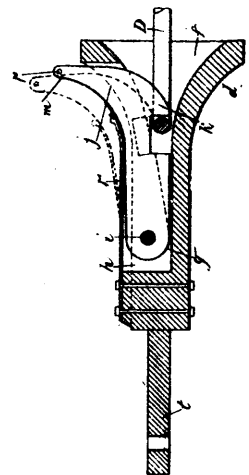
42386 Fitzgerald's Lubricator.



42387 Layer and Taylor's Carving Machine.

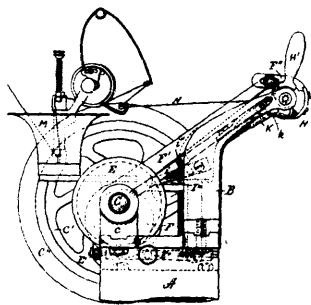


42388 Henderson's Motor for Driving Pumps.

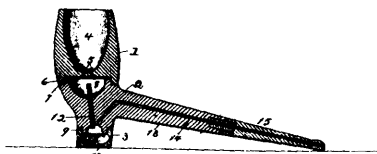


42389 Brown's Car Coupler.

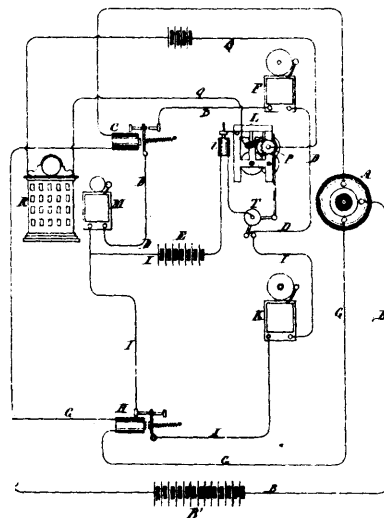




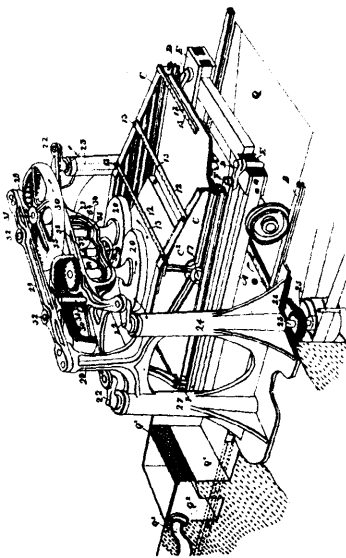
42390 Ober's Sewing Machine.



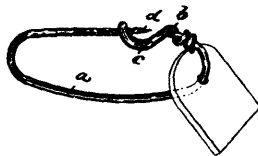
42391 Edler's Tobacco Pipe.



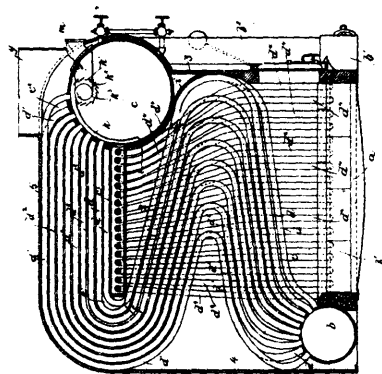
42394 Cortland's Fire Alarm.



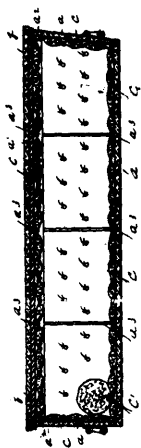
42395 Hill's Machine for Beveling Plate-Glass.



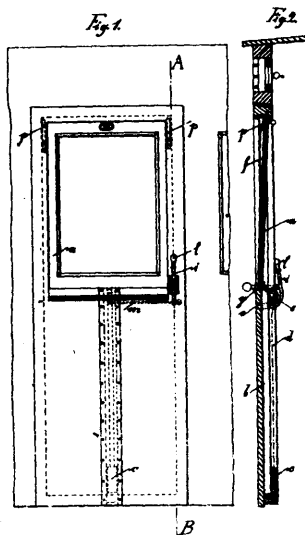
42396 Frisen's Fastening Device.



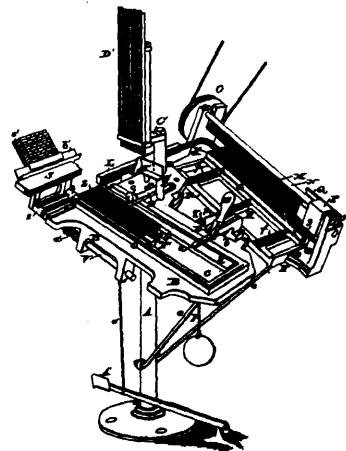
42397 Mosher's Steam Generator.



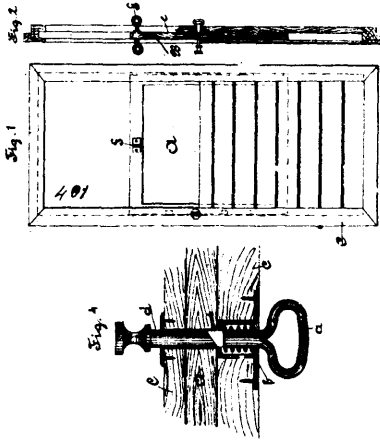
42398 Gooding's Coffin.



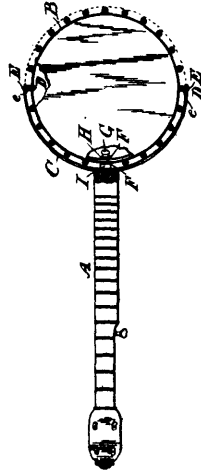
42399 Wahls' Window for Carriages, &c.



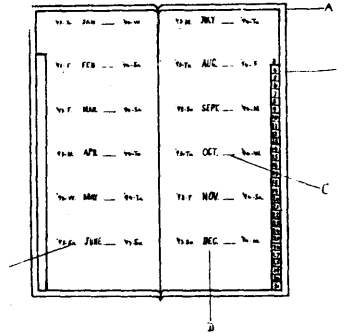
42400 McMillan's Type-justifying Machine.



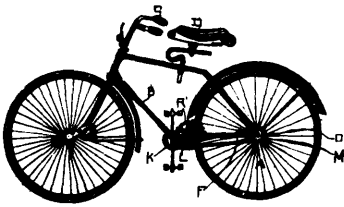
42401 Richter's Holder for Sliding Sash Windows.



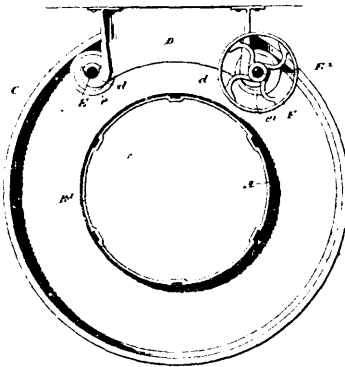
42402 Middlebrooke's Banjo.



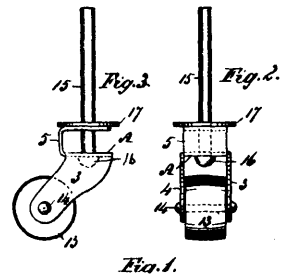
42403 Meeker's Diarie.



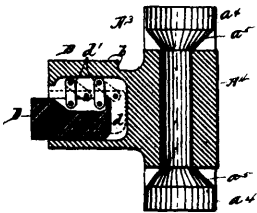
42404 Goodhue's Bicycle.



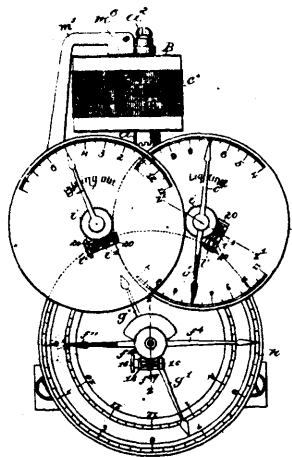
42406 Taylor's Means for Supporting and Driving Rotary Screens, &c.



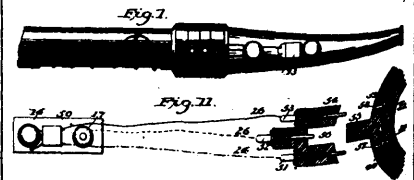
42407 Osmond's Furniture Caster.



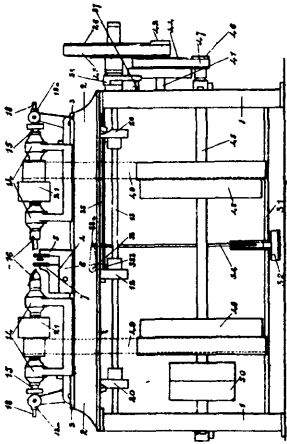
42408 Fox's Car Coupler.



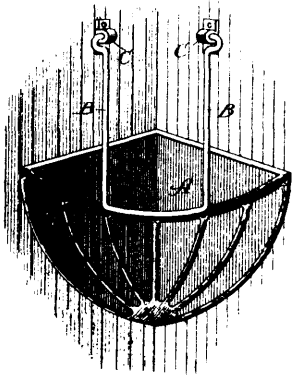
42409 Snoeck's Gas Lighter and Extinguisher.



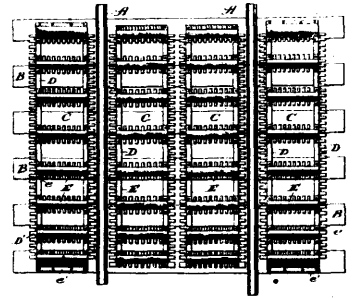
42410 Fowler's Electrical Hose Signalling Apparatus.



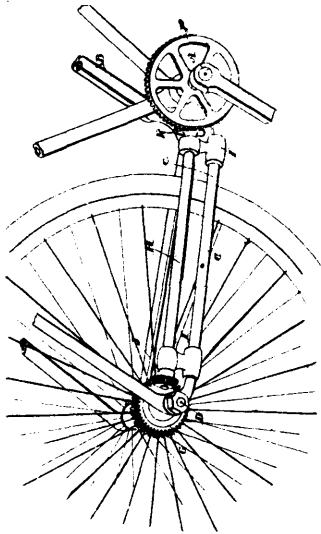
42411 Barthelmes' Braising Machine.



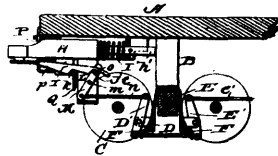
42412 Doolan's Hay Saver.



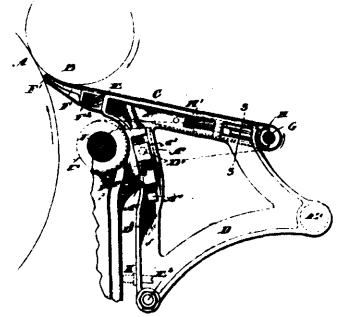
42413 Seymour's Cattle Guard.



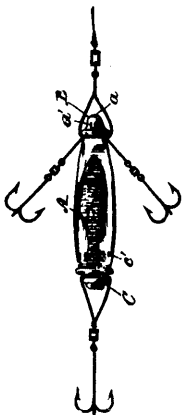
42414 Cutler's Bicycle.



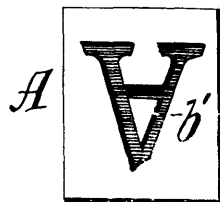
42415 Farnsworth's Car Brake.



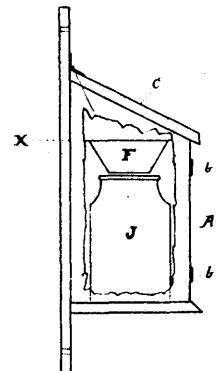
42416 Conkling's Feeding Device.



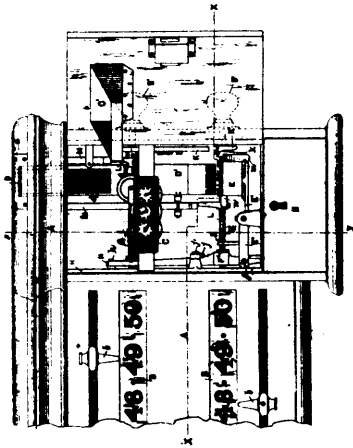
42417 Welch's Trolling Apparatus.



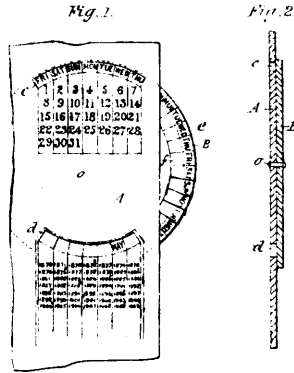
42418 Barnes' Method of making Rubber Stamps from Type and Casts.



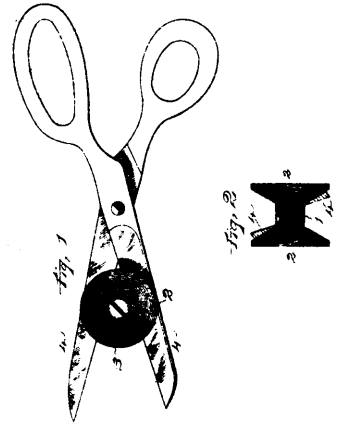
42419 Robson's Device for Receiving Mail Matter, Milk, Parcels, &c.



42420 Callandar's Coin Freed Mechanism.



42421 Dreyfus' Calendar.



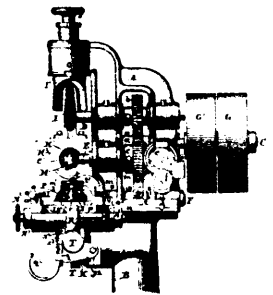
42422 Collum's Sharpener for Scissors.



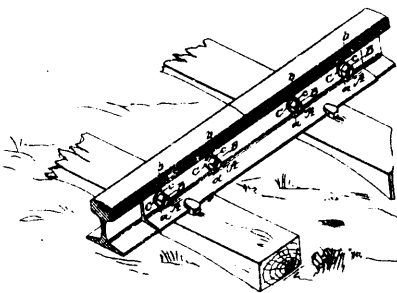
42423 Munn's Cattle Guard.



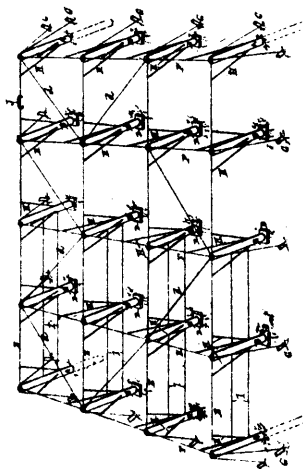
42424 Morrison's Machine for making Veneer.



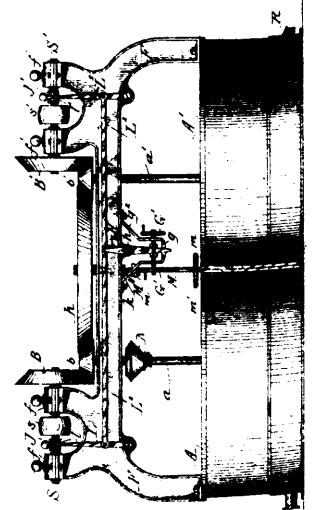
42425 Coté's Heel Stiffener Forming Machine.



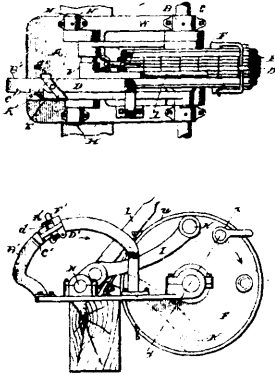
42426 Rice and Kirk's Nut Lock.



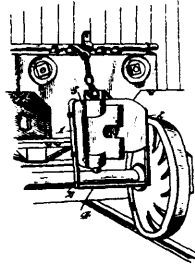
42427 Russell's Trellis for Hop and Grape Vines.



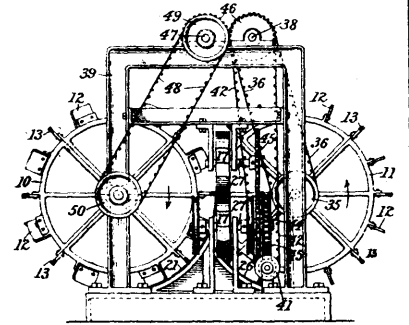
42428 Head's Starting Gear for High Speed Rotary Machines.



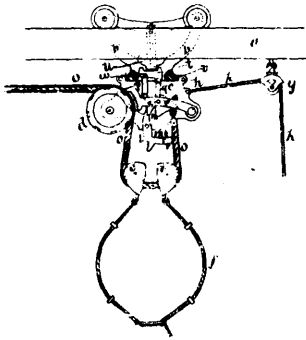
42430 Dodd's Setting Device for Saw Mill Carriages.



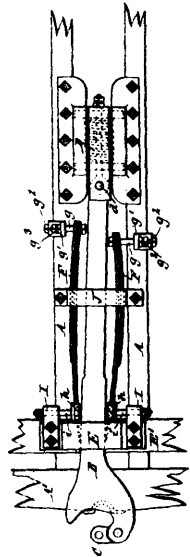
42431 Trammell's Car Coupler.



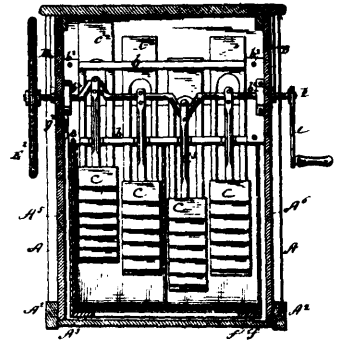
42432 Acosta's Fibre Preparing Machine.



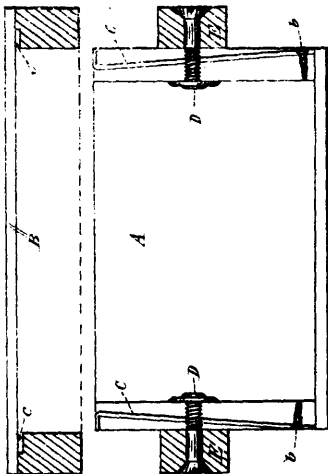
42433 Emerson and Campbell's Sling Carrier.



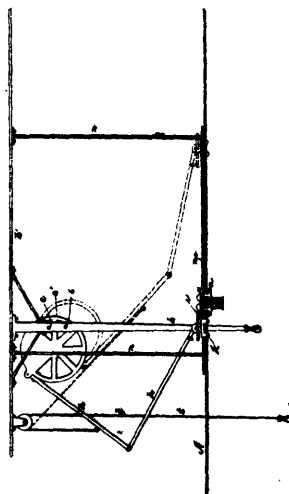
42434 Bissell's Draw Gear for Railway Cars.



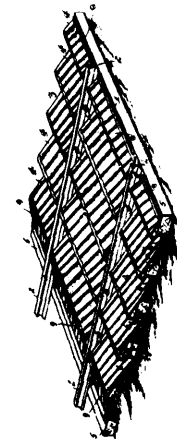
42435 Grondahl's Washing Machine.



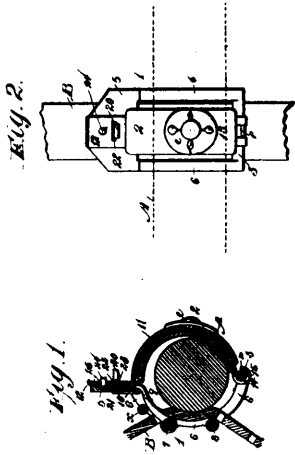
42436 Murley and Ritchie's Egg Case Fastener.



42437 Dillenbeck's Cash Carrier.



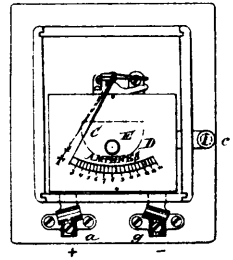
42438 Callaghan and Horn's Cattle Guard.



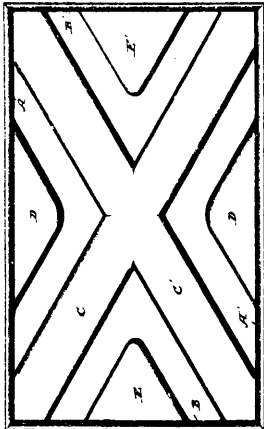
42439 Grammer's Shaft Tug.



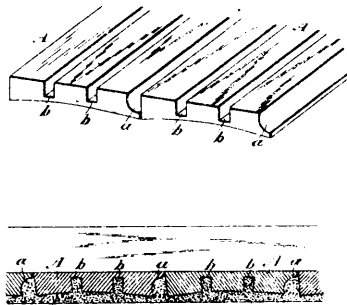
42440 Simmons' Snap and Buckle.



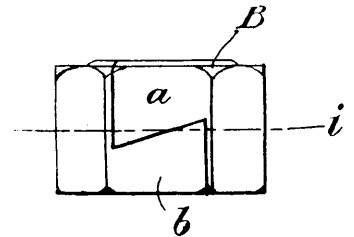
42441 Wood's Electric Measuring Instrument and Current Direction Indicator.



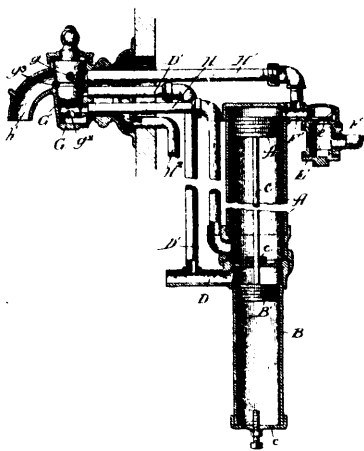
42442 Brunson's Side Walk.



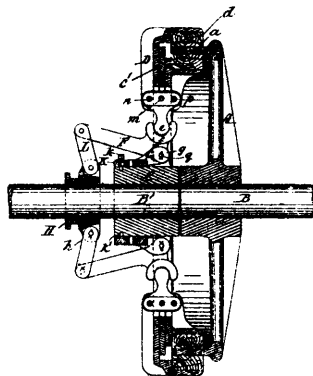
42443 Toney's Lath.



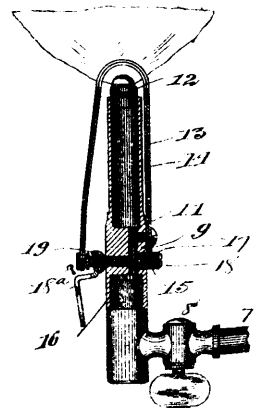
42444 Burdick's Nut.



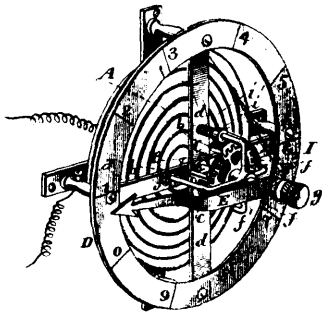
42445 Weatherhead's Pump.



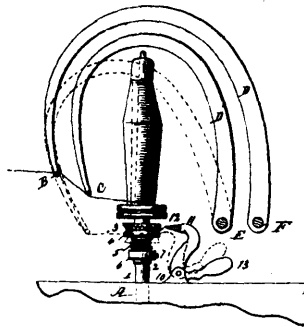
42446 Munro and Claussen's Friction Clutch.



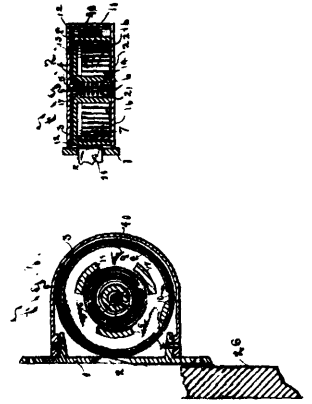
42447 Spear's Gas Burner.



42448 Krough's Thermostat.



42449 Huyck's Spinning Spindle.



42450 Jenkinson's Sash Balance.