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The Canadian Patent Office

RECORD

Vol. XIV.—No. 6.

JUNE, 1886.

Price in Canada \$2.50 per An.
United States — \$2.50 “

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INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

No. 23,963. Swimming Apparatus.

(Appareil de Natation.)

William J. Corbett, Tucson, Arizona, U.S., 3rd May, 1886; 5 years.

Claim.—1st. The combination, in a swimming apparatus, of a support, a toe-blade pivoted at its inner edge to the support at a point back from the inner edge thereof, and a feathering web having one edge secured to the outer edge of the toe-blade, and its opposite edge secured to the toe end of the support, all arranged and operating substantially as and for the purposes specified. 2nd. In a swimming apparatus, the combination of the support provided with a staple C, of the blade frame, consisting of rods B engaged at their inner ends with staple C, and the web covering apparatus, comprising a support, a double armed frame projected rearwardly from said support, as described, and a blade pivoted to one of and adjustable to and from the other of such arms, substantially as set forth.

No. 23,964. Trolling Bait. (Amorce de Trole.)

William D. Chapman, Theresa, N.Y., U.S., 3rd May, 1886, 5 years.

Claim.—1st. In a trolling-bait, the combination of the rod, having the line, swivel and hook attached to its ends, the sleeve having strips secured to it to form the outlines of a fish, and propeller-shaped wings secured upon the sleeve in the wider portion of the outlines of the fish, and having their concave faces facing forward, as and for the purposes shown and set forth. 2nd. In a trolling-bait, the combination of the rod, formed with eyes at its ends, for the attachment of the line and the hook, and having the side hook attached to the forward eye, the sleeve turning upon the said rod, the strips secured to the sleeve with the edges of their forward ends oblique to the axis twisted and bulged to form a bulge near their forward ends, and secured at their rear ends to the sleeve, as described, and the propeller-shaped wings secured in an inclined position upon the sleeve in the space between the bulges or the strips, and having the concave forwardly facing sides striped in bright colors, as and for the purpose shown and set forth.

No. 23,965. Rotary Escape Movement for Clocks, etc. (Echappement Rotatoire pour Horloges, etc.)

William D. Chapman, Theresa, N.Y., U.S., 3rd May, 1886, 5 years.

Claim.—1st. In a revolving escape movement, consisting of a lever M, having a slot I concentric with the pivot J, and two corresponding slots V V', at right angles thereto in opposite directions, so as to form corresponding shoulders c, e, in the slot I, in combination with the crank L, substantially as herein described. 2nd. In combination with the revolving escape mechanism herein described, consisting of a crank L, slotted lever M vibrating on a pivot J centrally, the intermediate lever P and flexible strap D adapted to be used in a horizontal reciprocating movement in clocks and watches, substantially as herein set forth.

No. 23,966. Car Ventilator. (Ventilateur de Char.)

Ebenezer S. Perry, New Bedford, Mass., U.S., 3rd May, 1886; 5 years.

Claim.—1st. In a ventilator, the combination, with the base pro-

vided with openings c, one above the other, of the slats a attached at one edge to the upper edge of the openings c, and extending outwardly at an angle to the base A, the slats a attached to the lower edges of the openings c, and the sides e at each end of the slats a, substantially as described. 2nd. In a ventilator, the combination, with the base A, having openings c, one above the other, of the slats a attached at one edge to the upper edge of the openings, and extending outwardly at an angle to the base A, the slats a attached to slats a, so as to form an angle therewith, the slats b attached to the lower edges of the openings c, and the sides e at each end of the slats a, provided with openings d, substantially as described. 3rd. In a ventilator, the combination, with the base A, having openings c, one above the other, of the slats a attached at one edge to the upper edge of the openings c, and extending outwardly at an angle to the base A, the slats a attached to slats a at an angle thereto, the slats d attached to the base A and to the under side of slat b and the sides e at each end of the slat a, substantially as described.

No. 23,967. Carriage Bow Slat.

(Branche de Capote de Voiture.)

Josiah W. Sherwood and John W. Sherwood, Grand Rapids, Mich., U.S., 3rd May, 1886; 5 years.

Claim.—1st. In a carriage bow slat, the combination, with the slat-iron, of two or more separate and independent pieces of veneer, one of which is arranged with its grain running circumferentially of the slat, so that the latter is encircled by continuous fibres, and the splitting of the slat by the slat-iron prevented, substantially as set forth. 2nd. In a carriage bow slat, the combination, with the slat-iron, of two or more separate and independent pieces of veneer, arranged with their grain running spirally in opposite directions, substantially as set forth. 3rd. In a carriage bow slat, the combination, with the slat iron, of the core C and a covering veneer having its grain running around said core, so that the latter is encircled by continuous fibres, substantially as set forth. 4th. In a carriage bow slat, the combination of a tapering tube, a slat-iron having a circumferentially ribbed extension inserted in the smaller end of said tube, and a cement filling of a conical form situated in the tapering tube and surrounding said ribbed extension, substantially as set forth.

No. 23,968. Locomotive Boiler.

(Chaudière de Locomotive.)

Charles B. Coventry, Chicago, Ill., U.S., 3rd May, 1886, 5 years.

Claim.—1st. In a locomotive boiler, provided with heating flues and with continuous return or superheating flues, which open directly and from but one direction into a smoke-chamber D extended over the fire-box, a supplemental crown-sheet over the fire-box, to the forward end of which crown-sheet the upper rear segment of the flue-sheet is attached or fastened, all arranged in one boiler or shell, substantially as described. 2nd. In a locomotive boiler, provided with heating flues and with continuous return or superheating flues, which open directly and from but one direction into a smoke-chamber D extended over the fire-box, a supplemental crown-sheet over the fire-box to the forward end of which crown-sheet the upper rear segment of the flue-sheet is attached or fastened, connected to the crown-sheet proper by stay bolts, all arranged in one boiler or shell, substantially as described. 3rd. In a locomotive boiler, provided with heating flues, and with continuous return or superheating flues, which open directly and from but one direction into a smoke chamber D extended over the fire-box, a supplemental crown-sheet over the fire-box to the forward end of which crown-sheet the upper rear segment of the flue-sheet is attached or fastened, connected to the crown-sheet proper by stay bolts, all arranged in one boiler or shell, substantially as described. 4th. In a locomotive boiler, a segment of flue-sheet located substantially over the front end of the fire-box in which the rear ends of the return-flues terminate, and which forms the forward end of the smoke-chamber D extended over the fire-box, substantially as described.

No. 23,969. Fire Pot, or Fire Back for Stoves, etc. (Boîte à Feu pour Poêles, etc.)

Thomas G. Wantess, Parkdale, Ont., 3rd May, 1886; 5 years.

Claim.—In a fire-brick or fire-pot, as now in use, the casting of ribs *C* on the face thereof, substantially as shown and described and for the purposes set forth.

No. 23,970. Bundle Carrier for Self-Binding Harvesters. (*Porte-Gerbe pour Moissonneuses-Lieuses.*)

John C. McLachlan, London, Ont., 3rd May, 1886; 5 years.

Claim.—1st. A slotted carrier *A*, formed with turned-up sides *A*, substantially as described and for the purpose specified. 2nd. A slotted carrier *A*, in combination with an arm *B* to which it is attached and braced, substantially as shown. 3rd. A crank rod *C* pivotally attached to the frame of the harvester machine, substantially as shown and described. 4th. A tubular arm *B* attached to a crank rod *C*, substantially as described and for the purpose specified. 5th. A slotted bracket *G*, or its equivalent, for the purpose of locking and retaining the slotted carrier in a position to retain the bundles or sheaves thereon. 6th. A spring *K* for automatically raising and locking a bundle carrier in position after delivering the bundles or sheaves, and there to remain until tripped again when required, substantially as described.

No. 23,971. Medical Compound for the Cure of Womb Diseases, Cancers, Ulcers, Scalds, etc.) (*Composition Médicinale pour le Traitement les Maladies de Matrice, Cancers, Ulcères, Brûlures, etc.*)

Philomène Dumais, Hull, Que., 4th May, 1886; 5 years.

Claim.—1st. The herein described composition of matter forming a lotion to be used for the cure of the several diseases herein mentioned, consisting of high wines, iodoforn, carbonate of soda, vinegar, extract of gold thread and sulphate of alum, in the proportions specified. 2nd. The herein described composition of matter forming an ointment to be used for the cure of the diseases herein mentioned, consisting of yolk of egg, iodoforn, salt and white pepper, in the proportions specified.

No. 23,972. Artificial Leg. (*Jambe Artificielle.*)

George Beacock and Torrence Sparham, Brockville, Ont., 4th May, 1886; 5 years.

Claim.—1st. In an artificial limb, the combination of a leg, the front lower edges of which are cut to straddle the instep of a foot, with a foot, the instep of which is arched or formed on a circle, substantially as specified. 2nd. In an artificial limb, the combination of a leg and a foot, a pivot passing through both of these members at a point substantially in a vertical line with the front of the leg, and a bar passing through both of these members and adapted to move in slots formed in the foot substantially as specified. 3rd. The combination, with the leg *D*, a band *A* having the pockets *A*, of the rawhide arm or joint *C* adapted to fit the pin *B* of the leg, and the pockets *A* of the band, substantially as specified. 4th. The combination of the leg *D*, the reinforce *D*, the pin *B* having the flange *B*, the arm or joint *C* and the screw and washer *B*, substantially as shown and described. 5th. An artificial foot, made of a single piece of rawhide and having slots *E*, in combination with the leg *D* and the bolts or rods *E*, *G*, substantially as shown and described.

No. 23,973. Button. (*Bouton.*)

Theodore L. Snyder, New York, N.Y., U.S., 4th May, 1886; 5 years.

Claim.—1st. A button, composed of a body of solid inflexible material, having a dovetailed recess provided with a convex base, substantially as set forth. 2nd. The combination, with a button of the character hereinbefore described, having a dovetailed recess provided with a raised base or bottom, of a concave convex flange adapted to fit into said recess and form a holding ground for the attachment of a flexible shank, substantially as and for the purpose set forth. 3rd. A button, having a dovetailed recess in its under side, provided with a convex base, of a flange adapted to fit into said recess, and a flexible attaching-shank provided with means whereby the same may be clamped between said button and said flange, substantially as set forth.

No. 23,974. Combined Spoon and Scraper.

(*Cuiller et Grattoir Combinés*)

Emery J. Averill, Bangor, Me., U.S., 4th May, 1886; 5 years.

Claim.—1st. A spoon bowl, formed with a truncated point, and having its side edges concaved from the extremities of the point to points, at or near the line of greatest width of the bowl, substantially as described. 2nd. A spoon bowl, formed with a truncated point, having its side edges concaved from the extremities of the point to points at or near the line of greatest width of the bowl, thence again concaved toward the butt end of the bowl, substantially as described. 3rd. The combination, with a shank or handle, of a spoon bowl formed with a truncated point, having its side edges concaved from the extremities of the point to points at or near the line of greatest width of the bowl, substantially as described.

No. 23,975. Gun Barrel. (*Canon de Fusil*)

John K. Ballard, John F. Hum and David Loudon, Grayling, Mich., U.S., 5th May, 1886; 5 years.

Claim.—1st. A fire-arm barrel, having an annular groove a short distance in front of the breech, and which groove increases in diameter in the direction from the muzzle to the breech, and forms a shoulder at its largest end, substantially as herein shown and described. 2nd. The combination, with the breech-piece *E*, having the socket *G* of the barrel section *F* having a neck *H* in the socket *G*, which neck has its bore flared at the end to form an annular groove *C*, substantially as shown and described.

No. 23,976. Process for the Manufacture of Confections. (*Procédé de Fabrication des Conerves.*)

George C. Huttemeyer, Toronto, Ont., and Francis P. Torry, Batavia, N.Y., U.S., 5th May, 1886; 5 years.

Claim.—1st. The within-described process for the manufacture of a confection, containing a substance hold independent of the material composing the confection, the said process consists in spreading the substance to be concealed upon a warm sheet of confection, folding the covered surface together, and cutting the sheet into tablets, so that the edge of each tablet shall be sealed by the outer. 2nd. The within-described process for the preparation of a confection, and containing a substance hold independent of the material composing the confection, the said process consisting in boiling sugar, raffino, cream of tartar and water, substantially in the proportions specified, to a heat of about 320 to 340 degrees Fahrenheit, spreading the compound thus prepared into a sheet, the surface of which is coated with the substance to be concealed, folded together and cut into small tablets, substantially in the manner and for the purpose hereinbefore described. 3rd. As a product of the within-described process, the tablets *C*.

No. 23,977. Stenographic Machine.

(*Machine Sténographique.*)

Robert Tyson, Toronto, Ont., (assignee of Arthur R. Bailey, Norwich, Ct., U.S.), 5th May, 1886; 5 years.

Claim.—1st. A type plate for use with stenographic machines of the class referred to, consisting of a body portion of desired shape having secured to its face an electrotyped form of desired characters, as described. 2nd. In a machine of the class referred to, in combination with a suitable bed, ways suspended over said bed, as described, a type plate formed with a body portion adapted to travel on said ways, and having secured to its face an electrotyped form of desired characters, and means, substantially as described, for moving said type plate on its ways for the object specified. 3rd. In combination with bed *a*, frames *k*, *k* secured to said bed, roll *n* pivoted in said frame, as described, and a bearing roll located over said roll *n*, supported in vertically slotted bearings in frames *k*, *k*, substantially as herein described, and for the object set forth. 4th. In a machine of the class referred to, a type plate carrying a series of fixed characters, supported and adapted to be moved across the sheet of paper, as described, a series of lever platens (one for each character) pivoted at one end and extending beyond the line of movement of said type plate, and a series of levers corresponding in number, and capable of engagements with said platens, adapted to be operated to force said platens into engagement with the type plate, all being combined substantially as and for the object specified. 5th. In combination with a suitable bed, ways suspended over said bed in a direction transverse to the line of movement of the paper, as described, a type plate adapted to travel on said ways carrying a series of fixed characters, spools rotatably supported at the ends of said ways, a cord passing around said spools and fastened to the type plate, as described, and means, substantially as herein set forth, for rotating said spools to cause said type plate to move in its ways. 6th. In combination with a suitable bed, ways suspended over said bed, as described, a type plate having fixed characters located and adapted to travel on said ways, rod *p* located adjacent to said type plate capable of longitudinal movement and provided with extensions *s*, *s*, and forked at its outer end, as described, a spring actuated escape wheel adapted to be released and checked by each longitudinal movement of said forked rod, as described, and paper feed rolls connected with and actuated by said escape wheel, substantially as herein specified, all being for the several objects stated. 7th. In combination with bed *a*, ways *i*, *i*, suspended over said bed, type plate *b* formed as described and adapted to travel on said ways, bar *p* formed, hung and adapted to be moved longitudinally by type plate *b*, as described, platens *c* pivoted and adapted to engage their respective types, as specified, spools *d* located at each end of ways *i*, *i*, one of said spools carrying ratchet discs 2-2', a cord connecting said spools and type plate, as specified, and the forked piece 3 pivoted to bar *p*, having arm 4 extending over and across the free end of the series of platens *c*, all being as and for the several purposes specified. 8th. In combination with a suitable bed, ways suspended over said bed as described, a type plate located and adapted to travel on said ways, an underscoring plate of the form specified movably secured to said type plate, and mechanism, substantially as described, for actuating said underscoring plate to produce a desired imprint. 9th. In combination with bed *a*, frames *k*, *k* secured to said bed, roll *n* rotatably fixed in said frames, a paper roll located in vertically slotted bearings over said roll *n*, companion feed rolls *u*, *u* rotatably located in the opposite end of frames *k*, *k*, as described, and spring actuated mechanism, substantially as described, for imparting an intermittent rotary movement to said feed rolls, for the object set forth. 10th. In combination with type plate *b*, having the movable underscoring plate 7, as described, a series of platens located and pivoted, as described, a corresponding series of operating levers adapted to move said platens into engagement with their respective types, as described, an auxiliary series of underscoring levers so located relative to the operating levers that the downward movement of said underscoring levers will also act to depress the main operating levers, and mechanism, substantially as herein described, for connecting said underscoring levers and underscoring plate, all being for the objects specified.

No. 23,978. Complete Adjustable Perpetual Date Calendar with Applications of the same. (*Calendrier Perpetuel Mécanique.*)

John M. Anderson, Toronto, Ont., 5th May, 1886; 5 years.

Claim.—1st. In a date calendar, a cylinder having the monthly

number of the longest month placed on it in weekly rows from top to bottom, or horizontally provided with a revolving index made to cover any or all of the last three numbers, as shown and described for the purpose set forth. 2nd. In a date calendar, a cylinder having the monthly numbers of the longest month placed on it in weekly rows from top to bottom, or horizontally provided with a revolving index containing the days of the week from Sunday to Sunday, embracing an interval of thirteen days or more. 3rd. In a date calendar, a cylinder having the monthly numbers of the longest month placed on it in weekly rows from top to bottom, or horizontally provided with a circularly moving index showing the names of the month, as shown and described for the purpose set forth. 4th. The combination, in a date calendar, of the cylinders A A, A A provided with monthly numbers X, weekly names Y, the regulating index C, the monthly index D and the plate E, as shown and described for the purpose set forth.

No. 23,979. Sewing Machine Table.

(Table de Machine à Coudre.)

Ludger Séguin, Montreal, Que., 5th May, 1886; 5 years.

Reclamation—Dans une table de machine à coudre, la combinaison de la boîte A munie de la planchette mobile F H E E T, encadrée dans la portion B, et reliée à la machine au moyen des charnières D, D, avec la partie C et la tête G de la machine, le tout tel que ci-dessus écrit et pour les fins sus mentionnées.

No. 23,980. Form for Displaying Textile Fabrics in Stores, etc. (Montre pour Tissus dans les Magasins.)

Alexander A. Murphy, Montreal, Que., 5th May, 1886; 5 years.

Claim.—Forms for displaying textile fabrics consisting of several quadrangular pieces, each quadrangular piece containing two contiguous acute angles on the one side thereof, and two contiguous obtuse angles on the other side thereof, in combination with several triangular pieces, and several quadrangular pieces, or in combination with quadrangular pieces only, hinged together and adapted to be folded into shape from a flat surface together with the fabric to be displayed, all substantially as set forth.

No. 23,981. Stone-Dressing Machine.

(Machine à Tailler la Pierre)

John B. Pegg, Rahway, N.J., U.S., 6th May, 1886; 5 years

Claim.—1st. In a stone-dressing machine, the combination of a stone carrying platform, constructed of upper and lower sections provided on their abutting or contiguous faces with corresponding grooves and tracks, and a screw shaft working in a shell between the sections, whereby the upper section may be moved sidewise, substantially as described. 2nd. The combination, with the beams D, E, carrying the spring actuated drill rods, and the cam shaft bearing spirally-arranged cams, of the arms a, a, connected to the beam D, and the arms a₁, a₁, connected to the arms a, a, and the beam E, for maintaining said beams relatively apart, and constituting separable bearings for the cam shaft, whereby the latter is movable, as set forth.

No. 23,982. Parallel Vice and Stand therefor. (Etau Parallèle et Etabli pour tel Etau.)

Joseph Parkinson, Bradford, Eng., 6th May, 1886; 5 years.

Claim.—The disengaging of the half or segment of a nut with the cramping screw S of a vice, substantially in the manner and for the purpose shown and described. The pillar of portable vice stands, formed in two parts and capable of adjustment for raising and lowering the vice table.

No. 23,983. Mechanical Telephone and Automatic Call. (Téléphone Mécanique et Avertisseur Automatique.)

William Taylor, Niles, Mich., U.S., 6th May, 1886; 5 years.

Claim.—1st. A mechanical telephone mounted in yielding connection with its supporting block, substantially as described. 2nd. The combination, with two mechanical telephones mounted in yielding connection with their supporting blocks, of a connecting wire J, and an automatic call carried by each instrument, substantially as described. 3rd. The combination, with two mechanical telephone instruments mounted on springs G, of a connecting wire J, and an automatic call attachment carried by the instrument, substantially as described. 4th. A diaphragm consisting of alternate layers of pressed pulp and cloth united by cement, substantially as described.

No. 23,984. Racquet Bat. (Raquette.)

Isaac T. Townsend, Coventry, Eng., 6th May, 1886; 5 years.

Claim.—The improvements in Racquet bats, of a head formed with a metallic inner frame A, united to the handle, and having the outer binder B bent around the bow in one continuous band, and continuing down sufficiently low to unite with, or to partly form a handle which is made up with other pieces, substantially as herein set forth.

No. 23,985. Rudder Fittings for Boats.

(Vites de Gouvernail de Bateau.)

Octavius L. Hicks, Edobicoko, Ont., 6th May, 1886; 5 years.

Claim.—The combination of the straps B and F, with the vintal C, and the combination of the straps B and F, and the vintal C with the guide A, and slot D, substantially as and for the purpose hereinbefore set forth.

No. 23,986. Faucet and Tap.

(Robinet - Boudou.)

Ammi C. Morse, East Boston, Mass., U.S., 6th May, 1886; 5 years.

Claim.—1st. In an improved faucet and tap, the interior perforated chamber F having a valvular opening L, the recessed perforated locking nut M, supporting the lifting valve J, and the supporting bridge O, combined to operate with the faucet S, constructed with a transverse bar Q to actuate said valve, substantially as and in the manner specified. 2nd. In an improved tap and faucet, the combination, with the transverse bar Q of a spring-actuated lifting valve J, perforated bridges O and H, chamber F, spring K, and locking nut M, substantially as described. 3rd. In a combined tap and faucet, the combination, with a chambered and bridged tap, as described, of a hexagonally pierced attached frame V, and a detachable hinged cover U co-operating to seal said tap, as and for the purpose set forth.

No. 23,987. Machine for Manipulating Fractional Tickets, etc. (Appareil pour Indiquer le Cours du Change.)

Charles L. Campbell, Washington, D.C., U.S., 6th May, 1886; 5 years.

Claim.—1st. The combination, with the lever f₂ having a shoulder on its under surface, the L-shaped arms f, the spring-actuated shaft F carrying a cam, pivoted L-shaped arm e₂, having its bent portion provided with a lug or projection engaged by said cam, the pawl c connected by a bail or arm to the longer portion of said L-shaped arm e₂, and the fly wheel having a segment of its rim portion removed and a train of gearing for operating the arm connected to the slides or blades, substantially as shown and described. 2nd. The combination, with the L-shaped arm f, the lever f, the spring-actuated shaft F, cam e₂, arm e₁, link e₃, and pawl e₄ and the fly wheel of the rod e₂ having the pawls e₅, e₇, the cog or gear-wheel having on one side a lug or projection d₂, and a disk d₁ having a segment of its rim portion removed, the pinion secured on the shaft of the fly wheel, the train of gearing connecting with the drum having the weighted cord and operating levers to shift the knives to manipulate the tickets, substantially as shown and described. 3rd. The machine for manipulating fractional tickets or quotations, the cog or gear-wheel having a lug or projection on one side, and a disk with a segment of its rim portion removed and the train of gearing, in combination with the horizontally and vertically reciprocating slides or blades, and the levers and arms connected to said slides or blades and engaging with lug d₁, pawls e₁ and e₂, rigidly secured to shaft e₁, said pawls engaging the shoulder of the fly wheel E and notched disks d₅ respectively, arm e₁, L-shaped arm e₂, cam f₁, shaft F, spring f₁, arm f, lever f₂, having projection f₂, and provided at one end with a cord connecting with a cam of a clock, substantially as shown and described. 4th. The horizontally-reciprocating slide or blade, the lever connected thereto, the ball or arm and the lever, in combination with the cog or gear-wheel having a lug or projection on one side to engage said lever, and a train of gearing connecting with the drum having the weighted cord or chain, substantially as shown and described. 5th. The combination, with the horizontally reciprocating slide or blade, the lever connected thereto and the bell-crank lever connected to said lever by a bail or arm, of the cog or gear-wheel carrying a lug or projection to engage said lever and the described train of gearing, substantially as shown and described. 6th. In a machine for manipulating fractional tickets or quotations, the vertically-reciprocating slide or blade, the upper and lower cross-piece, the rods connected to said cross pieces, the springs supporting said upper cross-piece, and the apertured bracket and levers for operating said slide or blade, substantially as shown and described. 7th. The combination, with the vertically reciprocating slide or blade, the upper and lower cross-pieces, the spring covered rods connecting said cross-pieces and the apertured bracket, of the arms m₁ and levers m₂, m₃, substantially as shown and described. 8th. The combination, with the vertically-reciprocating slide or blade, the upper and lower cross-pieces connected by spring-covered rods, the arms m₁ and levers m₂, m₃, the bell-crank lever N, arm n₁, and the cog or gear-wheel having a lug or projection and acted upon through the described train of gearing, substantially as shown and described. 9th. In a machine for manipulating fractional tickets or quotations, the horizontally-reciprocating slide or blade and the vertically-reciprocating slide or blade lever k, balls or arms k₁, k₂, k₃, and bell crank lever k₄ and bars m₁, m₂, m₃, levers m₂, m₃ and bell-crank lever N, in combination with the cog or gear-wheel having a lug or projection, and the described train of gearing, substantially as shown and described. 10th. The box or receptacle, consisting of two parallel sides grooved on their inner surface, and having small rolls secured at or near the forward end thereof, a bottom connecting piece having an opening, a small compartment having a spring actuated slide, said compartment and parallel sides being stotted, and the plate or slide having arms entering said grooves, and the weighted cords connected to said plate or slide and passing around said rolls and over wheels on the outer sides of said parallel side-pieces, substantially as shown and described. 11th. A machine for manipulating fractional tickets or quotations, consisting of a front plate or upright, having two openings for the exhibition of tickets or quotations, a box or receptacle having a plate or slide with weighted cords connected thereto horizontally, and vertically-reciprocating slides or blades operated by lever k, balls or arms k₁, k₂, k₃, bell-crank lever k₄, bars m₁, m₂, m₃ and bell crank-lever N, the cog or gear-wheel having a lug or projection, the described train of gearing, the drum having weighted cord or chain, said train of gearing connected with said cog or gear wheel, the clock having a cam or gear-wheel, a cord connected thereto and to lever f₂, the spring-actuated rod or shaft, carrying an L-shaped arm f and a cam f₁, the L-shaped arm e₂, having a bent portion operated by said cam, pawl c connected to said arm, the shaft e₁ securing said pawl, the second pawl c₂ on said shaft engaging a shoulder of the disk of the cog or gear-wheel, the pinion fast upon a shaft, and the fly wheel having a segment of its portion removed and also connected to said shaft, substantially as shown and described.

No. 23,988. Hot Water Heating Apparatus.*(Calorifère à Eau.)*

Octavo Charland, Gentilly, Que., 5th May, 1886; 5 years.

Claim.—1st. In a hot water heating boiler, the pipes A placed in a slanting position, the upper ranges of such pipes being smaller in diameter than those immediately below them and placed in zig-zag position, as herein shown and described. 2nd. The combination, in a boiler, of the pipes A made smaller in diameter in the upper part of the boiler, and placed in zig-zag positions with the baffle plate B and the header C, placed as shown and for the purpose set forth.

No. 23,989. Steam Boiler. (Chaudière à Vapeur.)

Joseph A. Mumford, Hantsport, N.S., 6th May, 1886; 5 years.

Claim.—1st. A steam boiler, closed at one end by an inwardly tapering fire-box C, and having smoke tubes E from the inner end of the fire-box to the other end of the boiler, as set forth. 2nd. A steam boiler, having an inwardly tapering fire-box C at one end, and smoke-tubes E from the other end connecting with the fire-box, the rear end of the boiler elevated, whereby the smoke tubes will have a slightly upward draft, as set forth, and the water level permit of a steam space beneath the dome B, as set forth. 3rd. In a steam boiler, having a fire-box C, tapering inwardly and provided with smoke tubes E, the grate bars L set to incline downwardly within the fire-box C, as set forth. 4th. In a steam boiler, the fire-box C tapering inwardly and having an outward extension provided with doors I, J, grate bars L, supported at one end by such extension and inclining downwardly within the fire-box C, as set forth. 5th. A steam boiler, having an inwardly tapering fire-box C at one end, smoke tubes E longitudinally at the other end, the rear end elevated and the lower end provided with a blow-off cock M, as set forth.

No. 23,990. Cabinet Folding Bed.*(Couchette Pliante.)*

Frank Munson and Frederick Shray, Buchanan, Mich., U.S., 6th May, 1886; 5 years.

Claim.—1st. In a cabinet folding bedstead, wherein the rails are folded upward in the centre, a series of cross-slats carried by one half of the side rails, and the series of cross-slats carried by the other half of the side rails, both series being so arranged that, when folded, the slats of one series will enter into the interstices between the slats of the other series, substantially as described. 2nd. In a folding bed, as described, the rail sections having slots at their central meeting points, combined with the connecting piece having pivots engaging with said slots, substantially as and for the purposes specified. 3rd. In a folding bed, substantially as described, the rail sections having slots at their central meeting ends, combined with a saddle having pivots inserted in said slots, as set forth. 4th. In a folding bed, of the kind described, coil springs secured upon opposite corners of the folding bed bottom, and connected by tension cords or cables, substantially as described. 5th. In a folding bed, of the kind described, coil springs L secured in opposite corners of the folding bed bottom, each provided with tension rod K, such tension rods being detachably secured to a cable or cord M in the longitudinal direction of the bed, substantially as described. 6th. In a cabinet folding bedstead, wherein the rails are folded upward in the centre, the meeting ends of the side rails being pivotally secured to and operating in conjunction with the saddle I, said saddle being provided with a foot projection N, substantially as and for the purposes set forth. 7th. In a cabinet folding bedstead, the combination of the main side rail adapted to be folded upward in the centre of the brackets P, carrying the central slats Q of the saddle I, and of the cleats C carrying the slats F, substantially as and for the purposes described. 8th. In a cabinet folding bedstead, the combination of the side rails C, provided with the stop H arranged to impinge against the shoulders of the head and foot sections, when such bed is extended, substantially as and for the purposes set forth. 9th. In a folding bed of the kind described, the combination of the head and foot sections A, B, with a locking device, such as the spring T, substantially as described. 10th. The combination, in a folding bed, of the two-part case A, B, saddles I and side rails C provided with intermeshing cogs or knuckles and having their ends enclosed beneath and pivoted to said saddles, as and for the purposes specified.

No. 23,991. Ventilating Attachment for Heating Stoves. (Appareil de Ventilation pour Poêles de Chauffage.)

Warren M. Brinkerhoff, Auburn, N.Y., U.S., 6th May, 1886; 5 years.

Claim.—1st. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two and provided with an air duct following the wall of said elbow and lying adjacent thereto, said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 2nd. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two and provided with an air duct following the wall of said elbow, the wall of the elbow forming one wall of said duct, the latter communicating with the outer air at the end nearest the stove and at the other end discharging into the elbow or smoke-pipe, substantially as described. 3rd. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air-duct following its wall, the wall of the air duct and elbow having integral connection, and the said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 4th. The combination, with a stove, of an elbow provided with an air-duct which follows its wall and is of unequal diameter in cross-section, said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe communicating therewith, substantially as described. 5th. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow being provided with an air duct following its wall and lying adjacent

thereto, and communicating at the end nearest the stove with a ventilator passage which extends toward the floor, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 6th. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air duct following and lying adjacent to the wall thereof, and communicating with a ventilator passage at the end nearest the stove, said ventilator passage extending toward the floor at a point outside the heater, while the duct discharges into the elbow or the smoke-pipe connected thereto, substantially as described. 7th. As a new article of manufacture and sale, an elbow for a smoke-pipe having an air duct which follows the wall of said elbow and is permanently connected therewith, said duct having communication at the end nearest the stove with the outer air, and extending towards the discharge end of the elbow, substantially as described.

No. 23,992. Vapor Burning Apparatus for Cook Stoves. (Appareil Fumivore pour Poêles de Cuisine.)

Frank E. Brown and George P. Train, Three Rivers, Mich., U.S., 6th May, 1886; 5 years.

Claim.—1st. The combination, with an ordinary fuel-stove, of the vapor-burning apparatus detachable within the fire-box, as shown, and having its feeder-pipe leading outward and upward into the flange of the stove-top, and a clamp having the fixed jaw and a movable jaw clamping the feeder-pipe and the flange of the stove-top, substantially as set forth. 2nd. The combination, with an ordinary fuel-stove, of a vapor-burning apparatus for detachable insertion within the stove, consisting of a supporting frame vertically and longitudinally adjustable, a burner or burners supported by said frame beneath the kettle-holes of the stove-top, and a supply-tank and feeder-pipe, substantially as set forth.

No. 23,993. Steam Engine. (Machine à Vapeur.)

William S. Arnold, Chatham, Ont., 6th May, 1886; 5 years.

Claim.—1st. In a steam engine, a cylinder having independent steam and exhaust ports, and a steam space shorter than the stroke of the piston, combined with two movable piston-heads reciprocatingly actuated, so as to prevent the formation of a steam space on the steam side of the piston during the initial portion of the stroke, and to alternately close and open each exhaust port, substantially as described. 2nd. In a steam engine having separate steam and exhaust ports, the combination of the cylinder, movable piston, cylinder heads, a sliding frame by which these piston cylinder heads are carried, and suitable connections with the crank shaft for reciprocating said sliding frame to cause said piston heads to alternately close and open each exhaust port, substantially as described. 3rd. In a steam engine, having a cylinder provided with independent steam and exhaust ports, and the steam space which is shorter than the stroke of the piston and is formed between movable piston heads, a sliding frame to which said piston heads are secured, and by means of which they are moved at the beginning of each stroke to translate the steam space of the cylinder, the necessary distance to accommodate it to the stroke of the piston and to alternately close and open each exhaust port, substantially as specified. 4th. In an engine, having independent steam and exhaust ports, substantially as described, the combination of the movable piston heads D, C, the sliding frame to which they are secured, of suitable connection with the engine for reciprocating said sliding frame to cause said piston heads to alternately close and open each exhaust port, and of a crank motion in said connection which stops on its centres so as to lock the sliding frame, all substantially as described. 5th. In an engine, substantially as described, the combination of the movable piston heads D, C, the reciprocating sliding frame by which they are carried, the wrists I, the rock-shaft K operated by the engine, the cranks L on said rock-shaft, and the links M all substantially as described. 6th. The combination, in a steam engine, with the movable piston heads C, D, and the rods H, and cross-heads G connecting the same, of the crank shaft A, disk B having projection C, the plate D, with projections E, C, the crank-shaft A and connections between the cranks A, K, substantially as and for the purpose specified. 7th. The combination, in a steam engine, of the side bars H, H, provided with wrist pins L, L, the cross-heads G, G, carried by said side bars, the piston rods F, F, all having an intermitting reciprocating motion derived from, and operated by the mechanism, consisting of the disk B, with projections C, said disk being secured to the shaft A, the plate D, with the projections E, C, the rod G, which connects the plate D to the upper end of the slotted rocking lever I, the sliding block J, the wrist pins O, P, the cranks L, L, the crank-shaft K and the connecting rods M, N, which connect the wrist pins O, P with the wrist pins L, L, on the side-bars H, H, all substantially as described and for the purposes specified. 8th. In a steam engine cylinder, the combination of the movable piston heads C, D, with the steam ports N, N, a valve M, a piston B moving independently of the piston heads C, D, and the independent exhaust ports O, O substantially as shown and for the purposes specified.

No. 23,994. Wrench for Saw Teeth.*(Clé pour Dents de Scie.)*

George F. Simonds, Fitchburg, Mass., U.S., 6th May, 1886; 5 years.

Claim.—1st. In a tool for fixing and detaching the removable portions of saws, a vise or positive clamping device to seize the removable portion, in combination with a lever attached to the vise to move it and the removable portion simultaneously, for the purpose set forth. 2nd. A tool for removing saw-teeth, consisting of the combination of lever E, jaws A, B provided with grooves e, e, screw C provided with spline d, and hand nut D, all constructed and arranged as set forth.

No. 23,995. Saddle Bag. (Sacoche de Courrier.)

Joseph J. Stephens, Coalesburg, Mo., U.S., 6th May, 1886; 5 years.

Claim.—1st. A saddle bag made with a body portion open at the

top, and having a low front wall E, in combination with a tray II hung to the body by links *h, h*, substantially as herein set forth. 2nd. A saddle bag made with a body portion open at the top, and with a low front wall E, a tray II hung to the body by links *h, h*, a flap C hinged at the upper rear corner of the body, and adapted to cover the top and front of the tray, and the fastening D on wall E, substantially as herein set forth. 3rd. Saddle bags consisting of opposite body portions A, A, open at the top and having low front walls E, E, and provided with trays H, H hung by links *h, h*, as described, and a strap B connected to the upper back corners of the bodies A, A, and extended opposite ways to form the flaps C, C, adapted to cover the tops and front of the trays and to fasten to the walls E, substantially as herein set forth.

No. 23,996. Carriage Axle. (*Essieu de Voiture*.)

Conrad Huehn, Rochester, N.Y., U.S., 7th May, 1886; 5 years.

Claim.—The herein-described axle comprising the metallic portions having its base *e* provided with a vertical partition D, which has its ends curved or inclined downward to connect with the spindles of the axles, the said base *e* having its ends curved upward, as at *f*, and the wooden portion having a central groove *c* received by the projection of the ends of the wooden portion being correspondingly curved to bear or abut against the end walls *f*, and clips for securing the parts together, as set forth.

No. 23,997. Railway Signalling Apparatus.

(*Appareil de Signal de Chemin de Fer.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 7th May, 1886; 5 years.

Claim.—1st. In railway signalling apparatus, the train conductor composed of a flexible conducting cord or rope extending over the tops of the cars, substantially as set forth. 2nd. In railway signalling apparatus, the combination, with a train conductor composed of a flexible conducting cord or rope, of a reel upon which the same is wound, substantially as set forth. 3rd. In railway signalling apparatus, the combination, with a train conductor composed of a flexible conducting cord or rope, and signal transmitting and receiving apparatus located in a ground connection from such conductor, substantially as set forth. 4th. In railway signalling apparatus, the combination, with a train conductor composed of a flexible conducting cord or rope, of a reel upon which said cord is wound, and signal transmitting and receiving apparatus connected at said reel with said conducting cord, substantially as set forth. 5th. In railway signalling apparatus, the combination, with the double train conductor, of a ground connection at one end with one of such conductors, and a signal transmitting and receiving apparatus connected between such conductors at the other end, substantially as set forth. 6th. In railway signalling apparatus, the combination, with a train conductor composed of a two-part flexible conducting cord or rope, of a reel in rear car of train upon which said car is wound, a ground connection at locomotive for one conductor of said cord, and signal transmitting and receiving apparatus connected between the two conductors at the reel, substantially as set forth.

No. 23,998. System of Railway Signalling.

(*Système de Signal de Chemin de Fer.*)

Thomas A. Edison, Menlo Park, N.J., and Ezra T. Gilliland, New York, N.Y., U.S., 7th May, 1886; 5 years.

Claim.—1st. In railway inductive signalling apparatus, the combination, with a grounded line wire, a moving car and external condensing surface upon said car, of a transmitting induction coil and circuit controller, and a receiving telephone carried by the car and located in a ground connection from said condensing surface through the rails upon which the car travels, substantially as set forth. 2nd. In railway inductive signalling apparatus, the combination, with a grounded line wire, a moving car and an external condensing surface upon said car, of a transmitting induction coil and musical vibrator, and a receiving telephone carried by the car and located in a ground connection from said condensing surface through the rails upon which the car travels, substantially as set forth. 3rd. In railway inductive signalling apparatus, the transmitter having in combination, an induction coil with secondary in induction circuit, a musical vibrator and local battery in the primary of the coil, and a key short circuiting the secondary, substantially as set forth. 4th. In railway inductive signalling apparatus, the transmitter having in combination, an induction coil with secondary in induction circuit, a musical vibrator and local battery in the primary of the coil, and a key short circuiting the secondary, substantially as set forth. 5th. In railway inductive signalling apparatus, the transmitter having in combination, an induction coil, a vibrator and local battery in primary of coil and a condenser shunting points of vibrator, substantially as set forth. 6th. In railway inductive signalling apparatus, the combination, with a grounded line wire, of a moving car having an external condensing surface, and signal transmitting and receiving instruments located in a ground connection from such condensing surface through the rails upon which the car travels, and a station having also signal transmitting and receiving instruments located in a grounded circuit connected by a condensing surface with said line, substantially as set forth. 7th. In railway inductive signalling apparatus, the combination, with a grounded line wire, of a moving car having an external condensing surface, and a signal transmitting circuit controller, and a receiving telephone located in a ground connection from such condensing surface through the rails upon which the car travels, and a station having also a signal transmitting circuit controller, and a receiving telephone located in a grounded circuit connected by a condensing surface with said line, substantially as set forth. 8th. In railway inductive signalling apparatus, the combination, of inductive strips upon two or more cars coupled together, with signal transmitting and receiving apparatus located upon one car, and connected with the inductive strips thereof, substantially as set forth. 9th. In railway inductive signalling apparatus, the combination, with a car, of one or more inductive strips extending lengthwise upon the exterior of said car, and insulating supports holding such strip or strips off from the surface of

the car, substantially as set forth. 10th. In railway inductive signalling apparatus, the signalling line wire having plates of sheet metal attached thereto for increasing inductive surface, substantially as set forth.

No. 23,999. Churn. (*Baratte*)

Lewis D. Bunce, Charles F. Decker and Charles M. Donelson, Salt Lake City, Utah, U.S., 7th May, 1886; 5 years.

Claim.—1st. The combination, with the churn body and the rotary dasher therein, of inclined inwardly projecting wings attached to the body above the path of the dasher, substantially as set forth. 2nd. The combination, with the churn body and the rotary dasher therein, of wings projecting laterally from the body obliquely to the horizontal plane and to the radial lines of the dasher, substantially as set forth. 3rd. The combination, with the body of a churn, and the dasher therein, of inclined projecting wings secured adjustably to the churn body, substantially as and for the purpose set forth. 4th. In combination with a churn body and the rotary dasher, the laterally projecting wings, each having a T shaped slot therein, bolts passing through the sides of the body, and provided with heads which rest in the slots of the wings, and thumb nuts for locking the bolts to the churn body, substantially as set forth. 5th. The combination, with the churn body, the wings having T-shaped slots therein, and headed bolts for securing the wings to the body, of the two part cover, the driving mechanism secured to one part of said cover, and the dasher shaft having a pinion thereon engaging the driving mechanism, substantially as set forth.

No. 24,000. Lasting Machine.

(*Machine à Enformer.*)

Jan E. Matzeliger, Lynn, Mass., U.S., 7th May, 1886; 5 years.

Claim.—1st. In a lasting machine, and in combination with mechanism for drawing the upper over a last, a rest located substantially as described, against which the shoe or last may be upheld while the work of stretching the upper is being performed, substantially as described. 2nd. In a lasting machine, the combination of pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and a stationary rest located relatively to the pinchers, substantially as stated, against which the shoe may be upheld while the work of stretching and drawing the upper is being performed. 3rd. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and the upper may be held as described, and mechanism to advance and withdraw the guide-foot, substantially as and for the purposes stated. 4th. In a lasting machine, the guide foot *9*, and mechanism to advance and withdraw the same, substantially as described, said mechanism being adapted to permit of adjustment to vary the position of the guide foot, substantially as and for the purposes stated. 5th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, a guide or gauge foot by which to position the shoe so as to receive the bite of the pinchers, and a rest against which the shoe may be upheld, as described, while the pinchers are operating, substantially as described. 6th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and mechanism for giving the pinchers a forward and lateral movement for the purpose of pleating the leather, substantially as described. 7th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, mechanism for giving the pinchers a forward and lateral movement to pleat the leather, and mechanism to be operated by the workmen for starting and stopping the lateral movement of the pinchers at will, said mechanism being wholly independent of the jack, or means for supporting the shoe. 8th. In a lasting machine, the combination of pinchers provided with mechanism for causing them to grip the leather and draw it over the last, mechanism for giving the pinchers a forward movement laterally, a lever to be operated by the workman, and connected to this mechanism, whereby the amount of lateral movement may be increased, diminished or entirely dispensed with, substantially as described. 9th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, mechanism for giving the pinchers a lateral movement forward to pleat the leather, and a lever to be operated by the workman for starting and stopping the pleating movement at will, substantially as described. 10th. The combination of the pivoted shank carrying the lower jaw, mechanism for moving it vertically, a shank carrying the upper jaw and sliding in the first shank, a spring for holding the upper jaw down to grip the leather, and mechanism to raise it for releasing the leather, and devices for swinging or moving the pinchers forward and laterally, substantially as described. 11th. The combination of pinchers, provided with mechanism for causing them to grip the leather and draw it over the last, means for giving the pinchers a forward and lateral movement, and a rest against which the shoe may be upheld during the operation of the pinchers, substantially as described. 12th. In a lasting machine, the combination of pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and means for giving the pinchers a forward and lateral movement substantially as described, said means being adapted to yield to the strain upon the pinchers, substantially as and for the purposes described. 13th. In a lasting machine, in combination, the pinchers adapted to grip the rod *73* provided with springs *74*, and devices connecting it with the pinchers guide *57*, the pin *40*, lever *94* connected with the slotted head *57*, a pin *98* in said loop connected by bars and levers to a knee lever, whereby the pin *98* is held in central position in the slot, or moved to either side thereof by the operation, a pivoted block *100* provided with an arm *102*, and mechanism for turning the block, all as set forth. 14th. The combination of the pinchers provided with mechanism for causing them to grip and draw the upper over the last, the rod *73* provided with springs *74*, and the described devices whereby the rod is connected with the block *57*, and the springs adjusted, as described,

and mechanism for giving the rod a forward andwise movement, for the purpose stated. 15th. In a lasting machine, the yielding presser foot 28, and mechanism to advance and withdraw the same, substantially as described. 16th. In a lasting machine and in combination, pinchers provided with mechanism for causing them to grip the upper and draw it over the last, and a presser-foot and means for causing it to advance over the edge of the upper to smooth and press down the leather, substantially as described. 17th. In a lasting machine and in combination, pinchers provided with mechanism for causing them to grip the upper and draw it over the last, a presser-foot and mechanism for causing the same to advance and draw back, said presser-foot being advanced to the position of the pinchers, and in line with the tension of the leather relatively to the pinchers and adapted to press upon the edge of the upper while passing forward, all substantially as described. 18th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, a presser-foot and mechanism to advance and withdraw the same over the edge of the upper, the presser-foot being allowed to bear upon the upper during its advance movement with a yielding pressure, substantially as described. 19th. In a lasting machine, in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, a presser-foot and mechanism for advancing and withdrawing the presser-foot, the presser-foot being advanced to the position of the pinchers in line with the strain of the upper relatively to the pinchers and adapted to bear upon the upper while passing over the same with a yielding pressure, substantially as described. 20th. In a lasting machine, and in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and a presser-foot and mechanism to advance it over the last to the position of the pinchers, said mechanism being timed so that the presser-foot shall commence to advance while the pinchers hold the leather tightly drawn over the last, and continue to advance after the pinchers let go, and itself bears upon and holds the leather tightly stretched during the latter part of the movement, substantially as described. 21st. In a lasting machine, in combination, pinchers provided with mechanism for causing them to grip the upper and draw it over the last, and a nailing mechanism, and means to advance and withdraw the nailing mechanism, substantially as described, the nailing mechanism being wholly independent of the pinchers mechanism, substantially as described. 22nd. In a lasting machine, in combination, pinchers provided with mechanism for causing them to grip the leather and draw it over the last, a nailing mechanism adapted to advance into the position of the pinchers for inserting the tack, and means independent of the pinchers for smoothing and holding the strained upper while the tack is inserted, the independent holding mechanism being timed to take hold in time for the pinchers to let go and give place to the nailer, all substantially as described. 23rd. In a lasting machine, and in combination with the pincher shank 46, the jaw 47 detachably connected to the shank 46, substantially as described. 24th. In combination with the pincher jaws, the guards or fenders 70, whereby the leather is kept from entering too far into the pinchers. 25th. In a lasting machine, the shank 46 carrying the lower jaw, the shank 43 and movable jaw, both suspended on pivot and spring, the sieve on lever 51, in combination with post 88 and lever 87 and connecting and driving mechanism, substantially as described. 26th. The pinchers, suspended as described, and provided with sleeve on lever 51, joint 4, loose trunnions 60 and mechanism to impart a forward lateral movement to the pinchers, substantially as described. 27th. The combination of the shank 43 and upper jaw, the shank 46 with lower jaw collar 85, spring 84, rod 86, link 71, bell crank-lever 87, and connections with the driving mechanism, substantially as described. 28th. The combination of the guide foot 9 sliding on the underside of plate B, the rod 16, lever 15 and connections with the driving mechanism, substantially as described. 29th. The combination of the pinchers, suspended, as described, the prongs 59, sliding yoke 63, pin 162, spindle spring lever 60 and driving mechanism, all substantially as described. 30th. The combination of the driver, the guide block 21, lever 110, the link 23, spring 36, rod 35, post on the plate D, and the driving mechanism connected to the lever 110, substantially as described. 31st. In combination with the driver, suspended as described, the bar 20 and lever 25 and driving mechanism, substantially as described. 32nd. The pinchers, adapted to grip and draw the upper over the last, also to move laterally forward for pleating the upper, and mechanism for imparting the necessary motions to said pinchers, in combination with tacking devices adapted to be operated independently of the pinchers, substantially as described. 33rd. The box 203, provided with the described slot or channel, and double inclined ridge-way 209, combined with the channel and tack-driver, all substantially as described. 34th. The box 203, provided with the slot and double inclined ridge-way 209, combined with the channel M and driver, said channel being curved and the box 203 being pivoted to one side thereof, substantially as described. 35th. In combination with the channel M, the screw 210 and mechanism to rotate the screw, substantially as described. 36th. The combination of the channel M, the screw 210 and the spring 218, substantially as described. 37th. The channel M, provided with the angle 220, combined with the screw having its shank gimlet, pointed as described. 38th. The combination of the channel M provided with guide tube 215, and the screw 210 having its thread on the extreme end cut substantially as described, and having its extreme end bevelled off on one edge, as shown, and means for rotating the screw, substantially as described. 39th. The screw 210, provided with shank-spindle 211, having its thread reduced in size, and gimlet pointed at the point of its union with the shank, and having its extreme end bevelled off on one edge, as shown, and having the angle of its thread abruptly changed at this end, substantially as described and for the purpose stated. 40th. In combination, of the channel M, the screw 210 having shank spindle 211, and the bushing 212 all substantially as described. 41st. In combination of the screw, arranged as stated, the rod 213, shaft 214, and driving mechanism, substantially as described. 42nd. The herein-described combination of the prongs 59, the bar 20 and guide-foot 9, the same being arranged to slide in the same vertical plane relatively to each other, substantially as described. 43rd. In a lasting machine, pinchers adapted to grip the leather and lift vertically upward, then advance over the last, then come down upon the last, all the time holding the leather

tightly drawn, and mechanisms for imparting the necessary motions to said pinchers, substantially as set forth. 44th. In a lasting machine, in combination, pinchers adapted to grip the upper and lift vertically upward, then advance over the last, then come down upon the last, all the time holding the leather tightly strained, mechanisms for imparting the necessary movements to the pinchers, said mechanisms being adapted to yield to the tension of the leather to prevent tearing the leather, substantially as described. 45th. In a lasting machine, in combination, pinchers adapted to grip the leather and lift upwards, then advance over the last, then come down upon the last, all the time holding the leather tightly strained, mechanisms for imparting the necessary movements to the pincher, said mechanisms being adapted to yield to the tension of the leather, and adapted to permit adjustment for increasing or decreasing the amount of strain to be applied to the upper, substantially as described. 46th. In a lasting machine and in combination, pinchers adapted to grip the leather and lift upwards, then advance over the last, and means for imparting the necessary movements to the pinchers, and a rest for the shoe to bear upon to prevent it from being drawn upwards by the pinchers, substantially as described. 47th. In a lasting machine and in combination, pinchers adapted to grip the upper and lift upwards, then advance over the last, then come down upon the last, all the time holding the leather tightly strained, and mechanism for imparting the necessary movements to the pinchers, and a rest for the shoe to bear against to prevent it from being lifted or carried upwards by the pinchers, as set forth. 48th. In a lasting machine and in combination, pinchers adapted to grip the leather and lift upward, then advance over the last, and mechanisms for imparting the necessary movements to the pinchers, a presser-foot and means to advance the same horizontally over the last, the presser-foot being allowed to bear upon the upper during the advance movement, as stated, and mechanism for automatically securing the leather to the inner sole, substantially as described. 49th. In a lasting machine, and in combination, pinchers adapted to grip the leather and lift upward, then advance over the last, and then come down upon the last, and mechanisms for imparting the necessary movements to the pinchers, a presser-foot and mechanism to advance the same over the last and upper, said foot being adapted to bear upon the upper with a yielding pressure during the advance movement. 50th. In a lasting machine and in combination, pinchers adapted to grip the leather and lift upward, then advance over the last, then come down upon the last, and mechanism for imparting the necessary movements to the pinchers, a presser-foot and means for advancing the same over the last in line with the tension of the pinchers on the leather, said pinchers being adapted to bear upon the leather during the advance movement, and the mechanism being so timed that the pinchers let go before the extreme forward movement of the foot is reached, substantially as set forth. 51st. In a lasting machine, pinchers adapted to grip the leather and move upward, then advance over the last, then come down upon the last, and mechanisms for imparting the necessary movements to the pinchers, a yielding presser-foot and means to advance the same over the last, and a nailing mechanism for securing the upper to the inner sole, said mechanism being so timed that the pinchers let go and move off in time for the foot and nailer to come forward and drive the nail, substantially as described.

No. 24,001. Woven or Knitted Cord Furniture. (*Meuble en Ficelle Naitte.*)

James Springer, Chicago, Ill., U.S., 7th May, 1886; 5 years.

Claim.—1st. A structure suitable for bed-bottoms, or other articles, consisting of a netting in which the meshes are made or drawn in an elongated form and securely held as formed, in combination with a frame consisting of inflexible end and side pieces, the said netting being drawn taut on the frame and having a uniform longitudinal tension, a less but uniform lateral tension, and a uniform diagonal tension, a less but uniform lateral tension, and a uniform diagonal tension, substantially as described. 2nd. A bottom or bed, or other articles, composed of a netting of cord or other suitable material, in which the meshes are securely held as formed, provided with loops or meshes of larger size on the sides thereof and at one or both ends, whereby the same may be readily attached to a suitable frame, or detached therefrom, and the meshes, when attached to the frame, may be easily drawn into an elongated shape, substantially as described and for the purposes set forth. 3rd. A structure suitable for bed-bottoms, or other articles, consisting of a netting in which the meshes are rigidly held as formed, in combination with a facing cord and a frame, consisting of inflexible end and side pieces, the said netting being drawn taut on the frame and having a uniform longitudinal tension, and a less but uniform lateral tension, substantially as described. 4th. A netted structure, in combination with a bed or other frame composed of side and end rails, the end rails being higher than the side rails, each of said rails being provided on its side with a groove having holders therein to secure the netting, the holders being thus placed out of the way and protected from injury, substantially as described. 5th. In combination with a suitable frame, composed of side and end rails, each rail being provided on its side with a groove, the holders placed in said groove, and the netting having its meshes arranged substantially in the direction longitudinal and lateral line with said holders, to aid in the production of uniform tension and uniform elasticity, substantially as described. 6th. A structure suitable for bed-bottoms, or other articles, consisting of a netting in which the meshes are made or drawn in an elongated form and rigidly held as formed, in combination with a facing cord inserted through a portion of said meshes and a frame and holders, the said netting being drawn taut on the frame and the meshes being stretched longitudinally with the frame and elongated, substantially as described. 7th. A structure suitable for bed-bottoms, or other articles, consisting of a netting having the meshes drawn in an elongated form and rigidly held as formed, in combination with a suitable frame and netting holders, the said netting being drawn taut on the frame and having a uniform longitudinal tension, a less but uniform lateral tension, a uniform diagonal tension and a substantially uniform elasticity, substantially as described. 8th. In combination with the frame provided with the metallic corner straps, the piece of metal inserted between the end and side rails at the corners of the frame

and within the corner-straps, whereby a metallic bearing to the four sides of the end rails at the intersection with the side rails is afforded, substantially as described. 9th. The netting, provided with larger meshes or loops at the end and sides, whereby the netting is more easily attached to the frame, and the knots joining the meshes are brought inside but not against the frame, substantially as described. 10th. The end rail having an upper surface tapering from the centre to the ends, and provided with a groove on the outer side thereof, and holders inserted in said groove, in combination with the remaining rails, whereby when the netting is applied thereto it is raised higher at the centre than at the sides to aid in preventing sagging, substantially as described. 11th. A structure suitable for bed-bottoms and other articles, consisting of a netting having its meshes drawn in an elongated form and rigidly held as formed, in combination with a knock-down frame, the said netting being drawn taut on said frame and having a uniform longitudinal tension, a less but uniform lateral tension, a uniform diagonal tension and a uniform elasticity whereby the frame and netting are readily disconnected or put together, substantially as described. 12th. A knock-down frame composed of two side and two end pieces, the said end pieces resting on said side pieces and the corner straps for securing them together, substantially as described. 13th. The end rail, having an upper surface tapering from the centre to the ends and provided with the groove on the side, in combination with the remaining rails and the corner straps connecting the rails, substantially as and for the purpose described. 14th. A frame, composed of the side and end rails, each provided with a groove on the side thereof, the end rails being above and supported by the side rails and holders placed within said grooves, whereby the netting may be suspended above the side rails, except where it is attached thereto, substantially as described. 15th. As a new article of manufacture, a netted structure, in combination with the side rails, the end rails, each of said rails provided with the groove, the hand-tight corners for connecting the said end and side rails, and the netting holders placed within the said groove, substantially as described.

No. 24,002. Metallic Box. (*Boîte Métallique.*)

George A. Williamson, Providence Works, Eng., 7th May, 1886. 5 years.

Claim.—1st. Contracting the top edge of the body of the box or case, and covering the open top by soldering to the said contracted top edge, a disc of thin or tinner tin plate, sheet-lead, strong tin foil, or other metal or alloy, which can easily be cut with a knife, and covering the said disc or top with a loose or removable close-fitting cover, which cover, after the tinner tin-plate top has been cut away for opening the box or case, is used for reclosing the said box or case, the box or case being filled from the bottom, substantially as hereinbefore described and illustrated in the accompanying drawings. 2nd. Contracting the top edge of the body of the box or case, and partly covering the open top with a ring of thin or tinner tin plate, sheet lead, strong tin foil, or other metal or alloy, which can easily be cut with a knife, the opening in the said top ring being closed after filling the box or case by soldering a disc to the edge of the said opening, and covering the closed top of the box or case with a loose or removable close-fitting cover, for the purpose and substantially as hereinbefore described and illustrated in the accompanying drawings.

No. 24,003. Driving Apparatus.

(*Appareil pour Conduire un Cheval.*)

Charles Lowther, New York, N. Y., U. S., 7th May, 1886; 5 years.

Claim.—1st. The combination, with a rein, of a hand protector open at the rear and closed at the forward end, and provided with a stirrup formed holding device arranged in the interior of the same for holding the reins, substantially as shown and described. 2nd. The combination of reins, with two hand-protectors, substantially as described, provided with a plate *p* and stud *h*, or equivalent devices for engaging the hand protectors together and disengaging them at will, substantially as and for the purpose set forth.

No. 24,004. Reaper Knife Sharpener.

(*Rémouleur de Couteau de Faucheur.*)

John Ross, Blythe, Ont., 7th May, 1886. 5 years.

Claim.—1st. The frame *A* of a reaper and mower knife sharpener, in combination with the sloping bars *A1*, *A2*, which cross each other and are bolted or otherwise secured together at such a point that the space between the lower ends of the sloping bars on the ground will form a larger and wider base than their upper ends, or the side bars *A*, to which the upper ends are secured, to completely prevent any possibility of the machine upsetting, substantially as described. 2nd. The frame *A*, in combination with the sloping bars *A1*, *A2*, which cross each other and are bolted or otherwise secured together, upright *A3*, and seat *F*, substantially as shown and described and for the purpose specified. 3rd. The lever clamp *I*, substantially as shown and described, and for the purpose specified. 4th. The lever clamp *I*, in combination with the knife holder *H*, standard *G1* or other suitable support projecting up from the knife holder *H*, knives *J* and screw *K*, substantially as shown and described, and for the purpose specified. 5th. A toothed wheel *D1*, substantially as shown and described and for the purpose specified. 6th. A toothed wheel *D1*, in combination with a connecting bar *L*, stud pin *C1*, or its equivalent, standard frame *G*, knife holder *H*, knives *J*, and stone *E*, substantially as shown and described and for the purpose specified. 7th. A connecting bar *L* formed with a slot *M*, substantially as shown and described, and for the purpose set forth. 8th. The connecting bar *L*, formed with a tension or spring for readily permitting of the adjustment of, and retaining the stud pin *C1* in the sockets in the toothed wheel *D1*, substantially as shown and described. 9th. A standard frame *G* formed with holes *e1*, substantially as shown and described and for the purpose specified. 10th. The knife holder *H* formed with holes *e1*, pivotally and adjustably secured to the standard frame *G* by a bolt *b5*, or its equivalent, in combination with grindstone *E* for adjusting the knife holder *H*, together with the knives *J*

secured thereon backwards or forwards horizontally to stone *E* of different diameters, substantially as described. 11th. The knife holder *H* pivoted on a pivot-bolt *b5*, or its equivalent, secured in a standard frame *G*, formed with holes *e1*, in combination with the grindstone *E* for the purpose of adjusting the knife holder *H* together with the knives *J*, secured thereon upwards or downwards vertically to stone *E* as they decrease in size, substantially as described. 12th. A standard frame *G* formed with holes *e1* in combination with a knife holder *H*, formed with holes *e1*, and bolts *b* and *b7* or their equivalent for adjusting the knife holder *H* as well as the knives *J* secured therein horizontally and vertically, to adapt them to lie on the stone *E* in proper proportion as it decreased in diameter, substantially as shown and described. 13th. A flexible band *O*, substantially as shown and described, and for the purpose specified. 14th. A flexible band *O*, in combination with the knife holder *H*, crank arm *P*, crank shaft *R*, and foot crank *R1*, substantially as shown and described, and for the purpose specified. 15th. The cranks *S*, *S1*, one situated on each side of the grindstone *E*, and each formed with a knob or handle *S1*, shaft or axle *C*, and grindstone *L*, in combination with the toothed wheel *D1*, connecting bar *L*, standard frame *G* and knife holder *H*, substantially as shown and described, and for the purpose specified. 16th. A standard water guard *T*, substantially as shown and described, and for the purpose specified. 17th. The pulley *W*, in combination with a pivotal rod *V*, flexible band *X*, and knife holder *Z*, substantially as shown and described, and for the purpose specified. 18th. A bracket *U* formed with a slot *U1*, thumb nut and bolt *e2*, and standard *T*, in combination with a rod *u*, pulley *W*, flexible band *X*, and knife holder *Z*, substantially as shown and described, and for the purpose set forth. 19th. A knife holder *Z*, formed with a socket *Z1*, and flange *Z2*, substantially as shown and described, and for the purpose specified. 20th. A flexible band *X*, and knife holder *Z* connecting the outer end of the knives *J* to a rod *V* by a pulley or other suitable connection, in combination with a flexible band *o* connecting the knife holder *H* with a crank arm *P* forming part of or rigidly secured to the crank shaft *R*, formed with a foot *R1*, for the purpose of steadying said knives while being sharpened, substantially as shown and described.

No. 24,005. Grooving and Seam Setting-down Machine. (*Machine pour Relever les Gravures et Rabatre les Coutures.*)

Phillip Birch, Erie, Penn., U. S., 7th May, 1886; 5 years.

Claim.—1st. The combination in a grooving and seam-setting-down machine, of a stake or mandrel mounted in the frame of the machine, and provided with one or more longitudinal grooves therein, one of the edges of which grooves is movable with a hammer mounted in the frame of the machine, adapted to strike downward upon said stake or mandrel, substantially as and for the purpose set forth. 2nd. In a grooving and seam setting-down machine, a stake or mandrel having one or more longitudinal grooves therein, one of the edges of which grooves is movable, substantially as and for the purpose set forth. 3rd. The combination, in a grooving and seam-setting-down machine, of standards connected together at one end thereof by a cross-frame, a pivoted hammer provided with retracting springs, and treadle mechanism for operating the same mounted in said frame, with a sleeve on one of said frames adapted to receive and support the stake or mandrel upon which said hammer strikes, substantially as and for the purpose set forth. 4th. The combination, in a grooving and seam-setting-down machine, of a removable stake or mandrel having longitudinal grooves therein, with a tubular sleeve or bearing on the frame of said machine, adapted to support said removable stake or mandrel under the face of the hammer of said machine, substantially as and for the purpose set forth. 5th. In a grooving and seam-setting-down machine, the combination, with a pivoted hammer mounted in the frame of said machine, and a removable stake or mandrel, one end of which is mounted in a sleeve or bearing on said frame, of a movable leg adapted to be moved under the free end of the stake or mandrel and removed therefrom by the action of said pivoted hammer, substantially as and for the purpose set forth. 6th. The combination, in a grooving and seam setting-down machine, of a pivoted hammer mounted in the frame of said machine, having a rivet punch in the face thereof, with a removable stake or mandrel mounted in a sleeve or bearing on said frame, and having thereon one or more longitudinal grooves, one of the sides of which is movable, and having openings in the face of the groove for the entry of the punch in the face of the hammer, substantially as and for the purpose set forth. 7th. The combination, in a stake, for grooving and seam-setting-down machines, of longitudinal grooves *N* having the fixed edge *n*, with the movable edge or guide *O* resting on the spring *o*, and adapted to be forced downward during the setting of the seam, substantially as set forth. 8th. The combination, in a grooving and seam-setting-down machine, of the upright frames *A*, *A1*, and cross-frame *F*, the hammer *D* provided the retracting spring *H* mounted in the top of the frame *A*, and the treadle *J* mounted in the lower part of the frame *A*, and connected with the hammer *D*, by connecting rods *K*, with a tubular bearing or sleeve *G*, on the top of the frame *A1*, and the removable stake or mandrel *L* supported thereby, all substantially as and for the purpose set forth.

No. 24,006. Wheel Hub. (*Moyeu de Roue.*)

Charles E. Borop, of Bureau Co., Ill., and Louis H. Borop, of Green Co., Iowa, (assignees of Stephen H. French and William J. Maltby, Baird, Texas.) U. S., 7th May, 1886. 5 years.

Claim.—1st. The combination, with an axle, and a hood or guard fixed thereon, of a hub reduced at one end, and provided with a flange at the outer end of said reduction, and a collar or nut having a flange projecting over the free end of said hood or guard, said hood or guard fitting over said reduction of hub, substantially as and for the purposes set forth. 2nd. The combination of the hub body *D*, provided with the shoulder *G* near its outer end, and a screw-thread along the inner portion, the spline *J* near said shoulder, the slotted collar *H* fitted to said shoulder and spline, the removable ring *K* smaller than the collar, and having radial mortises in one side, and shoulders *L* in alignment with said mortises, upon which shoulders rest on shoulders

of the spokes, the washer N fitted against the ring K, and the internally-screw-threaded nut, or collar O, fitted upon the threaded body D, substantially as and for the purpose set forth.

No. 24,007. Reclining Chair.

(Fauteuil Voltaire)

Solomon H. Schmutz, (assignee of Birdsall H. Mead,) Cleveland, Ohio, U.S., 7th May, 1886, 5 years.

Claim.—In a reclining-chair, the combination, with a seat, the back hinged to said seat, the rock-arms pivoted to the seat, and provided at their upper ends with teeth, and the arm-rests pivotally secured to the back and to the rock arms, and enclosing and concealing the teeth on said rock-arms, of pawls located within the arm-seats and engaging the teeth on the rock-arms, substantially as set forth.

No. 24,008. Shovel, Spade and Scoop.

(Pelle, Bêche et Pelle à Main.)

Henry M. Myers, Beaver Falls, Penn., U.S., 7th May, 1886; 15 years.

Claim.—1st. In a shovel, a blade having an increased thickness at its center, which thickness extends the entire length of the blade and gradually diminishing towards the side edges thereof, substantially as herein described and for the purpose set forth. 2nd. In a shovel, the blade and handle straps thereof having an increased thickness at the center, said thickness extending the entire length of said blade and straps, and gradually diminishing toward the side edges, substantially as described, and for the purposes set forth.

No. 24,009. Lock. (Serrure.)

Stephen K. Ames, Joseph R. Ames, Benjamin F. Wise and Edward R. Ames, Ansonville, Pa., U.S., 7th May, 1886; 5 years.

Claim.—1st. The combination of a latch, a bolt, a main gravity tumbler to actuate the latch, said tumbler interlocking with the latch and bolt when in a normal position, and means for holding said tumbler in its normal position. 2nd. The combination, with the latch and bolt, of a main gravity tumbler for projecting the latch and interlocking with the latch and bolt, when in a normal position, and a cam dond latch adapted to engage and hold said tumbler in a normal position at will. 3rd. The combination of the latch and bolt, a gravity tumbler interlocking with said latch and bolt when in a normal position, said tumbler serving to project the latch and close the key hole, and a cam latch to engage the tumbler and hold it securely in place. 4th. The combination of the spindle hub B, fingers *b*, latch C C', tumbler D D', bolt E, and cam latch H. 5th. The combination of the spindle hub B, latch C C', tumbler D, bolt E, tumbler F and G and cam H. 6th. The combination of the tumbler D, lug *d*, bolt E, notch *e*, and cam H. 7th. The combination of the latch C, yoke C', shoulders *e*, pivot *a*, lever D D', notch *d*, lug *d*, bolt E, notch *e*, and pin *a*. 8th. The combination of the bolt E, notch *e*, notch *c*, rib *e*, pin *a*, tumbler F, shoulder *e*, tumblers G, *g*, shoulders *e*, *e*, pin *a*. 9th. The combination of the spindle hub B, latch C C', lever D D', *d*, *d*, bolt E E', *e*, *e*, *e*, *e*, *e*, *e*, pins *a* *a*, tumblers F, G, *g*, and cam H *h*, all substantially as shown and described, and as used for the purpose set forth.

No. 24,010. Apparatus for Cutting the Pile of Fabrics. (Appareil pour Couper les Poids du Drap.)

John Farran, Manchester, Eng., 10th May, 1886; 5 years.

Claim.—1st. The general construction and arrangement of apparatus constituting a machine for cutting or severing the pile of double fabrics, such as are woven together face to face, so that the threads which unite the two cloths from (when severed) the piled faces of two separate cloths, such improved apparatus being constructed, arranged and operated substantially as hereinbefore described and illustrated by the drawings annexed. 2nd. In such apparatus, the combination, with two card-covered, or pin-pointed, or other suitable taking up rollers, and two adjustable cutting rails, of knives attached to carriers running in an endless horizontal groove arranged transversely to the cloth, so that the knives will sever the pile threads and divide the double cloth, so as to form two evenly piled fabrics. 3rd. The novel arrangement of mechanism, hereinbefore described, for letting off the double cloth and for regulating the delivery of the same to the pile cutting apparatus. 4th. The screws and bevelled gear for adjusting the two cutting rails in a vertical direction, either higher or lower, simultaneously, or to and from each other, so as to set them to the length of the pile, and the screws and bevelled gear for advancing and retiring the two bars together horizontally, so as to adjust them towards or from the knives. 5th. The employment of two combs for pressing the cloths against the two cutting rails, when cutting a deep pile, substantially as described. 6th. The method of driving the taking-up rollers, one by toothed gearing and the other by friction gearing, substantially as and for the purpose described. 7th. The peculiar construction of the knife carriers, substantially as described and illustrated with reference to Figs. 3, 4, 5, 6 and 6a of the annexed drawings, and the method of actuating them by means of fingers attached to an endless strap or band, placed either above or below the grooved race. 8th. The construction of the horizontal endless grooved race for guiding the cutting knives and their carriers, substantially as hereinbefore described. 9th. The method of giving a curved cutting edge to the knives, by causing them to come in contact with revolving Lurley stones (or other equivalent sharpening device), whilst they are passing round the curved portions of the endless race.

No. 24,011. Bedstead. (Bois de Lit.)

Lewis M. Wilkins, Windsor, N.S., 10th May, 1886; 5 years.

Claim.—1st. The combination, in an adjustable bedstead, of the revolving body A having arms or axles *f*, *f*, to revolve in boxes in tops uprights or posts *g*, *g*, of stand B, substantially as set forth. 2nd.

In an adjustable bedstead, the combination of adjustable standards or legs *c*, *c*, with revolving body A, substantially as described. 3rd. The combination of adjustable bedstead, with flaps or sideboards, E, E, with body A, and connected with standards or legs *c*, *c* by rods J, J, substantially as shown and for the purpose specified. 4th. The combination, in an adjustable bedstead, of the adjustable head and foot boards D, D, with the revolving body A, substantially as shown and for the purpose specified. 5th. In an adjustable bedstead, the combination of stand B and uprights *g*, *g*, having boxes *g*, *g*, with revolving body A, all substantially arranged and for the purpose specified.

No. 24,012. Ice Cream Soda.

(Eau de Seltz à la Crème Glacée.)

James W. Black, Berwick, N.S., 10th May, 1886; 5 years.

Claim.—1st. A confectionery composition or syrup for making ice cream soda, consisting of white of eggs, sugar, water, lime fruit juice, lemon and an acid, suitably mixed, as described. 2nd. The acidulated cream syrup for making ice cream soda, composed of beaten white of eggs, sugar, water, lime fruit or lemon juice, tartaric acid and a flavoring extract. 3rd. The mixture of syrups for making ice cream soda, consisting of, first, beaten whites of eggs, sugar, water, one or more kinds of fruit juice and tartaric acid forming the noddulated syrup, and, second, a syrup containing bicarbonate of soda forming the carbonated syrup.

No. 24,013. Vehicle Running Gear.

(Train de Voiture.)

Henry W. Hamell, Potsdam, N.Y., U.S., 10th May, 1886; 5 years.

Claim.—1st. A spring for vehicles, composed of a long leaf having eyes formed in the ends thereof, and one or more shorter leaves, the long leaf and lower short leaf being arched downwardly, and the upper leaves being arched upwardly, and the two sets of leaves drawn together by bolts or clips, so that the middle portion of the spring shall be approximately straight with downwardly-curved ends, as set forth. 2nd. A platform cross-spring, having a downward projection across the ends of the lower leaf and an elongated hole transversely thereto, as set forth. 3rd. A shackle for spring-bearings, consisting of a bearing I, link H and covering J, as set forth. 4th. The combination of a shackle for spring bearings, consisting of a bearing I, link H and covering J, said shackle being clipped to the under side of hind axle, and the link standing in an upright position, and its lower end resting in the bearing, and upper end attached to side spring, as set forth. 5th. The combination of the side springs G, G', having the lower leaf *g* shortened of the platform, springs *K*, *K*, having elongated holes *l* and clips L, L, whereby the platform springs are supported on the clip-ties, as set forth.

No. 24,014. Carriage Gear. (Train de Voiture.)

John B. Armstrong, Guelph, Ont., 10th May, 1886; 5 years.

Claim.—1st. In a side bar buggy or carriage gear, the side bars formed of tempered steel plates, as and for the purpose described and shown forth. 2nd. In a side bar buggy or carriage gear, connecting a naked rear axle to the head block or head plate in front by supporting side bars, as described. 3rd. In a side bar buggy or carriage gear, the front ends of the side bars supported by and connected to the spring ends of a head plate or head block, substantially as described. 4th. In a side bar buggy or carriage gear, compensating buffers *a*, in combination with side bars A, buffer rests *b*, *b*, and cross springs C, substantially as described and for the purpose set forth. 5th. In a side bar buggy or carriage gear, the cross springs C, formed and operating as described and set forth. 6th. In a side bar buggy or carriage gear, a spring and head plate B, in combination with either a naked or lined front axle, as described and shown forth. 7th. In a side bar buggy or carriage gear, the ends of the side bars attached and connected to the axle and head plate by ribs *e* and clips *f*, substantially as described and set forth. 8th. In a buggy or carriage gear, a central line perch F, formed from a single plate of tempered steel, as described.

No. 24,015. Bob Sleigh. (Tronneau-Jumeau.)

John B. Armstrong, Guelph, Ont., 10th May, 1886; 5 years.

Claim.—1st. In a steel bob sleigh having the parts formed of spring tempered steel, the combination of the runners E, knees A, braces C and *f*, bench B and draw bars D, formed substantially as described and for the purpose set forth. 2nd. In a bob sleigh, the combination of runners E, knees A, braces C and *f*, bench B and draw bars D, formed substantially as described and for the purpose set forth. 3rd. In a bob sleigh, bevelled supporting knees A, standing perpendicularly longitudinally with the runners E. 4th. A bob sleigh, with a single bench supported by vertically bevelled knee plates, substantially as and for the purpose described. 5th. In a bob sleigh, bevelled knees, supporting a bench B, in combination with braces C from the knees to the bench. 6th. In a bob sleigh, the oval or round edged runners E, as and for the purpose specified. 7th. In a bob sleigh, the bench resting on the horizontal knee extensions *a*, shouldered against the edge of the same and held in position by projecting bosses *g* and bolts, substantially as described.

No. 24,016. Electro-Magnetic Motor.

(Moteur Electro-Magnétique.)

Frederick Thomson, Montreal, Sigismund Mohr, Quebec, and Monroe L. Ross, Montreal, Que., 10th May, 1886; 5 years.

Claim.—1st. The combination of an electro-magnetic motor, with its field coils wound in continuous sections, connections from the ends of each section being taken to a segment of a commutator, and brushes or contact strips connected with the working circuit movable thereon and means for moving said brushes on said commutator, substantially as described. 2nd. The combination of an electro-magnetic motor with its armature in multiple arc, with a rheostat or variable resistances, and means for shunting in said resistances, sub-

stantially as described. 3rd. The combination, in an electro-magnetic motor, of a series of field magnet coils continuously connected together, and means for passing the current from the working circuit through any number of sections, substantially as described. 4th. The combination, in an electro-magnetic motor, of a set of resistance coils in multiple arc with its armature, the terminals of said resistance coils being connected together, and a connection taken from each terminal, or connection, to a segment of a commutator, on which a brush or contact strip from the working circuit is arranged to travel, and means for shifting said brush or contact strip, substantially as described. 5th. The combination of an electro-magnetic motor with its armature in series, with the field coils, and said armature in multiple arc with a set of resistance coils, and a connection taken from the terminals of the coils to commutator segments, and said segments fastened to the periphery of a drum of non-conductive material, and arranged to occupy half the circumference of said drum, and said field coils wound in continuous sections, and a connection taken from each section to a set of commutator segments, arranged to occupy the other half of the above mentioned drum, and brushes or contact strips connected with the working circuit, arranged to move thereon, and means for moving the same, substantially as described.

No. 24,017. Car-Coupler. (*Attelage de Chars.*)

Thomas Galloway, West Selkirk, Man., 10th May, 1886; 5 years.

Claim.—The hook B, as described, the link C, drawhead A, chain and lever D, all combined substantially as and for the purpose hereinafore set forth.

No. 24,018. Sled. (*Traineau.*)

George M. Dwight, Oregon, Ill., U.S., 10th May, 1886; 5 years.

Claim.—In a sleigh or sled, the runners thereof formed of angle iron, and bifurcated knees having laterally extending flanges at their upper ends, and at their lower ends inwardly extending chairs connected respectively to the benches and runners, in combination with shoes attached to the under side of the runners and projected below the same, to protect the entire under surface from frictional wear, substantially as and for the purpose set forth.

No. 24,019. Compound for Preserving Natural Flowers, etc. (*Composition pour Conserver les Fleurs Naturelles, etc.*)

Emma J. Woodruff, Chicago, Ill., U.S., 10th May, 1886; 5 years.

Claim.—The herein-described compound, consisting of wood-tar, thia, true benzole, acetic ether, chloroform, sandorac, white denar, white wax and corrosive sublimate or boracic acid, combined in substantially the manner and proportions and for the purpose set forth.

No. 24,020. Electric Railway.

(*Cheemin de Fer Electrique.*)

Stanley H. Short and John W. Nesmith, Denver, Col., U.S., 10th May, 1886; 5 years.

Claim.—1st. In connection with a railway, an electrical conductor composed of sections having pieces on their ends forming the electrical connections between said sections, through the contact points of said pieces, and adapted to close automatically, an insulating bar carried on the car or other vehicle, and longer than any one of the sections, said insulating bar being adapted to pass between the contact pieces and to separate them electrically during its passage between them, and having also conducting pieces thereon, which are in circuit with an electric receptive device, and are adapted to bear on the conductor on each side of the break caused by the bar, when passing between the contact pieces, all substantially as described. 2nd. In connection with a railway, an electrical conductor composed of sections having their ends adapted to automatically close the circuit, said conductor being in circuit with an electrical generator and return wire, in combination with an insulating bar carried on the car or other vehicle longer than any one section, and adapted to open and hold open the ends of the sections in passing said bar, having conducting pieces thereon, which are in circuit with an electric motor on the car, whereby the current is cut out of the conductor and made to pass through the motor, all substantially as described. 3rd. In connection with a railway, an electrical conductor composed of sections, which are substantially in line with each other, and which have their ends adapted to come automatically into contact with each other to close the circuit, said conductor being in circuit with an electrical generator and return wire, in combination with an insulating bar carried on the car or other receptacle longer than any one of the sections, and adapted to open and hold open the ends of the sections in passing said bar having conducting pieces thereon, which are in circuit with an electric motor on the car, whereby the current is cut out of the conductor and made to pass through the motor, all substantially as described. 4th. In combination with a railway, an electrical conductor, composed of sections, which are substantially in line with each other, and which have their ends adapted to come automatically into contact with each other to close the circuit, said conductor being in circuit with an electrical generator and return wire, in combination with an insulating bar carried on the car or other receptacle longer than any one of the sections, and adapted to open and hold open the sections in passing said bar having conducting pieces on its end, which conducting pieces are in circuit with an electric motor on the car, and are adapted for contact with the sections of the conductor, while the intermediate portions of the bar support, the ends of the sections and break the circuit between them, all substantially as described. 5th. A conductor composed of sections having spring or other connections between the sections which, when closed, form a continuous conductor in connection with a generating device, a car or other vehicle moving on a suitable way, a translating loop for diverting the electric current from the conductor through the electro-motor on the locomotive, or car, or vehicle, the said loop consisting essentially of two metal brushes or other devices of suitable conducting material, and placed

at a distance apart greater than the length of any single section of the conductor, and connected together by means of a bar or other device consisting in whole or in part, of some suitable insulating or non-conducting material, and in constant contact with the conductor, and carried or moved along the conductor by suitable attachments to the locomotive or car, by which the circuit closes, or springs, or bridging pieces, or devices connecting the section of conductors are held open successively from the time that the first brush enters one, until the second brush shall have passed it, the office of the translating loop being to divert the electric current from the conductor through the first brush by a suitable wire or other conductor to the electro-motor on the car, and thence to the last brush, a circuit closer being always held open between the brushes by the insulating bar or device, to the two ends of which the brushes are connected, all those parts specified being combined and operating substantially as described. 6th. In an electric railway system, the combination of a single line conductor in sections, with circuit closers between each contiguous section with an insulating bar, the two ends of which are attached to brushes or conducting piece, to hold open temporarily said sections, and in connection with the electro-motor, thereby diverting the entire current from the single line conductor through the electro-motor on the car, the parts being arranged as described, whereby each circuit closes automatically when the insulating bar and the rear brush shall have passed them successively, as set forth.

No. 24,021. Wind Mill. (*Moulin à Vent.*)

George H. Pattison, Freeport, Ill., U.S., 10th May, 1886; 5 years.

Claim.—1st. The combination of the gear I, mounted on a shaft journalled in the tower of the mill, the gear K engaging with said gear I, the gudgeon P rigidly connected with the gear K, and the gear T mounted on said gudgeon and free to rotate thereon, and to revolve bodily with the gear K. 2nd. The combination of the gears H, L, mounted on a shaft journalled in the tower of the mill, the gears I, K, engaging with the gears H, L, respectively, the gudgeon P rigidly connected with the gear K, the gear T mounted on said gudgeon and free to rotate thereon, and to revolve about the axis of the gear K, and the gear Q engaging with said gear T, substantially as shown and described and for the purpose set forth. 3rd. The combination of two gears mounted on a vertical shaft journalled in the tower of a wind-mill, at one side of the vertical axis of the mill, a third gear engaging one of said two gears, and having its axis coincident with the vertical axis of the mill, a fourth gear engaging the other of said two gears, and itself free to rotate on a vertical axis, a loosely mounted or planet gear free to rotate on its own axis, and to revolve bodily with said fourth gear, and a power transmitting gear engaging with said planet gear, and adapted to transmit power to other machinery, whereby the rotation of said third gear, when the power transmitting gear is stationary, rotates said planet gear on its own axis and revolves it about the axis of said fourth gear. 4th. The combination of the geared turn-table, the gear K and the gear T, supported thereby and revolving therewith, gearing connecting the gear K with the gear on the turn-table, gearing engaging the gear T on one side and connecting it with power-transmitting mechanism, and gearing engaging said gear T on the opposite side, and connecting it with the wind wheel shaft. 5th. In a wind-mill of the class described, the combination of a rotating turn-table, a wind wheel shaft journalled therein, a gear rigidly attached to the turn table, two independently journalled vertical shafts adapted to transmit the power of the mill to other mechanism, a third vertical shaft journalled in bearings attached to the tower of the mill, and a train of gearing connecting the wind-wheel shaft, the gear attached to the turn-table, and said vertical shafts, one element of said train of gearing being a loosely mounted gear supporting a planet gear, which is free to rotate on its own axis and to revolve about the axis of said loosely mounted gear, substantially as shown and described and for the purpose set forth. 6th. In a wind mill of the class described, the combination of a rotating turn table, and a gear rigidly attached thereto, a wind-wheel shaft journalled in the turn table, a vertical shaft journalled in bearings attached to the tower, a loose gear and a planet gear free to rotate about its own axis, and to revolve about the axis of said loosely mounted gear, and gearing, substantially as shown and described, connecting the wind-wheel shaft, the gear on the turn-table, said loosely mounted gear and said vertical shaft, journalled in bearings attached to the tower. 7th. In a wind-mill of the class described, the combination of a rotating turn table, a wind wheel shaft journalled therein, a vertical shaft geared directly to the wind-wheel shaft, a second vertical shaft adapted to transmit the power of the mill to other machinery, and a train of gearing connecting said vertical shafts and said turn-table, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shafts in opposite directions, without tending to rotate the turn-table, one element of said train of gearing being a planet gear free to rotate about its own axis, and to revolve about the axis of its support. 8th. In a wind-mill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journalled therein, a vertical shaft journalled in the turn-table, and geared directly to the wind wheel shaft, a gear wheel mounted loosely on said vertical shaft, and a planet wheel whose shaft is rigidly fastened to said loosely mounted gear, and gearing connecting said planet gear with said vertical shaft, substantially as and for the purpose set forth. 9th. In a wind-mill of the class described, the combination of a rotating turn-table, a gear rigidly mounted thereon, and a wind-wheel shaft journalled therein, two independently journalled vertical shafts adapted to transmit the power of the mill to other mechanism, and gearing connecting the wind-wheel shaft, the gear on the turn table, and said two vertical shafts, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shafts in opposite directions, one element of said gearing being a loosely mounted gear free to rotate about its own axis, and to revolve about the axis of its movable support, substantially as shown and described. 10th. In a wind-mill of the class described, the combination of a rotating turn-table, and a wind-wheel shaft journalled therein, a power transmitting gear, and a loosely mounted gear free to rotate on its own axis, and to revolve about the axis of its movable support, and gearing connecting said turn-table, said wind-wheel shaft, said power transmitting gear and said loosely

mounted gear, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely mounted gear on its own axis only, and the rotation of the turn-table rotates said loosely mounted gear on its own axis, and revolves it about the axis of its movable support, without rotating either the wind-wheel shaft or the power transmitting gear 11th. In a wind-mill of the class described, the combination of a wind-wheel shaft journaled in a rotating turn-table, a gear rigidly fastened to said turn-table, a power transmitting gear, an intermediate loosely mounted gear, a planet gear loosely mounted on a shaft rigidly attached to said intermediate gear, and gearing connecting said turn-table gear, the wind-wheel shaft, the power transmitting gear, said intermediate loosely mounted gear, and said planet gear, whereby the reaction of the work performed by said power transmitting gear has no tendency to rotate the turn-table. 12th. The combination, with the rotating geared turn-table of a mill, of a wind-wheel shaft journaled therein, the gear Q adapted to transmit the power of the mill to other machinery, and the gears m, n, l, k, O, T, connecting the wind-wheel shaft, the gear on the turn-table, and the gear Q, whereby during the simultaneous rotation of the wind-wheel shaft in its bearing, and of the turn-table about its own axis, the speed of rotation of the gear Q bears a constant ratio to the speed of rotation of the wind-wheel shaft. 13th. In a wind-mill of the class described, the combination of the geared turn-table, and a wind-wheel shaft journaled therein, a power transmitting shaft, the gear k, and the gear T, supported thereby and free to rotate on its own axis, and to revolve with the gear K, gearing connecting the gear K with the turn-table gear, and gearing connecting the wind-wheel shaft, and the power transmitting shaft through the gears k, T, substantially as shown and described. 14th. In a wind-mill of the class described, the combination of a geared turn-table, and a wind-wheel shaft journaled therein, a power transmitting gear, a loosely mounted gear free to rotate about its own axis, and to revolve about the axis of its support, gearing connecting said loosely mounted gear with the turn-table gear, gearing engaging said loosely mounted gear on one side and connecting it with the wind-wheel shaft, and gearing engaging it on the opposite side and connecting with the power transmitting gear, whereby the rotation of said wind-wheel shaft in its bearing rotates said loosely mounted gear on its own axis only. 15th. The combination of the central gears I and O, and the connecting gears H, L, K, T, Q, combined and operating substantially as shown and described, and for the purpose set forth. 16th. The combination, with the turn-table, and the gear attached thereto, of the gear K and the gear T, rotating on a shaft attached to the gear K, and gearing connecting the gear K with the turn-table gear, whereby the rotation of the turn-table rotates the gear T bodily about the axis of the gear K, substantially as shown and described, and for the purpose set forth. 17th. The combination of the turn-table, and the gear I rigidly fastened thereto, and the gears H, L, K, T, all combined and operating substantially as shown and described, and for the purpose set forth. 18th. The combination of the turn-table C, the wind-wheel shaft E journaled therein, the gear I fastened rigidly to the turn-table, and the train of gearing m, n, l, k, O, T, Q, substantially as shown and described, and for the purpose set forth. 19th. In a wind-mill of the class described, the combination of the geared turn-table, a wind-wheel shaft journaled therein, a power transmitting shaft, a loosely mounted gear free to rotate on its own axis, and about the axis of rotation of its support, and a train of gearing connecting said wind-wheel shaft, said geared turn-table and said power transmitting shaft, whereby the rotation of the wind-wheel shaft in its bearing rotates said loosely mounted gear on its own axis only. 20th. In a wind-mill of the class described, the combination of a rotating turn-table, a planet gear free to rotate about its own axis, and to revolve about the axis of its rotatable support, and means connecting said turn-table and said planet gear, whereby the rotation of the turn-table rotates said planet gear. 21st. In a wind-mill of the class described, the combination of a rotating turn-table, a planet gear free to rotate upon its own axis, and to revolve about the axis of its rotatable support and gearing connecting the turn-table and the planet gear, whereby the rotation of the turn-table rotates the planet gear but at a different rate of speed. 22nd. In a wind-mill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, two independently journaled vertical shafts, and gearing connecting said turn-table, and said vertical shafts, whereby the rotation of the turn-table rotates the upper but not the lower of said vertical shafts. 23rd. In a wind-mill of the class described, the combination of a rotating geared turn-table, a wind-wheel shaft journaled therein, a loosely mounted gear wheel free to rotate about its own axis, and about the axis of revolution of its movable support, and gearing connecting said loosely mounted gear with said turn-table, and with said wind-wheel shaft, whereby the rotation of the wind-wheel shafts in its bearings rotates said loosely mounted gear about its own axis, while the rotation of the turn-table rotates said gear in its own axis, and about the axis of rotation of its support. 24th. In a wind-mill of the class described, the combination of a suitably journaled wind-wheel shaft, a geared turn-table free to rotate about the vertical axis of the mill, and a chain of gearing connecting the wind-wheel shaft, the turn-table and the machinery to be operated, one element of said gearing being a loosely mounted gear wheel free to rotate about its own axis, and about the axis of rotation of its movable support, whereby the rotation of the turn-table has no tendency to cause the rotation of the wind-wheel shaft in its bearing, and the rotation of the wind-wheel shaft in its bearing has no tendency to cause the rotation of the turn-table. 25th. In a wind-mill of the class described, the combination of the gearing O, Q, T, and rudgeon P, being driven from the wind-wheel shaft and turn-table of the mill respectively, about the axis of the gear O, at different rates of speed. 26th. In a wind-mill of the class described, the combination of a geared turn-table rotating freely about the vertical axis of the mill, a wind-wheel shaft journaled in said turn-table, two independently rotating vertical shafts adapted to transmit the power of the mill to other mechanism, and a train of gearing connecting said wind-wheel shaft, said vertical shafts, and the gearing of said turn-table, one element of said train of gearing being a loosely mounted gear wheel free to rotate about its own axis, and about the axis of revolution of its movable support, whereby the rotation of the wind-wheel shaft in its bearing rotates both of said vertical shafts, and the rotation of

the turn-table rotates the upper but not the lower of said vertical shafts.

No. 24,022. Machine for Harvesting Pease.

(Machine à Moissonner les Pois)

Tobias Fox, Owen Sound, Ont., 10th May, 1886; 5 years.

Claim.—1st. The fingers A, A, to remove the grain, substantially as hereinbefore set forth. 2nd. The combination, with the fingers A, A, of the lifters L, L, and the divider F, substantially as hereinbefore set forth.

No. 24,023. Filing Cabinet for Papers.

(Bouffet à Papier)

Paul J. Schlicht, Rochester, N.Y., U.S., 10th May, 1886; 5 years.

Claim.—1st. The combination, with a filing case or cabinet, provided with a series of open compartments for removable files, of a series of files, each comprising a base-board provided with a vertical front piece D at its outer end, adapted to close the front opening of the compartment occupied thereby, and a paper holding device located upon the said base-board, at or near its rear or side margin, substantially as described. 2nd. The combination, with a filing case or cabinet, provided with a series of open compartments for removable files, of a series of files, each comprising a base-board provided with a vertical front piece D at its outer end, adapted to close the front opening of the compartment occupied thereby, and one or more receiving wires, as E, located upon the said base-board, at or near its rear or side margin, substantially as described. 3rd. The combination, with a filing case or cabinet, provided with a series of open compartments for removable files, of a series of files, each comprising a base-board provided with a vertical front-piece D at its outer end, adapted to close the front opening of the compartment occupied thereby, and a paper holding device located upon the said base-board at or near its rear or side margin, said paper-holding device comprising one or more stationary receiving wires and one or more arched and movable transfer wires, substantially as and for the purpose set forth. 4th. The combination, with a filing case or cabinet, provided with a series of open compartments, of a series of files, each comprising a base-board, provided with a vertical front-piece D at its outer end, and a paper holding device located upon the base-board, at or near its side or rear margin, a side wall of each of the said compartments being provided with a guide-piece engaging one of the side margins of the base-board, and operating to sustain the file, when the latter is drawn partially from the compartment, substantially as described.

No. 24,024. System of Railway Signalling.

(Système de Signal de Chemin de Fer)

Thomas A. Edison, Menlo Park N. J. and Ezra T. Gilliland, New York, N.Y., U.S., 10th May, 1886; 5 years.

Claim.—1st. In railway inductive signalling apparatus, the combination, with one or more telegraph wires and their instruments, of a train having railway signalling, transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses and acting inductively upon and from the telegraph wire or wires, a station having transmitting and receiving instruments for such induction, railway signals and shunts around the telegraph keys, to maintain a closed line circuit for the induction railway signals, substantially as set forth. 2nd. In a railway inductive signalling apparatus, the combination, with one or more telegraph wires and their instruments, of a train having railway signalling, transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses, and acting inductively upon and from the telegraph wire or wires, a station having transmitting and receiving instruments for such induction railway signals and condenser shunts around the telegraph keys, to maintain a closed line circuit for the induction railway signals, substantially as set forth. 3rd. In railway inductive signalling apparatus, the combination, with several telegraph wires and their instruments, of a train having railway signalling transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses, and acting inductively upon and from the telegraph wires collectively, a station having transmitting and receiving instruments for such induction railway signals and condenser shunts around the telegraph keys, to maintain a closed line circuit for the induction railway signals, substantially as set forth. 4th. In railway inductive signalling apparatus, the combination, with several telegraph wires and their instruments, of a train having railway signalling, transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses, and acting inductively upon and from the telegraph wires collectively, a station having transmitting and receiving instruments for such induction railway signals and condenser shunts around the telegraph keys, to maintain a closed line circuit for the induction railway signals, substantially as set forth. 5th. In railway inductive signalling apparatus, the combination with several telegraph wires and their instruments, of trains and stations having railway signalling instruments operating inductively upon and from such telegraph wires collectively, and condensers in shunts around the telegraph keys, substantially as set forth. 6th. In railway inductive signalling apparatus, the combination, with several telegraph wires and their instruments, of trains and stations having railway signalling instruments connected in multiple arc with such telegraph wires by condensing surfaces, and condensers in shunts around the telegraph keys, substantially as set forth.

No. 24,025. System of Railway Signalling.

(Système de Signal de Chemin de Fer.)

Thomas A. Edison, Menlo Park, N. J. and Ezra T. Gilliland, New York, N. Y., U.S., 10th May, 1886; 5 years.

Claim.—1st. In railway inductive signalling apparatus, the combination, with a number of telegraph wires and their instruments, of a

train having railway signalling, transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses, and acting inductively upon and from the telegraph wires collectively, and a station having transmitting and receiving instruments for such induction railway signals, substantially as set forth. 2nd. In railway inductive signalling apparatus, the combination, with a number of telegraph wires and their instruments, of a train having railway signalling, transmitting and receiving instruments, operating to transmit and receive signals produced by induction impulses, and acting inductively upon and from the telegraph wires collectively, and a station having transmitting and receiving instruments for such induction railway signals, also acting inductively upon and from the telegraph wires collectively, substantially as set forth. 3rd. In railway inductive signalling apparatus, the combination, with the line therefor, composed of one or more telegraph wires having ordinary Morse instruments at a terminal office, beyond the railway signalling office, of a ground connection from such telegraph wire or wires, between the terminal telegraph instruments and the railway station signalling apparatus, such ground connection acting to shunt for the railway signals, the breaks formed by the Morse keys at the terminal telegraph office, substantially as set forth. 4th. In railway inductive signalling apparatus, the combination, with the line therefor, composed of one or more telegraph wires having ordinary Morse instruments at a terminal office, beyond the railway signalling office, of a condenser ground connection from such telegraph wire or wires, between the terminal telegraph instruments and the railway station signalling apparatus, substantially as set forth. 5th. In railway inductive signalling apparatus, the combination, with the line of an inductive ground connection therefrom through two wires, one including transmitting apparatus and the other receiving apparatus, for the railway induction signals, and means for closing such wires alternately, substantially as set forth. 6th. In railway inductive signalling apparatus, the combination, for transmitting signals, of a magnet and a battery, revolving circuit breaker and key shunting such magnet, substantially as set forth. 7th. In railway inductive signalling apparatus, the combination, for transmitting signals, of a magnet, a shunt around such magnet, including a battery, a revolving circuit breaker and a key, and a condenser shunting such circuit breaker, substantially as set forth.

No. 24,026. Feeder and Band Cutter for Thrashing Machines (*Alimentateur et Coupe-Hart pour Machines à Battre.*)

Francis and Charles Sanford, Fenelon Falls, Ont., 10th May 1886. 5 years.

Claim.—1st. The combination of the cylinder shaft A, posts A, A', arms B, B', b, posts C, C', beater D, D', cutter E, E', frame F, rollers G, G', G', upon H, H', shaft I, and the pulleys and connections, as described. 2nd. The combination of the housing A, A', fast arm ends B, hinged piece B', braces c and shaft I. 3rd. The combination of the arms B, B', posts C, C', beater D, D', and cutter E, E'. 4th. The combination of the slatted apron H, H', rollers G, G', G', pulley a, shaft I, pulleys i, i' and pulley a'. 5th. The combination of the slatted apron H, H', its supporting and driving rollers, frame F, cutter shaft and cutters E, and beater D, D'. 6th. The combination of the cutter shaft E, circular cutters E, pulley c, beater D, D', pulley d, frame G, C', shafts I, pulleys i, i', i', and pulley a, all substantially as shown and described and as and for the purpose set forth.

No. 24,027. Apparatus for Preserving Meat, etc. (*Apparatus pour Conserver la Viande, etc.*)

William Balder and George H. Webster, Chicago, Ill., U. S., 10th May, 1886. 5 years.

Claim.—1st. In apparatus for preserving, etc., the combination, with an exhaust-chamber, of an inner tube extending to, or near to the bottom of said chamber, and having a reciprocating piston therein, and a branch feed-tube extending laterally from the piston-tube and open at its outer end, substantially as shown and described. 2nd. The combination, in an air-exhausting apparatus, of the frame A, the chamber c, having an opening in one side to receive wax, the frame C, the plunger F, the lever a, the lever d and the spring a, said parts being connected with any suitable support, and being operated substantially as and for the purpose set forth. 3rd. The combination, in an apparatus for exhausting air from cans or other vessels, of the frame C, the lever d, the spring a and the friction-rollers e, e', all arranged and operated substantially as described and for the purpose set forth. 5th. In an apparatus for exhausting the air from cans or other vessels containing articles to be preserved, the combination, with a sliding frame, within which is contained an exhaust-chamber, having an inner sealing plunger and cylinder, the extended base of said exhaust-chamber being provided with a rubber seating, shaped to fit over and surround an opening in the can, of a spring or its equivalent attached to the frame and serving normally to force the said seating down upon the surface of the can during the sealing operation, substantially as and for the purpose set forth.

No. 24,028. Electrical Switch. (*Commutateur.*)

The Royal Electric Company (Assignee of Frederick Thomson), Montreal, Que., 10th May, 1886. 5 years.

Claim.—1st. In an electrical switch, the combination of the four contact strips C, C', C', C', the two rings or collars upon which said contact strips nominally rest, a main circuit and a loop circuit connected to said contact strips, substantially as described. 2nd. The combination, in an electrical switch, of two rings or collars supported on a core or rod of non-conductive material, the whole being mounted on a shaft and adapted to move between four contact strips, the said strips being terminals of a main and loop circuit, and the said rings or collars arranged so that they can be moved in such a position that the terminals or contact strips of the main circuit will be in contact with one ring or collar, and the terminals or contact strips of the loop circuit will have no contact with either of the

rings or collars, substantially as described. 3rd. The combination of two of the above described switches placed laterally to each other, with their respective shafts connected, and branches of the loop circuit taken to contacts of each switch, and arranged so that the loop circuit can receive current from either of the main circuits, substantially as described.

No. 24,029. Shears and Scissors. (*Forces et Sciseaux.*)

John L. Starks, Russellville, Ky., U.S., 11th May, 1886. 5 years.

Claim.—1st. A pair of scissors or shears, having a spring-actuated plate seated in a recess of one of the blades adjacent to the pivotal point, substantially as described. 2nd. A pair of scissors or shears, having a spring-plate seated in a recess of one of the blades adjacent to the pivotal point thereof, the ends of the plate being turned or bent down to bear against the closed walls of the recess, as set forth. 3rd. A pair of scissors or shears, having a spring-actuated plate, seated in the blades, and pressed normally outward beyond the plane surface of the blades, as set forth. 4th. A pair of scissors or shears, having a spring plate seated in one of the blades, in close proximity to the pivot thereof, substantially as described.

No. 24,030. Collar. (*Faux-Coll.*)

George N. March, Watertown, Mass., U.S., 11th May, 1886. 5 years.

Claim.—1st. An improved article of manufacture, a lady's collar having a body composed of paper or cloth faced paper, provided at its upper edge with a flap integral therewith, and adapted to fold inward or outward for rendering the collar reversible, and with a cape composed of collar muslin, linen or similar material, stitched at its upper edge to the lower edge of said body, said collar being embossed or provided with an ornamental line to form a "cape edge," substantially as described. 2nd. An improved article of manufacture, a lady's collar, having a body composed of paper or cloth-faced paper, provided with a cape composed of muslin, cloth, linen, or similar materials, attached to the lower edge thereof, and at its upper edge with an outwardly turned flap integral with said body, the lower edge of the body and outer edge of the flap being cut on upwardly-curved parallel lines, and the flap folded on an upwardly-curved line of less curvature than that on which the lower edge of the band is cut, substantially as set forth. 3rd. An improved article of manufacture, a lady's collar, having a body composed of paper, or cloth-faced paper, and provided with an out-turned flap integral with said body, and with a cape composed of muslin, cloth, linen or similar materials, the lower edge of the body and the outer edge of the flap being cut in correspondingly curved lines, substantially as described. 4th. An improved article of manufacture, a lady's collar, having a body composed of paper, or cloth-faced paper, provided at its upper edge with a flap integral therewith, and adapted to fold inward or outward for rendering the collar reversible, and with a cape composed of cloth, muslin, linen, or similar material, stitched at its upper edge to the lower edge of said body, substantially as set forth.

No. 24,031. Nail Extractor. (*Tire-Cion.*)

Arthur P. Steward, assignee of Isaac H. Kizer, Washington, D.C., U.S., 11th May, 1886. 5 years.

Claim.—1st. A nail-extractor having a V-shaped notch in one of its sides, substantially as described. 2nd. A nail-extractor having a bearing surface, and a notch in one of its sides, said notch having inclined faces, which intercept the bearing surface of the extractor and form edges b, b', for grasping the nail, substantially as described. 3rd. A nail-extractor having a bearing surface, and a notch in one of its sides, said notch having inclined faces, which intercept the bearing surface of the extractor and form edges b, b', one of the said edges being at substantially right angles to a line drawn lengthwise through the extractor, and the other being inclined thereto, substantially as described. 4th. A nail extractor having a notch in one of its sides, said notch having inclined faces, which intercept each other at the inner limit of the notch, substantially as described. 5th. A nail extractor having a bearing surface and a series of notches of various dimensions in its sides, each of said notches having inclined faces, which intercept the bearing surface of the extractor and form edges b, b', for grasping the nail, substantially as described. 6th. A device for pulling nails having a nail extracting notch at one side thereof, a hole for the insertion of a handle, a collar surrounding said hole, and a brace or bar extending from said collar to or near the end of the device, substantially as described.

No. 24,032. Brick. (*Brigue.*)

Millard F. Ellis, Atchison, Ks., U.S., 11th May, 1886. 5 years.

Claim.—1st. The peculiar shape of the brick a for veneering purposes, the same having a slot, substantially as described. 2nd. The method of securing said veneering bricks to the studding or frame of a house, or building, by means of wooden cleats d, d' nailed to said frame, over which the slots, f, of said veneering bricks fit, and which hold the wall to the frame of the wooden building, substantially as and for the purpose set forth.

No. 24,033. Dynamo Electric Machine. (*Machine Dynamo-Electrique.*)

Mikola Tesla, Rahway, N.J., U.S., 11th May, 1886. 5 years.

Claim.—1st. The combination, with the commutator having two or more main brushes, and an auxiliary brush, of the field helices having their ends connected to the main brushes, and a branch or shunt connection from an intermediate point of the field helices to the auxiliary brush, and means for varying the relative position upon the commutator of the respective brushes, substantially as set forth. 2nd. The combination, with the commutator and main brushes, and one or more auxiliary brushes of the helices in the main circuits, and one or more shunt connections from the field helices to the auxiliary brushes, the relative positions upon the commutator of the respective brushes being adjustable for the purpose set forth.

No. 24,034. Distillation of Hydro-Carbon Oils. (*Distillation des Huiles Minérales.*)

Herman Fruseh, London, Ont., 11th May, 1886; 5 years.

Claim.—1st. An oil-still having in immediate proximity to the still, and in free communication therewith, a dome of the proportions and filled with irregular blocks or pieces of about the size stated, and having also the vapour escape pipe leading from said dome, so that the hydro-carbon vapours, in leaving the still pass by tortuous paths without appreciable resistance through material of practically the temperature of the boiling oil, and deposit thereon any particles of liquid held in suspension without being themselves condensed to a material extent, substantially as described. 2nd. In the distillation of hydro-carbon oils, the improvement consisting in passing the hydro-carbon vapours from the still through a mass of broken stone, or like material of limited conductivity, having between the blocks or pieces of such material, irregular passages of a size to permit the free egress of the vapours, so as to induce the precipitation of the liquid particles in suspension by the tortuous course of the vapours in contradistinction to a filtering or atomizing operation, said material being kept at or near the temperature of the boiling oil to prevent injurious cooling of the vapours, substantially as described. 3rd. In the distillation of hydro-carbon oils, the improvement consisting in passing the rising vapours back and forth between a succession of horizontal overlapping drip plates, such as the alternating rings and disks described, and thereby insuring the successive action upon the vapours of the hot hydro-carbon liquid, condensed in said plates in the form of showers, falling through the vapours from one plate to the other, substantially as described. 4th. The method of effecting the fractional condensation of the mixed hydro-carbon vapours from the oil still, by passing the rising vapours back and forth between horizontal overlapping drip plates, and thereby insuring the successive action upon the vapours of the condensed liquid, falling in showers through the vapour from one plate to another, and withdrawing the condensed liquid at different points so that the vapour will first be subjected to the showers of the hottest liquid, and then successively to those of lower temperature, substantially as described. 5th. In combination with an oil still, columns or sections of a column connected in series and receiving in succession the mixed vapours from said still, and provided inside with a series of alternating disks and rings, each column or section having its individual outlet for drawing off the oil separately from the different columns or sections, substantially as described. 6th. A column or upright pipe divided by an offset or bend into sections having each a series of rings, and disks inside the same, and provided with separate outlets for the condensed liquid or oil, substantially as described. 7th. An apparatus comprising tubular parts or sections of a column placed at different levels and connected in series, so that the vapours pass through them successively, and immersed in or surrounded by a common medium for lowering the temperature in said parts or sections, each part or section being provided with its own liquid outlet, and with a series of alternating rings and disks inside the same, substantially as described. 8th. The combination, with a still, of a group of parallel columns having inlets at the bottom, and outlets at the top, a box containing said columns, a series of alternating rings and disks in each column, a manifold at the lower ends of said columns, a vapour pipe leading from the still to said manifold, and a pipe for drawing off the liquid from said manifold, so that the vapour may pass at once into all the columns, substantially as described. 9th. The combination, with the enclosing pipe or column, of the rings and disks, the tie rods, the separating sleeves, and the suspending plate or frame, substantially as described. 10th. In the fractional condensation of hydro-carbon vapours by passing successively through a number of columns, or sections of a column, so as gradually to lower the temperature of the vapours, and drawing off the condensed liquid from each column or section separately, the improvement consisting in exposing the vapours in each chamber to a succession of showers or streams of the liquid condensed in that chamber, and thus effecting the desired successive partial condensation by repeated exposure of the vapours to hot hydro-carbon liquid approximating the vapours in temperature, and like them gradually diminishing in temperature for each column or section as well as by the lower temperature in each column or section, the said improvement being carried out in an apparatus such as the series of columns or sections provided inside with alternating rings and disks, and immersed in, or surrounded by a hot medium calculated to induce a gradual reduction of the vapours in temperature, and to effect a repeated contact between the vapours and the condensed liquid, substantially as described.

No. 24,035. Construction of the Teeth of Cross-Cut Saws. (*Fabrication des Dents des Scies de Travers.*)

Terrence O'Loughlin, Spanish River, Ont., 11th May, 1886; 5 years.

Claim.—1st. A circular cross-cut saw constructed with teeth, having a knife edge on the front of each tooth, and terminating in a sloping gullet at the root of each tooth, and the face of the tooth running in a line to a point behind the centre of the saw, each alternate tooth having the cutting edge sloping in one direction, and the cutting edge of the intervening teeth sloping in the opposite direction, the teeth which act on the end of the board being without set, and the teeth which act on the part being cut off have a small portion of set only substantially as shown and described. 2nd. A saw tooth constructed with a knife edge on either side of the front of the tooth, and running in a line back of the point of the tooth, and terminating in a sloping gullet at the root of the tooth, as shown and described.

No. 24,036. Steam Generator.

(*Générateur de Vapeur.*)

Jean B. Vincent, Montreal, Que., 11th May, 1886; 5 years.

Résumé.—1o. La combinaison du générateur auxiliaire A avec les bouillottes, à l'aide du tuyau B et du tuyau à vapeur C, tel que décrit. 2o. La combinaison des tuyaux horizontaux D avec le

générateur auxiliaire A, tel que décrit. 3o. La combinaison avec les générateur auxiliaire A d'un injecteur de pétrole E, à l'aide du tuyau I, tel que ci-dessus décrit et pour les fins indiquées.

No. 24,037. Commutator for Electro-Magnetic Motors. (*Commutateur pour Moteurs Electro-Magnétiques.*)

Seigismund Mohr, Quebec, Frederick Thomson and Monroe L. Ross, Montreal, Que., 12th May, 1886; 5 years.

Claim.—1st. A commutator for an electro-magnetic motor having segments placed transversely on the periphery of the drum, and secured thereto by an elongated screw clamp, the segments having holes or slots in each end to allow the toe or end of clamp to enter, substantially as described. 2nd. A commutator for an electro-magnetic motor with movable strips of non-conducting material placed between its segments, and said segments having their lower or inside edges tapered and arranged in such a position as to hold said insulation strips between them, substantially as described. 3rd. The combination, in a commutator for an electro-magnetic motor, of a segment tapered at its lower edges, and a slot or hole at each end, an elongated screw clamp for fastening said segment to the periphery of a drum of insulating material, and movable strips of non-conducting material, such as boxwood or slate, placed between said segments and shaped so that the lower or tapered edges of the segments shall hold them in position, substantially as described.

No. 24,038. Metal Bung for Barrels.

(*Bouclon Métallique pour Barils*)

Martin J. Woodward, (assignee of John H. Wynne,) Petrolia, Ont., 12th May, 1886; 5 years.

Claim.—1st. The combination of the hollow chamber F with the projections A A therein, for the purpose of screwing the bung into the barrel. 2nd. The combination of the hollow chamber F, and the vents C, C through the centre thereof, and the valve H, and the screw B, whereby the vents C, C are regulated, opened or closed. 3rd. The combination of the flange D with the screw K, by the construction whereof the bung, when in use, is even with the surface of the face of the barrel.

No. 24,039. Car - Coupling.

(*Attelage des Chars.*)

Charles E. Michaud, St. Michel d'Yamaska, Que., 14th May, 1886; 5 years.

Claim.—1st. The combination of the drawhead C, ridge c, extended face c₁, coupling pin D, bracket F, long arm G, vertical limb g, catch p₁, curved end p₁₁, rocking shaft H H₁ H₂, rod h, lever H₁ H₂, slide I, spring J, guide J, spring K, lever L, and rod M. 2nd. The combination of the drawhead C, ridge c, extended face c₁, coupling pin D, bracket F, long arm G, vertical limb g, catch p₁, curved end p₁₁, rocking shaft H H₁ H₂, rod h, slide I, spring J, guide J, spring K, and lever L. 3rd. The combination of the drawhead C, ridge c, extended face c₁, pin D, bracket F, arm J, p₁ g₁ and slide I. 4th. The combination of the rocking shaft H H₁ H₂, rods h, lever H₁ H₂, and arm G. 5th. The combination of the drawhead C, ridge c, extended face c₁, and slide I. 6th. The combination of the drawhead C, ridge c, fork J, prongs j, j₁, bent end j₁₁, spring K, lever L, and rod M. 7th. The combination of the drawhead C, ridge c, link D, fork J, prongs j, j₁, and suitable operating devices. 8th. The combination of the drawhead C, bracket F, arm G, limb g, catch p₁, bent end p₁₁, and pin D, all substantially as shown and described, and as used for the purpose set forth.

No. 24,040. Car - Coupling.

(*Attelage de Chars.*)

Calvin Keeler, Hobart, N.Y., U.S., 14th May, 1886; 5 years.

Claim.—1st. The combination, with the drawhead a, having the shoulder m, and the apertured flange c, of the lever s pivoted in a slot on the top of the drawhead, and provided with the edge J, and the fork h, substantially as herein shown and described. 2nd. The combination, with a drawhead, of a lever pivoted in the same, and provided with a fork on its swinging end, and having the cam-edge J, substantially as herein shown and described.

No. 24,041. Force Pump. (*Pompe Foulante.*)

William F. Yates, Oil Springs, Ont., 13th May, 1886; 5 years.

Claim.—1st. The combination of the metal or vulcanized rubber rings E, E, E, with the metal piston D, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the cut-off F and the ports H, H₁, H₂ and K, K, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the inner cylinder A₁, with the glands J, J, and the stuffing-box L, L, and the cut-off F and the piston P, substantially as and for the purposes hereinbefore set forth. 4th. The combination of the head C, with the glands J, J, the stuffing-box L, L, and the discharge N, substantially as and for the purposes hereinbefore set forth.

No. 24,042. Petroleum and Gas Engine.

(*Machine à Pétrole et à Gaz.*)

Johannes Spiel, Berlin, Germany, 15th May, 1886; 5 years.

Claim.—1st. In a gas or hydro-carbon vapour engine, the measuring and mixing mechanism actuated in any convenient way, consisting of a plunger working in a cylinder, through the end of which works a plug having a channel cut half-way round its central part, and which plug is worked with a reciprocating rotary motion to open as the plunger descends, and the working piston of the engine makes its first stroke, and of an air valve opened at the same time, in combination with a mixing space under the said air valve, a bent pipe leading therefrom into the ignition chamber of the engine, the top

end of which is surrounded by an annular gutter, substantially as and for the purpose described, with reference to the accompanying drawings. 2nd. In the slide of a gas or hydro-carbon vapour engine, which is traversed to and fro between an external lighting flame and a face foamed upon the cylinder and against which it is held in any convenient way, the combination of a port in the cylinder through which combustible mixture can pass into a chamber in the valve, as the valve starts on its out stroke, into which projects a short tube from the outer face of said slide, leaving a circular space in front of it of like diameter, and an external annular space around it to which combustible mixture is fed during the outstroke and return stroke of the valve through a small port in the cylinder opening into a horizontal shallow channel (part of which is only a slit) in the cylinder face of the slide, said channel being of the length of the stroke of the slide, and thence along a port in the body of the slide opening into the external annular space aforesaid with a spring device for effecting a rapid return stroke, substantially as described, with reference to the accompanying drawings. 3rd. In the slide valve of a gas or hydro-carbon vapour engine for igniting a high pressure charge of combustible within the engine cylinder, the combination, with a narrow slit in the cylinder face of said slide, which slit forms part of a channel for the feed of combustible mixture from the engine cylinder to the cavity in the body of the slide, of a transverse screw in the solid part of the slide, and having its nose close to the slit, whereby the width of the said slit can be increased by advancing the nose of the screw and allowed to narrow by withdrawing the screw, substantially as and for the purpose described with reference to the accompanying figures. 4th. In a gas or hydro-carbon vapour engine, the combination of an injection pump for supplying the combustible in measured quantity, an air-valve for allowing of the passage of air, both pump and valve being actuated by a lever connected to the latter and working in a slot of adjustable depth in the head of the pump plunger, with a supply and a delivery valve upon the delivery port of the pump, said port being impeded or obstructed with a fluted pin which, with a conical obstruction opposite the ends of the delivery port, break up the combustible into a fine spray as it is being injected into a cavity into which the air is admitted just before the air valve is opened, to allow the combustible mixture to pass on into the ignition chamber of the engine, substantially as described with reference to the accompanying drawings. 5th. In a gas or hydro-carbon vapour engine, the combination of reciprocating slide having a transverse cavity in its end into which a spring pushes a rod when said cavity is opposite the end of said rod, the other end of which is thereby compelled to open the delivery valve and close the supply valve on the delivery port of an injection pump with the lever operating the plunger of said pump and the air supply valve of the engine, substantially as described, with reference to the accompanying drawings. 6th. In a gas or hydro-carbon vapour engine, the combination of the port along which the combustible passes to meet with its quota of atmospheric air, or other supporter of combustion, with a fluted or webbed pin lying therein, and leaving only a thin tubular space between itself and the bore of the port, thereby compelling the combustible to assume the form of a thin tube with a conical valve opposite the exit end of said port, which breaks up the thin tube of vapour into fine spray as it mixes with said atmospheric air or other supporter of combustion, substantially as described with reference to the accompanying drawings. 7th. In a gas or hydro-carbon vapour engine, the combination of an injection pump for supplying the combustible with a valve for allowing of the passage past it of the combustible and air, and controlling the passage into the cylinder of the engine, both actuated by a cross-head rigidly connected to the head of the air-valve spindle and working freely in an adjustable slot in the head of the pump plunger, substantially as described with reference to the accompanying drawings. 8th. In a gas or hydro-carbon vapour engine, governing the engine by a governor geared to a slide which surrounds the projecting end of a valve spindle and prevents a lever from pushing it in to open the combustible delivery valve when the speed of the engine increases, and which slide is withdrawn by the governor as it regains its normal speed, substantially as described with reference to the accompanying drawings.

No. 24,043. Devices for Lubricating Wheels and Pulleys. (*Appareil pour Graisser les Roues et les Poulies.*)

William P. Daniell, Girardville, Penn., U. S., 15th May, 1886, 5 years.
Claim.—1st. In loose wheels or pulleys, having their hubs constructed with an interior oil recess or chamber in open communication with the bore of the hub, the combination, with the hub, of an oiling tube in open communication with the exterior of the hub and arranged to project within said chamber to the full extent of the depths thereof or thereabout, substantially as specified. 2nd. The combination, with the hub A, of a loose wheel or pulley having an oil recess or chamber B, arranged to extend around the interior of the hub of the oiling tube C, arranged to project within said chamber, and so that its inner end is in line or thereabout with the bore of the hub, essentially as shown and described.

No. 24,044. Apparatus for Mixing and Disintegrating Fluid and Semi-Fluid Substances. (*Appareil pour Mélanger et Désagréger les Corps Fluides et Semi-Fluides.*)

Robert McNichol and Isaac Walsh, Manchester, Eng., 15th May, 1886; 5 years.
Claim.—1st. In a mixer, the combination, with the vessel A and rod C, the discs E, with diagonal slits F, substantially as and for the purpose set forth. 2nd. In a fluid or semi-fluid mixer, the combination of the vessel A, covers B and H, rod C and discs E with diagonal slits F, all arranged substantially as and for the purpose set forth.

No. 24,045. Apparatus for Raising Sunken Ships, etc. (*Appareil pour Rélever les Navires Coulés, etc.*)

George S. Dodman, Liverpool, Eng., 15th May, 1886; 5 years.

Claim.—1st. In an apparatus for raising ships or vessels, the air-supply valve, consisting of the box K, swinging valve a attached to the spindle d, projecting ring m, the locking bar o, the nozzle mouth p, the spring of and the wheel q, in combination with the frame A and the wire r, substantially as and for the purpose set forth. 2nd. In an apparatus for raising ships and vessels, the combination of the top piece A, the bottom piece B, the flexible sides C, the jointed stays E, the relief valve r, the supply valve s, the chains F and G and the rollers h, all arranged and operated substantially as and for the purpose set forth.

No. 24,046. Automatic Saw Setting and Sharpening Machine. (*Machinerie Automatique pour Donner la Voie et Régler les Scies.*)

John Anderson, Newcastle-upon-Tyne, Eng., 10th May, 1886, 5 years.

Claim.—1st. In a saw-setting and sharpening machine, the lever L with lip O, in combination with spring N and cam J, substantially as and for the purpose set forth. 2nd. The arm P, pivoted at K, raised by link Q, connected with lever L, substantially as set forth. 3rd. The roller B, in combination with cam S, substantially as and for the purpose set forth. 4th. The cam S on axle A for lifting the lever T, substantially as shown. 5th. The lever T, crank U, bar V and pawl W, combined as shown, and operated for the purpose of moving the saw forward in combination with the cam S, substantially as set forth. 6th. The levers Z, Z', with hammers A', A'', pivoted on shaft V', and connected to lever A' by arms B, B', in combination with the spring F and cam S, substantially as and for the purpose set forth. 7th. The gauge D, connected to lever D', in combination with set screws D'', substantially as and for the purpose set forth.

No. 24,047. Tea and Coffee Pot, etc. (*Thière et Cafetière, etc.*)

Matthew Boyd, Brixton, Eng., 15th May, 1886, 5 years.

Claim.—1st. The combination, with an infusing vessel, of a tube of perforated material or wire gauze fastened around and completely surrounding the outlet therefrom, and stretched across and secured in the said vessel, substantially as specified. 2nd. The combination of a perforated or gauze tube, with a sliding spring pressed collar to engage with opposite recess, and projection in an infusing vessel, substantially as and for the purpose set forth.

No. 20,048. Barrow. (*Brouette.*)

Horace Swote, Bakersville, Eng., 15th May, 1886, 5 years.

Claim.—1st. The platform C, in combination with the wheel barrow A, substantially as and for the purpose set forth. 2nd. The platform C, in combination with the stays n, a and the legs h, h, substantially as and for the purpose set forth. 3rd. In a wheel barrow, the platform C hinged to the stays n, n, and provided with legs h, h, substantially as and for the purpose set forth.

No. 24,049. Combination Table, Settee, Chair and Bedstead. (*Table Causeuse, Fauteuil et Couchette Combinés.*)

James P. Farrell, New York, N. Y., U. S., 15th May, 1886, 5 years.

Claim.—1st. In a combination table, settee, chair and bedstead, the combination, with the frame having a bottom board L pivoted at its forward edge, of the rocking bar T journaled to the upper ends of the rear posts A, the frame V sliding upon the said rocking bar, and the table top W connected with the said sliding frame, substantially as herein shown and described, whereby the said table top can be readily adjusted at the rear of the frame to form a settee, or above the frame to form a table, as set forth. 2nd. In a combination table, settee, chair and bedstead, the combination, with the frame having a bottom board L pivoted at its forward edge, the rocking bar T journaled to the upper ends of the rear posts A, the frame V sliding upon the said rocking bar, and the table top W hinged to the forward edge of the said sliding frame, of the brace frame Z hinged at its rear edge to the rear bar of the sliding frame, and the serrated bar a attached to the said table top, whereby the said table top can be readily raised into and firmly supported in an inclined position, as set forth. 3rd. In a combination table, settee, chair and bedstead, the combination, with the frame having vertical grooves N in its rear posts and horizontal grooves O in its arms of the back board M pivoted at the ends of its lower edge, and provided with bolt or button pivots T, substantially as herein shown and described, whereby the said back-board can be readily adjusted in vertical position to serve as a settee back, in a lower horizontal position to serve as a part of a bed bottom, or in an upper horizontal position to serve as a shelf, as set forth. 4th. In a combination table, settee, chair and bedstead, the combination, with the rear connecting board C, the rear end connecting boards E and the centre connecting board m recessed at its upper edge, of the bars Q having stops R, substantially as herein shown and described, whereby the frame is guided when being extended and contracted and the rear part of the bed bottom is supported, as set forth. 5th. In a combination table, settee, chair and bedstead, the combination, with the bottom board L, and the back board M, of the bolt S, substantially as herein shown and described, whereby the said back board is secured in place when in a vertical position, as set forth. 6th. In a combination table, chair, settee and bedstead, the combination, with the bottom board L and the table top W, of the interlocking bolts S, c, substantially as herein shown and described, whereby the said table top is secured in place when resting upon the edge of the said bottom board, as set forth. 7th. In a combination table, settee, chair and bedstead, the combination, with the recessed front posts H and the bottom board L, of the plates e attached to the said posts, the springs f attached at one end to the plates e, and having curved heads g, and stop studs h and catch studs i attached to the said springs, and projecting through the said plates, substantially as herein shown and described, whereby the said bottom board will

be firmly secured in a vertical position and can be readily released, as set forth. 8th. In a combination cable, settee, chair and bedstead, the combination, with the frame having chamber *k*, of the bottom board *L* having a seat *a* attached to its lower side, and provided with a hinged portion *c* forming a cover substantially as herein shown and described.

No. 24,050. Dredger. (*Dragueur.*)

John H. Bolles and John N. S. Williams, San Francisco, Cal., U.S., 15th May, 1886; 5 years.

Claim.—1st. A rotary cutter for a suction dredging machine, having an inner drum with a reservoir communicating with the suction-pipe, and a rotating outer drum with buckets on its face, said buckets being perforated and arranged across the entire face of the drum in a straight or spiral or inclined or other course, and having their edges straight or serrated as desired, substantially as herein described. 2nd. A suction dredger cutter, comprising an outer rotating drum carrying buckets upon its face, and an inner drum on which the outer drum rotates, and having a reservoir communication with the suction-pipe, said inner drum being adapted to have a rotary adjustment, substantially as herein described. 3rd. In a dredger, a rotary cutter adapted to be adjusted through arcs in vertical and horizontal planes, in combination with a suction-pipe communicating with the cutter and adapted to have an axial or longitudinal adjustment, and to move radially to accommodate itself to the movements of the cutter, substantially as herein described. 4th. In a dredger, a rotary cutter, a broom supporting and directing the cutter, and pivoted to the screw of the dredger and adapted to be adjusted through arcs in vertical and horizontal planes, a lay shaft on the boom connected at its outer end with and driving the cutter through suitable gears, and a series of gear and shafts by which power is transmitted from the engine to the inner end of the lay shaft, in combination with a suction-pipe communicating with the cutter and having adjustments adapting it to accommodate itself to those of the cutter, substantially as herein described. 5th. In a dredger having a rotary cutter, and a suction-pipe communicating therewith, the means by which the cutter is driven and its adjustments directed, consisting of the trussed boom pivoted at its outer end to the suction-pipe, the lay shaft on said boom connected at its outer end by gearing with the cutter, and the series of gears, and shafts at the in-board end of the boom and lay shaft, as herein described, whereby said shaft is driven from the engine during all the adjustments of the cutter, substantially as herein described. 6th. The method of controlling the movements of a dredger-screw, consisting in retaining it by one set of spuds moving a second set, while the screw is so held to a fresh position in readiness to be dropped, then moving the screw or boat on the first set to its fresh position, and then dropping the second set to hold the screw in said position while the spuds of the first set hoisted and the operation repeated, substantially as herein described.

No. 24,051. Lacing Cord Fastening for Boots, etc. (*Agrafe pour Lacer les Bottes, etc.*)

Frank B. Comins, New Bedford, and Edward K. Butler, Boston, Mass., U.S., 15th May, 1886; 5 years.

Claim.—1st. A lacing cord fastening device having the following elements, viz. a hook or stud having a base collar, a neck, an outer head provided with a pendent lip, and prongs or other suitable means of securing it to the article to be laced, and a two-armed pawl or dog pivoted between the base collar and outer head of said hook, and arranged to grip the lacing cord between its upper end and said pendent lip, substantially as described. 2nd. In a lacing cord fastening device, the combination of a hook having the base collar *a*, the neck *b*, the outer head *c*, the pendent lip *d*, and the stop lug *e*, with the two armed pawl or dog *f*, all constructed, arranged and adapted to operate substantially as and for the purposes described.

No. 24,052. Device for Converting Motion in Oil Pumping Apparatus. (*Appareil pour Changer le Mouvement dans les Machines à Pomper l'Huile.*)

George Allan, Franklin, Penn., U.S., 17th May, 1886; 5 years.

Claim.—1st. The combination, with an upright shaft, and means for rotating it, of an eccentric, rigidly secured on the shaft, a strap or ring mounted on the eccentric, and pump-actuating rods attached to the strap or ring, substantially as set forth. 2nd. The combination, with an upright shaft, and means for rotating it, of one or more eccentric disks or wheels secured on the shaft, straps or rings loosely mounted on the eccentrics, and pump-actuating rods secured to the straps or rings, substantially as set forth.

No. 24,053. Drill Chuck. (*Mandrin à Forer.*)

Charles E. Stone, Amesbury, Mass., U.S., 17th May, 1886; 5 years.

Claim.—1st. In a drill chuck, the combination, with the axially bored externally threaded countersunk shank *A*, of the internally threaded sleeve *B* having a conically bored end, the clamping jaws *b* formed of segments of a cylinder grooved longitudinally and having bevelled ends, and the socket *d*, substantially as herein shown and described. 2nd. In a drill chuck, the combination, with the axially bored externally threaded countersunk shank *A*, of the internally threaded sleeve having a conically bored radially slotted end, the clamping jaws *b* formed of segments of a cylinder grooved longitudinally having bevelled ends, and provided with leathers *h* and the socket *d*, substantially as specified. 3rd. The combination, with the axially bored countersunk shaft *A*, having an external thread at one end and an internal thread at the opposite end, of the internally threaded sleeve *B* having a conically bored end *h*, the jaws *b* formed of segments of a cylinder, and having longitudinal grooves and bevelled ends, the socket *d* adapted to receive the shank of the drill,

and arranged to move longitudinally in the shank *A* without turning therein, and the adjusting screw *o*, fitted to the internally threaded part of the shank *A*, and bearing against the socket *d*, substantially as herein described. 4th. As an improved article of manufacture, a drill chuck formed of a shank threaded internally at one end, and externally at the opposite end countersunk and slotted internally, a socket *d* fitted to the bore of the shank, and provided with a feather *r* received in the internal slot, the adjusting screw *o* received in the internally threaded part of the shank, and bearing against the back of the socket, the internally threaded sleeve *B* fitted to the externally threaded part of the shank *A*, and having a conically bored end *h*, and jaws *b* formed of segments of a cylinder grooved longitudinally on their adjacent faces, and having bevelled ends, as herein specified.

No. 24,054. Ice Velocipede.

(*Velocipède - Traineau.*)

Andrew Wacker, Kingston, N. Y., U.S., 17th May, 1886; 5 years.

Claim.—1st. The combination of the sled frame, the driving-wheel having the cranks, the draw-bars loosely connected at one end to the shaft of the driving-wheel, the king-bolt connecting the draw-bars and sled-frame, the operating handles or levers carried by the draw-bars, and links intermediate of the operating handles and the cranks of the driving-wheel, substantially as described for the purpose set forth. 2nd. The combination of the sled-frame, the driving-wheel having the cranks, the bifurcated draw-bars arranged on opposite sides of the driving-wheel, and having one of their ends loosely connected to the shafts thereof, the transverse plates connecting the rear ends of the arms of the bifurcated draw-bars, the king bolt pivotally connecting the plates and the sled-frame together, the pivoted levers carried by the draw-bars and links intermediate of the levers and the cranks of the driving-wheel, substantially as described. 3rd. The combination of the sled-frame, a driving-wheel having the cranks, the draw-bars arranged on opposite sides of the driving-wheel, and loosely connected at one end to the shaft thereof, said draw-bars being bifurcated to provide the upper and lower arms *d*, *db*, the transverse plates *h*, *h'* connecting the free ends of the draw-bar arms, a staple *k* secured to sled-frame, a king-bolt passing through the transverse plates, and the staple and sled-frame to pivotally connect the same together, the operating levers pivoted on the draw-bars, the guides *l*, *l'* for said levers carried by the draw-bars, the links intermediate of the levers and cranks of the driving-wheels, and the foot-pieces *t*, *t'* carried by the arms *d* of the draw-bars, substantially as described. 4th. In a vehicle adapted to be used upon ice, the combination of a driving-wheel provided upon its periphery with spurs, and at its centre with cranks, with draw-bars *D*, *D'*, levers *K*, *K'*, connecting rods *L*, king-bolt *B*, leaf-spring *m*, and body *A* of the vehicle. 5th. In an ice vehicle, a body *A* having a spring rod *m* adapted to bear against a king-bolt *B*, thereby causing a wheel *C* connected by draw-bars *D*, *D'* to said king-bolt to bear with greater or less force upon the ice, as and for the purpose set forth and described.

No. 24,055. Mechanism for Drawing Geometrical Figures. (*Equerre Graduee.*)

Frances H. Wood, Acton Green, Cheswick, Eng., 17th May, 1886; 5 years.

Claim.—1st. In an implement for drawing geometrical figures, the parts *C*, *D* and *F*, arranged substantially as and for the purpose set forth. 2nd. The pencil-holder *P*, in combination with the bars *t* and *D*, substantially as and for the purpose set forth.

No. 23,056. Heating Drum.

(*Poêle-Sourd.*)

John G. Moser, Blyth, Ont., 17th May, 1886; 5 years.

Claim.—1st. The drum *L* having a partition *A B C D*, hot air pipes *E E*, and apertures for pipes *F* and *G*, substantially as described. 2nd. The drum *L*, in combination with the pipe *G*, pipe *F*, pipes *E E*, and dampers *H* and *J*, all constructed and arranged as described for the purpose hereinbefore set forth.

No. 24,057. Gentleman's Drawer Supporter.

(*Agrafe de Caleçon d'Homme.*)

George Morrow, Pullman, Ill., U.S., 17th May, 1886; 5 years.

Claim.—1st. A gentleman's drawer-supporter, consisting of a broad metallic hook, the lower end of which is turned over, forming a clip which embraces one side of a safety pin, said clip and the side of the pin forming a hinge-joint, which permits the free movement of the two parts of the support relative to each other, substantially as described. 2nd. The broad hook *A* having a turned over clipping lock *a* at its lower end, adapted to receive and hold in place with the hook, the safety pin *B b*, the whole combined and arranged substantially as described.

No. 24,058. Transmitting Motion in Oil Pumping Apparatus. (*Transmission du Mouvement dans les Machines à Pomper l'Huile.*)

George Allen, Franklin, Penn., U.S., 17th May, 1886; 5 years.

Claim.—1st. In an apparatus for pumping oil wells, the combination, with an upright shaft and a crank secured to its upper end, of a wheel or disc mounted on the wrist pin for attaching pump-actuating rods, substantially as set forth. 2nd. In apparatus for pumping oil wells, the combination, with a crank secured to the upper end of an upright shaft, of a wheel or disc loosely mounted on the wrist-pin, said wheel or disc being adapted to the attachment of pump actuating rods in any direction, substantially as set forth. 3rd. In an apparatus for pumping oil wells, the combination, with a crank secured to the upper end of an upright shaft,

of a wheel or disc loosely mounted on the wrist pin, and provided with a series of radial slots for the attachment of pump-actuating rods in any desired direction, substantially as set forth. 4th. A wheel or disc for attaching pump-actuating rods, having a series of radial slots formed in the upper side of its rim, adapted to receive the ends of pump-actuating rods from any desired direction, substantially as set forth.

No. 24,059. Steam Boiler.

(*Chaudière à Vapeur*.)

Jonathan C. Jopling, Sunderland, Eng., 17th May, 1886; 5 years.

Claim.—The circular or return tubes D₁, D₂ leading from the inner or combustion chamber A, in combination with openings D and E, the water-spaces B, B₁, with vertical tubes H, and the air tubes H₁, substantially as and for the purpose set forth.

No. 24,060. Pump. (Pompe.)

Luigi Nasi, Turin, Italy, 17th May, 1886, 5 years.

Claim.—1st. In a pump, the automatic air supplier consisting of the float l, arms h, e, arms d, valve seat a, in combination with the cylinder A having opening c, substantially as and for the purpose set forth. 2nd. In a pump, the cylinder A, with the piston A₁, in combination with tubes c, e, and receptacles B, B₁, substantially as and for the purpose set forth. 3rd. In a pump, the cylinder A, piston A₁, tubes c, e, receptacles B, B₁, valves D, outlet pipe D₁, inlet pipe D₂, float l, rods h, e, arms d, valve a, opening c, and bracket Z, all arranged substantially as and for the purpose set forth.

No. 24,061. Prepared Cereal and Mode of Production. (Céréral et Procédé de Production de Céréral Apprêté.)

John Solter and Henry R. Robbins, Jr., Baltimore, Md., U.S., 17th May, 1886, 5 years.

Claim.—1st. The heretofore described process of treating cereal in the form of hominy or samp, consisting, first in cooking the product in a moistened condition to a point at which it still retains the granular form, then passing the same in a moist condition through a grinding mill, and finally drying it, substantially as described. 2nd. The heretofore described product from indian corn consisting of separate grains in a stringy or coruhno form, and cooked and dried condition, substantially as described.

No. 24,062. Ejector. (Pompe à Vide.)

William T. Messinger, Cambridge, Mass., U.S., 17th May, 1886; 5 years.

Claim.—1st. In an ejector, the combination of the steam-nozzle, water inlet chamber and combining tube, with a vacuum chamber in the body of the ejector, communicating with the said combining tube at its delivery end, and an auxiliary vacuum chamber extended to the ejector, substantially as and for the purpose set forth. 2nd. In an ejector, the main casting threaded at both ends, and comprising a water inlet chamber and combining tube, combined with a steam nozzle, a steam inlet piece coupled upon one end of the main casting, and an outlet piece having a liquid delivery tube in line with the combining-tube, coupled to the other end of the main casting with which it forms a vacuum chamber communicating with the combining-tube, substantially as described. 3rd. In an ejector, the main casting having a water inlet chamber and combining and delivery tube integral therewith, combined with a diverging steam-nozzle connected with the said main casting at one side of the water-inlet chamber, an auxiliary delivery tube arranged in line with the delivery end of the combining-tube, but separated therefrom by a small space, and a tight vacuum chamber surrounding the delivery end of the combining tube and the receiving end of the auxiliary delivery tube, substantially as and for the purpose described.

No. 24,063. Horse Detaching Device for Vehicles. (Appareil de Dételage Instantané.)

Arthur L. Engelberg, Omaha, Neb., U.S., 17th May, 1886; 5 years.

Claim.—1st. In a horse-detaching device, the combination of hook-bolts attached to the breast-band or hames, socket pieces secured upon the ends of the vehicle-shafts, locking bolts connecting the said hook-bolts to the said socket pieces, and rollers journalled in brackets projecting downward from the said socket pieces, for protecting the shafts from injury when the locking-bolts are drawn back, substantially as and for the purpose set forth. 2nd. In a horse-detaching device, the combination of the hook-bolt b, attached to the breast-band or hames, and provided with a hole b₁, the socket pieces E, provided with the socket e and hole c₁, the locking-bolt F, the spring G, and a wire connected to the said locking-bolt for operating it from inside the vehicle, substantially as and for the purpose set forth. 3rd. In a horse-detaching device, the combination of the hook-bolt b, secured to the breast-band or hames, and provided with the hole b₁, the socket pieces E, provided with the socket e and hole c₁, the locking-bolt F having the collar f attached to it, the spring G, the yoke H provided with arms h, the slide I, the tube D, provided with holes d₁, and the guide d for the slide, and the wire J connected to the said slide, and provided with a handle, so that the locking-bolt may be operated from inside the vehicle, substantially as and for the purpose set forth.

No. 24,064. Converting Motion in Oil Pumping Apparatus. (Conversion du Mouvement dans les Appareils à Pomper l'Huile.)

George Allen, Franklin, Penn., U.S., 17th May, 1886; 5 years.

Claim.—1st. The combination, with an upright shaft, and means for revolving it, of a crank secured thereto, and pump-actuating

rods pivotally secured on the wrist-pin of the crank and leading in different directions therefrom, substantially as set forth. 2nd. The combination, with an upright shaft, and means for revolving it, of a crank secured to the upper end of the shaft, and pump-actuating rods pivotally secured on the wrist-pin of the crank and leading in any desired direction therefrom, for the purpose substantially as set forth. 3rd. The combination, with the upright shaft, provided with the bevel-gear, and a main driving shaft provided with a bevel-gear pinion adapted to engage said gear on the upright shaft, of a crank secured to the upper end of the upright shaft, and pump-actuating rods loosely secured on the wrist-pin of the crank and leading in different directions therefrom, substantially as set forth.

No. 24,065. Windmill. (Moulin à Vent.)

Samuel Albright and James W. Lillard, Nevada, Mo., U.S., 17th May, 1886; 5 years.

Claim.—1st. A windmill having two or more circumferential upper and lower runs or rings, a circumferential series of sails or slats pivotally supported between the outer top and bottom portions or rims, one or more series of sails or slats supported between the inner rims or rings, a central disk or hub spider-arms connecting said hub, and the slat bearing rims or rings, and bracing the latter, a hollow shaft or sleeve connecting the wheel and tower or building, a drive-shaft passing through said hollow shaft and connecting at its upper end with the wheel, and at its lower end with the mechanism or devices to be operated, a ring or disk loosely mounted upon said hollow shaft with capability of reciprocating thereon, radial arms or rods attached to said ring or disk, a series of bars connected to said rods, and having connection with the outer pivotal slats or sails, and a depending rod or lever connected to said ring or disk, for the purpose of reciprocating the same, and the radial arms attached thereto, and thereby opening and closing the outer row of slats or sails. 2nd. A windmill having two or more upper and lower circumferential rims or rings, a series of slats or sails supported between the external rims, a series of inner slats or sails supported between the inner rims or rings, a central disk or hub having radial arms extending therefrom to strengthen and brace said wheel, and hollow shaft connecting the wheel and tower or building, a drive-shaft extending through said hollow shaft and connecting with the wheel, and operative devices connected to the outer series of slats or sails, whereby the same may be opened or closed, substantially as set forth. 3rd. A windmill having a wheel provided with an outer series of pivotal slats or sails, and an inner row or rows of slats, rods or arms connected at their outer ends to, and extending inwardly from said outer slats or sails, and at their inner ends connected to a series of bars or beams, a disk having arms or rods radiating therefrom, and connecting with said bars or beams, and a depending sleeve, and means, substantially as described, connecting with said sleeve for reciprocating said disk, and closing and opening the outer sails. 4th. A windmill, having a wheel composed of two or more upper and lower circumferential rims or rings, an outer row of pivotal slats or sails, one or more inner rows of slats or sails, all having bearing between the top and bottom rims or rings, a central disk or hub, and radial arms extending from the upper and lower portions respectively of said disk or hub, and extending across the respective rims or rings for the purpose of bracing said wheel. 5th. A windmill, having a wheel provided with a central hollow disk or hub, an outer row of pivotal slats and an inner row of slats, means, substantially as described, for opening and closing said outer slats, a hollow shaft connecting the tower, building or other support, and the hub of the wheel, and a drive-shaft passing through said hollow shaft and connected at its upper end to said wheel hub. 6th. A windmill, having a wind-wheel provided with a central hollow hub, a hollow shaft connecting said wheel hub, and a tower or building supporting the wheel, and a drive-shaft passing through said hollow shaft and connected to the wheel hub, substantially as set forth. 7th. A windmill, having a wind-wheel provided with a hollow hub, a tower having a guide block or plate for the drive shaft, a hollow shaft connecting said tower and wheel, a drive-shaft passing through said hollow shaft, and connected to the wind-wheel, and having a vertically adjustable ring or collar thereon, as and for the purpose set forth.

No. 24,066. Incidence Window or Vault Light. (Fenêtre de Chute ou Jour de Voûte.)

Louis Melke, Baltimore, Md., U.S., 17th May, 1886, 5 years.

Claim.—1st. A lens of prismatic, or approximate prismatic form, having shoulders or offsets C, C₁, one at one side near the top, at the plane of incidence, and the other at the opposite side and below the first one, at the plane of reflection, as set forth. 2nd. The combination of a lens having shoulders or offsets C, C₁, one at one side near the top, at the plane of incidence, and the other at the opposite side and below the first one, at the plane of reflection, and a frame having holes, each of which is filled by a lens inserted in it like a plug, as set forth. 3rd. An incidence window comprising the frame B, provided with the described lenses placed in rows, and having slats f between said rows provided with suitable covers, as set forth.

No. 24,067. Device for Transmitting Motion in Oil Pumping Apparatus. (Appareil de Transmission au Mouvement dans les Machines à Pomper l'Huile.)

George Allen, Franklin, Penn., U.S., 17th May, 1886, 5 years.

Claim.—1st. A pump-driving shaft extending through the roof of a house, and having the pump-actuating rods attached thereto above the roof, substantially as set forth. 2nd. A supporting frame for the engine shaft and pump driving shaft, adapted at the same time to form a house frame, the end of the pump-driving shaft extending above the roof of the frame, for the purpose substantially as set forth. 3rd. The combination, with a supporting framework adapted to be covered by a roof and sliding, and an engine located within the framework, of an upright shaft adapted to be driven by the engine,

the said upright shaft extending outwardly through the roof, and a crank, or its equivalent, secured to the upper end of the shaft adapted actuate pump-operating rods, substantially as set forth. 4th. The combination, with a supporting frame for the engine shaft, and pump-driving shaft, adapted at the same time to form a house frame, the end of the pump-driving shaft extending above the roof of the frame, of pump-actuating rods connected with the shaft through the medium of an oscillatory wheel, substantially as set forth.

No. 24,068. Electric Battery.

(*Batterie Electrique.*)

Theodore L. Kautfer, Boston, Mass., U.S., 17th May, 1886, 5 years.

Claim.—1st. The combination, in a galvanic battery, of bichromate of soda with an acid, preferably sulphuric acid. 2nd. In a galvanic battery, a fluid, one element of which is bichromate of soda. 3rd. The combination, in a galvanic battery, of electrodes, a mixture of bichromate of soda, sulphuric acid and water, as set forth. 4th. In a galvanic battery, a depolarizing fluid, two elements of which are bichromate of soda and common salt. 5th. The combination, in a galvanic battery, of the electrodes, a mixture of bichromate of soda and salt, with an acid, preferably sulphuric acid, in an aqueous solution. 6th. A galvanic battery, consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda and an acid, preferably sulphuric acid, in aqueous solution. 7th. A galvanic battery, having a reservoir with a slotted partition, a mixture of bichromate of soda, sulphuric acid and water, the elements A, in a cell B, and the elements D, C, connected by a ring C, as set forth. 8th. In a galvanic battery, the ring C provided with arms, and clamping screws, in combination with the plates B, D, substantially as described. 9th. A galvanic battery, consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda, and common salt with an acid, preferably sulphuric acid, in aqueous solution. 10th. In a galvanic battery, an outer cell consisting of the outer box preferably made of an inflexible material, as wood, and an inner box preferably made of paraffine, or other similar material, substantially as described. 11th. In a galvanic battery, a porous cell provided with a grooved bottom, said groove being constructed to hold free mercury and the zinc element, and support the porous cell, substantially as described. 12th. A galvanic battery, consisting of an outer cell, an inner porous cup, a positive and negative electrode, bichromate of soda with an acid, preferably sulphuric acid, in aqueous solution, the said positive electrode being a cylinder of zinc, and having its inside surface coated with paraffine, as and for the purpose substantially as described. 13th. A galvanic battery, consisting of the outer cell, constructed by the combination of the outer box of an inflexible material, with an inner box of paraffine, the negative element, the porous cup, the positive element, and the charging liquid, arranged substantially as shown and described and for the purpose set forth.

No. 24,069. Fluid Pressure Motor.

(*Moteur à Pression de Fluide.*)

Graydon Poore, Charles Ingrey and Ernest Latham, London, Eng., 17th May, 1886, 5 years.

Claim.—1st. The combination of two pairs of cylinders mounted on shafts parallel to each other, with four pistons connected together in the form of a cross, and suitable supply and exhaust passages and valves. 2nd. The combination of cylinders a, b, brackets c, d, tubular shafts e, f, bearings g, h, pistons i, arms or rods J, parts k, l, valves m, n, rods o, p, eccentric q, r, stuffing boxes s, t, and passages I, Z. 3rd. Fluid pressure motor, constructed substantially as herein set forth.

No. 24,070. Shipping Cased Can.

(*Boite Metallique en Layette pour Exportation.*)

Henry J. Pratt, Portland, N.B., 17th May, 1886, 5 years.

Claim.—The combination of a metal can A with a shipping case of slotted wood work, substantially as and for the purposes hereinbefore set forth.

No. 24,071. Apparatus for Instantly Checking and Controlling Runaway and Vicious Horses.

(*Appareil pour Arrêter et Contrôler Instantanément les Chevaux Vieux et qui s'emportent.*)

William O. Walley, Altrincham, Eng., 17th May, 1886, 5 years.

Claim.—1st. The bands a, a, with rings b, b, in combination with the cords c, c, and the elastic bands e, e, substantially as and for the purpose set forth. 2nd. The bands a, a, with rings b, b, the cords c, c, and the elastic bands e, e, all combined and arranged substantially as and for the purpose set forth.

No. 24,072. Composition of Matter to be used as a Disinfectant.

(*Composition de Matières Désinfectante.*)

Alfred J. Shilton, Birmingham, Eng., 17th May, 1886, 5 years.

Claim.—In a disinfectant, the combination of ammonia, chloride, potassium, iodide, sodine and water, in the proportions and for the purpose set forth.

No. 24,073. Heel Nailing Machine.

(*Machine à Clouer les Talons.*)

Louis Côté, St. Hyacinthe, Que., 17th May, 1886, 5 years.

Claim.—1st. The combination, in a sole and heel nailing machine, of the standard and head D, G, constructed as described, with a follower block a operated by a treadle and auxiliary leverage, with said

treadle and auxiliary leverage, the whole substantially as described. 2nd. The combination, in a sole and heel nailing machine, of the standard and head D, G, constructed and arranged as described, with a follower block a operated by a treadle and auxiliary leverage, with said treadle and auxiliary leverage and counter-balance p, the whole substantially as described and set forth. 3rd. The combination of the standard and head D, G, follower block a, cross-head c, connecting rods d, treadle e, counter-balance p, lever f, shaft h, piston g, all constructed, arranged and operating substantially in the manner and for the purposes set forth and shown. 4th. The combination of the standard and head D, G, follower block a, cross-head c, connecting rods d, treadle e and counter-balance p, the whole constructed and arranged substantially as described. 5th. The combination of the standard and head D, G, follower block a, cross-head c, connecting rods d and treadle e, the whole constructed and arranged substantially as described.

No. 24,074. Hot Water Furnace.

(*Calorifère à Eau.*)

Edouard Bellavance, Montreal, Que., 17th May, 1886, 5 years.

Claim.—1st. In a sectional hot water furnace, the top section A provided with flues a and outlet J, in combination with the under sections A', reservoir H and casing Q, as above described and for the purposes set forth. 2nd. In a sectional hot water furnace, the sections A', leaving the shape shown in the annexed drawings, provided with the V-shaped portions C, partitions c and openings e, in combination with the top section A, reservoir H, casing Q, as above described and for the purposes set forth. 3rd. In a sectional hot water furnace, the reservoir H communicating with the upper sections A', A, provided with the inlet pipe K, door F and inlet pipe I, in combination with the upper sections A', A, and casing Q, as above described and for the purposes set forth. 4th. In a sectional hot water furnace, the combination of the sections A, A', with the reservoir H, casing Q, and bolts n, the whole as above described and for the purposes set forth.

No. 24,075. Blind, Shutter or Screen.

(*Persienne, Contrevent ou Ecran.*)

Benjamin D. Stevens and Theodore S. Peck, Burlington, Vt., U.S., 17th May, 1886, 5 years.

Claim.—1st. The combination of the window frame sliding blind sections provided, on one edge, with a guide rib and retractible holders and beads forming guides on which the blind sections move up and down, each pair of beads being set off to one side of the pair which adjoins it, as and for the purposes hereinbefore set forth. 2nd. Guide beads arranged relatively to one another in the manner indicated, in combination with blind sections sliding thereon, and constructed and arranged so each section shall be susceptible of disengagement from that one of its guide beads which project inwardly beyond the beads or beads adjoining it, substantially as and for the purposes hereinbefore set forth. 3rd. The blind-receiving frame and the sliding blind, having on one edge a ledge or shoulder, in combination with the retractible spring holder carried by the blind and provided with a projecting fin, between which and the said ledge or shoulder the guide-rib or the adjoining face of the frame is received, substantially as and for the purposes hereinbefore set forth. 4th. The retractible spring-holder having a projecting fin or fins, and also a face adapted to bear with yielding pressure against the guide-bead on the frame, in combination with the sliding blind and the blind-receiving frame, substantially as hereinbefore set forth. 5th. The combination, with the blind or slat frame, the toothed slide and the slats pivoted in said frame, of partial gears consisting of sheet-metal rings encircling the slat tenons and provided with teeth, bent so as to project laterally from the rings, and with means for securing them to the ends of the slats, substantially as and for the purposes set forth. 6th. The sheet metal ring adapted to encircle the slat tenon, and formed with teeth to engage the operating slide, and with a retaining prong by which it can be fastened to the end of the slat, substantially as and for the purposes set forth.

No. 24,076. Hame Fastener.

(*Courroies d'Atelles.*)

William R. Tilson, LeRoy, N.Y., U.S., 17th May, 1886, 5 years.

Claim.—1st. In a hame-fastener, the combination, with the levers A, B, C, jointed together, as described, of the independent link D arranged to engage at one end with the hook e, and at the other with the hame-loop, as shown and described and for the purpose specified. 2nd. In a hame-fastener, consisting of the jointed levers A, B, C, and hook D, the combination, with the levers A, B, of the pointed stud m, on the hook e lever A, and a curved spring n on the end of lever B, arranged to automatically lock together and be self-retaining when the levers are closed, as set forth.

No. 24,077. Potato Digger.

(*Arrache Patates.*)

Lemuel Melletto, Milford, and Charles A. Shaw, Boston, Mass., U.S., 17th May, 1886, 5 years.

Claim.—1st. In a potato-digger, the screen O disposed at the rear of the body A and adapted to be tilted, to discharge the potatoes to the right or left of the machine, substantially as described. 2nd. In a potato digger, the screen O pivoted to a suitable support at the rear of the body A and adapted to be tilted to the right or left, in combination with the chain-belts v, shafts H, Z, and mechanism for actuating said belts, substantially as set forth. 3rd. In a potato-digger, the chain-belts v, provided with the spurs or studs a, substantially as described. 4th. In a potato-digger, the combination of the shaft P, elastic bars d, f, shaft r, chain-belts c, orvolute gear R and mechanism for actuating said belts and gear, substantially as set forth. 5th. In a potato-digger, the counter-bar S, provided with the coulters t, z, in combination with the shoe T, mould-boards or wings k, k, chute W and beam B, substantially as described. 6th. In a potato-digger, the counter-bar S, provided with the coulters c, t, in combination with

the shoe T, mould-boards or wings *t*, *k*, chute W, beam B, chains *n*, *v*, and operative mechanism for said chains, substantially as set forth. 7th. In a potato-digger, the adjustable roller *z*, in combination with the arm F, body A, beam B, shoe T and a coulter or coulters, substantially as described. 8th. In a potato-digger, the axle C provided with the main gear N, in combination with the wheels D, D', shaft M, gears *r*, *s*, R, shafts P, H, Z, sprocket-wheels E, J, belt L and chains *o*, *v*, the wheels D and axle C being coupled by ratchet mechanism, substantially as set forth. 9th. In a potato-digger, the spring N, provided with the bend *u*, in combination with the bar F and screen O, substantially as described. 10th. In a potato-digger, the shaft H provided with the arm *n*, in combination with the chains *r* and operative mechanism, substantially as set forth.

No. 24,078, Force Pump. (Pompe foulante.)

George J. O'Doherty (Assignee of David S. McManus, Moncton, N.B., 17th May, 1886; 5 years.

Claim.—1st. In a force pump, the clamp F, having circumferential groove or recess, and the piston rod with head *g* made to fit into, and which is held firmly in place by the clamps F, substantially as shown and described. 2nd. In a force pump, the metal-hinged valves and angular valve-seats *a*, *b*, as shown and described. 3rd. In a force-pump, the combination of the cylinder A, hinged valves and angular valve seats *a*, *a*, and clamps F, and piston rod *g*, substantially and for the purpose above set forth.

No. 24,079, Water Heater. (Calorifère à Eau.)

Wardon King (Assignee of Archibald Spence), Montreal, Que., 17th May, 1886; 5 years.

Claim.—The combination of the sections E and O, provided with flanges U and H, openings F and P and diaphragms N, as described, also having faces I, with connection D, provided with diaphragms, the whole constructed and arranged substantially as described.

No. 24,080, Securing the Handles of Table Cutlery. (Manière d'Emmancher la Coutellerie.)

William T. Wheatley, Sheffield, Eng., 18th May, 1886; 5 years.

Claim.—The composition herein described, consisting of roll sulphur, calcined gypsum, carbonate of lime, colophony and powdered lead, carbonate, for the purposes and in the manner as set forth.

No. 24,081, Pen-Holder. (Porte-Crayon.)

Eugene C. Burrows, Brooklyn, N-Y, U.S., 18th May, 1886. 5 years.

Claim.—1st. As a new article of manufacture, a pen-holder, formed of horn, as set forth. 2nd. As a new article of manufacture, a pen-holder made of short sections of horn united together, as set forth. 3rd. A pen-holder, composed of sections of horn cut transversely from the tip of the horn united together, as shown.

No. 24,082, Harness Ring.

(Anneau de Harnais.)

John F. Smith, Lansing, Mich., U.S., 18th May, 1886. 5 years.

Claim.—1st. In a harness ring, the combination of an outer ring provided with a circular track or guideway, with a rotatable inner ring having attached oppositely-arranged loops or guides engaging said circular track or guideway, substantially as described. 2nd. In a harness ring, the combination of an outer ring comprising two hinged sections, each having a curved track or guideway, and provided with a fastening, with an inner ring composed of circular sections, each having at its extremities loops or guides engaging the track or guideway of the outer ring sections, substantially as described. 3rd. In a harness ring, the combination, with an outer ring, of an inner ring arranged to travel about the inner surface of said outer ring, said inner ring provided with rotatable spindles, substantially as described. 4th. The combination, with an outer ring constructed with a track, of an inner ring arranged to travel about the inner surface of said outer ring upon said track, said inner ring provided with rotatable spindles, substantially as described. 5th. The combination, with an outer ring constructed in two semicircular parts, of an inner ring constructed with two rotatable spindles, substantially as described. 6th. The combination, with an outer ring constructed of two parts hinged together, of an inner ring provided with rotatable spindles, and arranged to travel about the inner surface of said outer ring, said parts of the outer ring provided with means to connect their free ends when closed together, substantially as described. 7th. The combination, with an outer ring provided with means of connection to a harness, of an inner ring arranged to travel about the inner surface of said outer ring, said inner ring provided with rotatable spindles, substantially as described. 8th. The combination, with a ring, of rotatable spindles engaged therewith, substantially as and in the manner described. 9th. The combination, with an outer ring, of an inner ring movably connected therewith, said provided with a stem having a movable connection therewith, substantially as described.

No. 24,083, Mould for Casting Stench Traps.

(Moule pour Couler les Trappes des Egouts.)

Edwin H. Murdock, Cincinnati, Ohio, U.S., 18th May, 1886; 5 years.

Claim.—A stench-trap casting apparatus consisting of the mould A, provided with matrices C, D, E and channels F, G, and the cover B provided with matrices C', D', E', channel F' G', and gates *c*, *d*, *e*, in combination with the sectional core-bars I, J, K, L, R, S, W, X, Z, the reduced portions *k*, *r*, *z* of said bars being furnished with lateral stamps P, O, T, Y, and the bars I, R, X having cams L, U, V, provided to their outer ends, for the purpose of retracting said bars after the metal has been cast around their reduced portions, as herein described.

No. 24,084, Telegraphy. (Télégraphie.)

Thomas A. Edison, Menlo Park, N.J., U.S., 18th May, 1886. 5 years.

Claim.—1st. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a battery, a circuit controller, a condenser shunting the circuit controller, and line connections translating the battery impulses into momentary and sharply defined waves upon the line, substantially as set forth. 2nd. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a battery, a circuit controller closing circuit at both front and back points, and line connections translating the battery impulses into momentary and sharply defined waves upon the line, substantially as set forth. 3rd. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a battery, a key controlled sounder-closing circuit at both front and back points, and line connections translating the battery impulses into momentary and sharply defined waves upon the line, substantially as set forth. 4th. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a battery, a circuit controller closing circuit at both back and front points, means for weakening the battery current at one point, and line connections for translating the battery impulses into momentary and sharply defined waves upon the line, substantially as set forth. 5th. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a battery, a circuit controller closing circuit at both back and front points, a signal-weakening resistance in circuit with only one of such points, and line connections, translating the battery impulses into momentary and sharply defined waves upon the line, substantially as set forth. 6th. In phonoplex telegraphs, the combination, with the line, and a phonoplex receiver, of a phonoplex transmitter comprising a magnet in line, and a shunt around this magnet including a local battery and a circuit controller, substantially as set forth. 7th. In phonoplex telegraphs, the combination, with the magnet in line, of the shunt, including local battery, and the circuit controller in shunt closing circuit at both front and back points substantially as and for the purpose set forth. 8th. In phonoplex telegraphs, the combination, with the magnet in line, of the shunt, including local battery, the circuit controller in shunt closing circuit at both front and back points, and a resistance in circuit with one of such points, substantially as and for the purpose set forth. 9th. In phonoplex telegraphs, the combination, with the magnet in line, of the shunt including local battery, a current controller in shunt, and a condenser shunting points of circuit controller, substantially as and for the purpose set forth. 10th. In phonoplex telegraphs, the combination, with the line and a Morse phonoplex transmitter, of a phonoplex receiver consisting of a diaphragm sounder having a loose weight or hopper carried by the diaphragm, substantially as set forth. 11th. In phonoplex telegraphs, the combination, with the line, and a Morse phonoplex transmitter, of a phonoplex receiver consisting of a magneto electric diaphragm sounder with coils directly in the line, and having a loose weight or hopper carrier by its diaphragm, substantially as set forth. 12th. The combination, with a line, and two or more sets of regular Morse instruments, composed each of a signalling key and relay, a high resistance shunting each key and relay, and a line battery for operating these instruments, of two or more sets of phonoplex Morse instruments, each set composed of a transmitter provided with a separate battery, and throwing momentary and sharply defined waves upon the line, and a diaphragm sounder responding to such momentary and sharply defined waves, substantially as set forth.

No. 24,085, Car - Coupling.

(Attelage de Chars.)

Thomas L. McKeen, Easton, (co-inventor with John W. Gainer, Weisport,) Penn., U.S., 18th May, 1886. 5 years.

Claim.—1st. In a car-coupling, the combination of a draw-head having longitudinal recesses in its bottom, and having a transverse bearing through the rear ends of the said recesses, a shaft rocking in the said bearing, and having a forwardly projecting arm at one end, and having cam-plates secured at their rear ends to it, and resting in the recesses, a transverse operating shaft upon the end of the car, a bracket having its edge parallel with the shaft at a distance from the same, a bar resting upon the edge of the bracket, and having its inner end pivoted to the arm projecting from the operating shaft, and a connecting rod pivoted to the outer end of the said bar, and having its lower end pivoted to the end of the arm upon the cam-shaft, as and for the purpose shown and set forth. 2nd. In a car-coupling, the combination of a draw-head having longitudinal recesses in its bottom, and a transverse bearing intersecting the rear ends of the said recesses, a shaft journalled in the said bearing, and having means for rocking it, and cam-plates secured at their inner ends upon the shaft, and having their upper rear corners cut off obliquely to bear against the rear ends of the recesses, as and for the purpose shown and set forth. 3rd. In a car-coupling, the combination of a draw-head having shaft journalled and sliding in transverse bearings upon the front of the car, and having a forwardly projecting arm connected to the coupling-pin, with a bracket projecting from the front of the car under the shaft for supporting the arm of the shaft when raised, as and for the purpose shown and set forth. 4th. In a car-coupling, the combination of a draw-head having longitudinal recesses in its bottom, and having ribs at the inner sides of the recesses, and having registering perforations or bearings in the sides of the draw-head, and in the ribs at the rear ends of the recesses, a shaft journalled in the said bearings, and having square portions in the recesses, and having means for rocking it in the bearings, and cam-plates secured with square perforations in their rear ends upon the shaft, and resting in the recesses, as and for the purpose shown and set forth. 5th. In a car-coupling, the combination of a draw-head having a recess formed with vertical perforations in its top and bottom for the pin, and having an upwardly inclined extension in its top, forming a downwardly projecting lip between it and the upper perforation, and formed with

a forwardly and upwardly projecting lip at its rear and lower end, with a block or latch having an upwardly projecting extension formed with a recess, and having its lower edge resting inside of the lower lip in the recess, and having a forwardly projecting lip at its upper end for supporting the pin, and an inclined forward face formed with a rounded recess for the reception of the end of a link, as and for the purpose shown and set forth.

No. 24,086. Apparatus for Distributing Oil on Troubled Seas. (*Appareil pour Distribuer de l'Huile sur les Eaux Agitées.*)

Francis D. Montague, Milford, William Robinson and Abraham Firth, Boston, Mass., U.S., 18th May, 1886; 5 years.

Claim.—1st. In an apparatus for distributing oil over the surface of water, a vessel combined with a force pump, supply pipe therefor, a flexible discharge tube leading therefrom, and a floating distributor, substantially as described, connected with the end of the discharge tube, as set forth. 2nd. The combination, with a vessel, of a force pump, supply pipe therefor, a discharge tube leading therefrom to and from the end of the jib-boom, and a distributor attached to the end of the tube, to distribute the oil forced through the tube and into the distributor upon the surface of the water, substantially as described. 3rd. The combination, with a vessel, of a force pump, supply pipe therefor, the discharge tube and distributor, the latter supplying a hollow shell having perforated sides and closed ends, substantially as described. 4th. The force pump *e*, and supply pipe therefor, flexible discharge tube *d* passing to and around a gird on the end of the jib-boom, the distributor *f*, and cord *m*, substantially as described. 5th. The floating distributor *f*, for receiving oil and distributing it over the surface of the water, the same consisting of a hollow shell having perforated sides and closed ends, and a keel, the forward end being pointed, all as shown and described. 6th. In an apparatus for distributing oil over the surface of water, a force pump, supply pipe therefor, and a floating distributor, substantially as described, connected with the end of the discharge pipe, as set forth. 7th. The combination, substantially as described, of a force pump, a discharge tube leading from said force pump, and a floating oil distributor attached to the end of said tube, said distributor consisting essentially of two independent chambers, one perforated and adapted to receive oil from said tube and to gradually distribute the same over the surface of the water, and the other chamber air-tight and preferably filled only with air. 8th. The floating oil distributor, consisting essentially of a perforated receiving and distributing chamber, and an air-tight chamber, said chambers being separated from each other by a diaphragm or partition, substantially as and for the purpose described.

No. 24,087. Metal Worker's Punch and Shears. (*Poinçon et Cisailles d'Ouvrier en Métal.*)

Isaac W. Brown, (assignee of Gilbert McDonald), Red Oak, Iowa, U.S., 18th May, 1886; 5 years.

Claim.—1st. In a metal worker's punch and shears, the combination of the frame having forwardly-projecting arms at its upper end, and having the upper edge of one of the arms formed into the rigid blade of a pair of shears, a main lever pivoted at its middle in the frame, a hand-lever pivoted at its end between the ends of the arms, arms pivoted to the forward end of the main lever and to near the fulcrum of the hand-lever, a lever pivoted between the upper ends of the frame, and formed at its forward end with a shear-blade, operating against the rigid shear-blade, and arms pivoted to the rear end of the said lever and to the rear end of the main lever, as and for the purpose shown and set forth. 2nd. In a metal worker's punch and shears, the combination of a frame having horizontal lips near the forward edges of its side pieces, and having horizontal sleeves near the rear edges of the same, a vertically sliding punch, means for operating the punch, and nails having their doubled ends bearing against the outer side of the punch, and their arms passing between the lips and through the sleeves, and having nuts at their rear ends, as and for the purpose shown and set forth. 3rd. In a metal worker's punch and shears, the combination of a frame having arms projecting forward from the upper ends of its side pieces, a main lever pivoted between the side pieces, and having a rounded recess immediately forward of its fulcrum, and formed with downwardly-projecting lips at the ends of the recess, a hand-lever pivoted between the forward ends of the arms of the frame, arms pivoted to the forward end of the main lever, and to the hand-lever near its fulcrum, an arm having a rounded head pivoted between the lips in the recess of the main lever, and a punch having a rounded recess provided with lips for the pivotal connecting of the arm, as and for the purpose shown and set forth. 4th. In a metal worker's punch and shears, a punch-block sliding under the punch in the frame, and having a series of different-sized perforations, and a longitudinal slot at its rear end, a stripper having a slot for the passage of the punch at its forward end, and a longitudinal slot at its rear end, an upright bolt projecting into the slots of the punch-block and stripper, and a nut upon the bolt bearing against the stripper, combined to operate as shown and set forth.

No. 24,088. Weighing Apparatus. (*Pont Régulateur.*)

Loren R. Witherell, Davenport, Iowa, U.S., 19th May, 1886; 5 years.

Claim.—1st. A weighing apparatus, consisting of a swinging arc formed of one piece of metal, suspended by its vertical arm from a knife edged loop, and having an adjustable counterpoise *d* arranged upon said vertical arm, and a graduated scale upon the face of the arc, in combination with the index rod and tray, as shown and described, and for the purposes set forth. 2nd. In a weighing apparatus, the arm *c*, having a series of perforations to admit of the adjustment of the counterpoise *d*, arranged as shown, in combination with the graduated scale index rod, loop *b* and hook or scale pan, all constructed as shown and specified and for the purposes set forth. 3rd. In a weighing apparatus, a swinging arc provided with a counter-

poise, constructed as described, said arc having upon one or both faces an engraved, printed or stamped scale graduated to show different rates of portage or values, or weights, according to different systems, in combination with the index rod and tray, substantially as shown and specified and for the purposes stated.

No. 24,089. Manufacture of Barrel Bodies from Pulp, etc. (*Fabrication des Barils avec de la Pâte à Papier, etc.*)

Samuel M. Hotchkiss, Hartford, Ct., U.S., 19th May, 1886; 5 years.

Claim.—The process, art or method of forming and drying articles made from pulp, which consists in forming the article and expressing the water to a great degree upon a core in one machine, conveying it on such core to another machine in such other machine, drying it under heat and pressure, substantially as described and for the purposes set forth.

No. 24,090. Manufacture of Machines for Drying and Pressing Pulp Barrel Bodies, etc. (*Fabrication de Machines à Faire sécher et à Presser les Barils en Papier.*)

Samuel M. Hotchkiss, Hartford, Ct., U.S., 19th May, 1886, 5 years.

Claim.—1st. The combination of the core chambered by heat ducts, and the movable external side compressors chambered by heat ducts, substantially as and for the purpose set forth. 2nd. The external side compressors chambered by heat ducts, and moved by hydraulic rams taking their water-supply from one common source, substantially as described and for the purpose set forth.

No. 24,091. Circular Knitting Machine. (*Machine à Tricot Circulaire.*)

George Davidson and William W. Clay, Paris, Ont., 19th May, 1886, 5 years.

Claim.—1st. The cylinder arms *A*, having the grooves *a* made in them, in combination with the detachable needle-ring *C*, secured in position by the screws *B* and holding-pins *b*, substantially as and for the purpose specified. 2nd. The needle-ring *C* secured to the cylinder arms *A*, and having a groove formed on its outside to receive the wide rib *d* formed on the needle-carrier *D*, the grooves *e* made in the said needle-carrier *D* to receive the shanks *f* of the needles, in combination with the detachable holding plates *E* secured by the screw-bolts *F*, substantially as and for the purpose specified. 3rd. The needle-carrier *D*, made in sections and having vertical grooves *e* formed in it, and a projecting shoulder or rib *i* made near its base, in combination with the holding-plates *E* secured by the screw-bolts *F*, and having grooves cut on their inner side to receive the shoulder *i*, substantially as and for the purpose specified. 4th. A knitting machine needle having a shank *f*, with a bent end *g* and a bevelled shoulder *j*, in combination with a needle-carrier *D* having a slot *c* to receive the shank *f*, and a notch *h* to receive the end *g*, substantially as and for the purpose specified.

No. 24,092. Machine for Drying Ladies' Hair. (*Machine pour Faire Sécher les Cheveux des Femmes.*)

Stewart H. Vint, Hamilton, Ont., 19th May, 1886; 5 years.

Claim.—1st. In a ladies hair drying machine, the combination of a frame *A* with netting *B*, and the lamps *c* provided with shields *E*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in a ladies' hair drying machine, of a frame *A*, netting *B*, lamps *c*, with shields *D*, and a telescope stand *F* provided with thumb-screws *G* and *H*, substantially as and for the purpose hereinbefore set forth.

No. 24,093. Gimlet Pointed Rolled Wood Screws. (*Vis à Bois Cylindrée avec Pointe en Vrille.*)

Hayward A. Harvey, Orange, N.J., U.S., 19th May, 1886, 5 years.

Claim.—As a new article of manufacture, a rolled gimlet-pointed screw, the thread of which is composed of two ridges of metal extending outwardly from, and spirally around the body and point of the screw, and folded together, their united apices forming the apex of the finished screw thread.

No. 24,094. Method of Manufacturing Rolled Wood Screws. (*Mode de Fabrication des Vis à Bois Cylindrées.*)

Hayward A. Harvey, Orange, N.J., U.S., 19th May, 1886, 5 years.

Claim.—The herein described method of forming the threads upon the body and joint of rolled gimlet-jointed screws by means of a die or dies, provided with parallel inclined ribs acting to form the convolutions of the thread upon the joint and body simultaneously, to wit: first, impressing a shallow V-shaped spiral groove upon the body and conical point of the blank, and thereby throwing out from the blank two parallel ridges of metal extending spirally around the body and point between the convolutions of the spiral groove, and then by increasing the pressure of the die upon the blank deepening the spiral groove and enlarging the diameter of the parallel ridges and folding them together by transverse compression, then by subjecting the blank to the action of the rolling die, the inclined parallel ribs of which are truncated, transforming the V-shaped spiral groove into a flat-bottomed spiral groove, displacing the metal from the bases of the convolutions of the thread, and causing it to flow outward from the body of the blank, and thus closely uniting the apices of the parallel ridges and thereby forming the sharp-edged thread of the finished screw.

No. 24,095. Telephonic Transmitter.

(*Transmetteur Téléphonique.*)

William C. Turbull, Baltimore, Md., U.S., 19th May, 1886; 15 years.

Claim.—1st. The combination of the diaphragm, the electrode carried thereby, the pivoted pendent carbon electrode or electrodes, which make contact with the electrode of the diaphragm, and a carbon pivot or bearing, on which said carbon electrodes are mounted. 2nd. The combination, in a telephonic transmitter, of a swinging hinged or pivoted carbon electrode, and a carbon pin or bearing on which it is hinged. 3rd. The combination of the diaphragm, a series of pivoted pendent swinging electrodes formed of cylindrical pieces of carbon, which are bored or perforated at their ends to form their bearings, the carbon rod on which said electrodes are pivoted, and an opposing electrode upon which they rest by gravity. 4th. The combination of the diaphragm, an elongated electrode bar having a curved or circular face secured upon the diaphragm, and a series of pivoted freely swinging pendent electrodes having curved or circular contact faces, and a pivot-bar supported upon the diaphragm which passes through the upper ends of said electrodes and on which they have their pivotal bearing, said pendent electrodes resting by gravity upon the transverse electrode secured on the diaphragm, substantially as and for the purpose set forth. 5th. The combination of the diaphragm, the series of pivoted pendent gravity electrodes carried by the diaphragm, the opposite electrode or bar secured upon the face of the diaphragm, and adjusting mechanism for simultaneously changing the position of the pivots of all of the pendent electrodes, whereby the force of contact between the opposing electrodes is varied. 6th. The combination of the diaphragm, the pivoted gravity electrode carried by the diaphragm, the opposite electrode secured upon the diaphragm, and adjusting mechanism for changing the position of the pivot of the gravity electrode, whereby the force of contact between the opposing electrodes is varied. 7th. The combination of a rectangular diaphragm, a support in which the diaphragm is rigidly connected at its upper edge only, and is left free to vibrate at its other edges, one or more pendent gravity electrodes pivoted upon a support carried by the diaphragm near its upper edge, and an opposite electrode or bar upon which the pendent electrodes rest secured upon the diaphragm below the support in which the pendent electrodes are mounted. 8th. The combination of the transmitting diaphragm secured at the top and bottom and free at its side edges, the transverse carbon electrode carried thereby, and a series of pendent carbon electrodes resting by gravity on the electrode carried by the diaphragm, substantially as and for the purpose set forth. 9th. The combination of the diaphragm confined at the top and bottom and free at its side edges, the carbon electrode carried thereby and arranged transversely across its face, and a series of carbon electrodes which rest by gravity on said transverse carbon electrode. 10th. The combination of the diaphragm, a cylindrical carbon electrode arranged transversely across the diaphragm, and pendent cylindrical carbon electrodes which rest by gravity on the electrode on the diaphragm.

No. 24,096. Construction of Gun Carriages.

(*Fabrication des Affûts de Canons.*)

Henry C. E. Malet, Brighton, Eng., 19th May, 1886; 5 years.

Claim.—1st. The cylinder *n*, substantially as and for the purpose set forth. 2nd. The shield *p*, *p'*, substantially as and for the purpose set forth. 3rd. In field gun carriages, the recoil device, constructed and applied as described, and for the purpose set forth. 4th. In a field gun carriage, the shield plates *p*, *p'*, constructed as described and for the purpose set forth. 5th. In a field gun carriage, the combination and arrangement of the parts heretofore described, all operating and working substantially as and for the purpose set forth.

No. 24,097. Electric Alarm.

(*Avertisseur Electrique.*)

Carlos M. Barnes, Enosburgh, Vt., U.S., 20th May, 1886; 5 years.

Claim.—1st. In an alarm of the character described, the combination of the following instrumentalities, to wit: a clock mechanism, a disk actuated by the clock mechanism and adapted to rotate in unison with the hour hand of the clock, a switch-board, a battery, an alarm bell, a battery wire connecting the battery with the switch-board, a bell wire connecting switch-board with the alarm bell, a return wire connecting the alarm bell directly with the battery, a switch lever adapted to connect said battery wire and bell wire, and a pin adapted to pass through a hole in the disk and engage said lever, said disk being provided with numbers and holes arranged radially in rows around its centre, the number corresponding with the number of the room in which the bell is located, and the rows corresponding with the hours on the dial of the clock, substantially as described. 2nd. In an alarm mechanism of the character described, the disk *E* provided with numbers and holes arranged radially in rows around its centre, and with the pin *J*, in combination with a clock mechanism, means for connecting the disk with the clock mechanism, a switch-board, switch-lever, battery alarm bell and suitable conducting wires for connecting the battery, switch, lever and bell, substantially as set forth. 3rd. In an alarm mechanism of the character described, the rotating disk *E* provided with the rows of numbers and holes *k* and pin *J*, in combination with the gears *d*, *e*, pinions *r*, shaft *H*, clock *B*, lever *g*, wires *4*, *5* and *9*, bell *O* and battery *N*, substantially as described. 4th. In an alarm mechanism of the character described, the rotating disk *E*, provided with holes disposed between the rows *k* for receiving the pin *J*, to enable the bell *O* to be rung on the half or quarter hours, when desired, substantially as set forth. 5th. In an alarm mechanism, of the character described, the lever *g* provided with the spring *h*, in combination with the screw *s*, wires *4* and *5*, pin *J* and disk *E*, substantially as described. 6th. In an alarm mechanism of the character described, the combination of the clock *B*, switch *C*, battery *N*, bell *O*, shaft *H*, suitable gearing for connecting said shaft with the switch and clock wires 1, 2, 3, 4, wires 5, 6, 7, 8 and wires 9, 10, 11, 12, substantially as set forth.

No. 24,098. Fire-Escape. (*Sauveteur d'Incendie.*)

Patrik Fogarty, Milwaukee, Wis., U.S., 20th May, 1886; 5 years.

Claim.—A fire-escape, consisting of the telescopically jointed bars *a*, *b*, held by recesses formed in the window casing and adapted to be adjusted to windows of different widths, arms *D*, *D'*, attached to said bars, and sheaves *d*, *d'*, supported by said arms, hoisting ropes carried by said sheaves and an elevator car, all substantially as and for the purposes set forth.

No. 24,099. Harrow Cultivator.

(*Herre-Cultivateur*)

John Evans, Cayuga, Ont., 20th May, 1886; 5 years.

Claim.—The tooth-holder *D*, having an opening 2, lug 3 provided with bolt hole 4, v-shell portion 5 and elongation 6 provided with a channel 9, in combination with the zig-zag bar *A*, cross bar *B*, tooth *C* and bolts *E*, *F*, as set forth.

No. 24,100. Car Axle Lubricator.

(*Boite à Graisse.*)

Lewis F. Morrison and François A. Bertrand, St. Hyacinthe, Que., 20th May, 1886; 5 years.

Claim.—1st. In an axle or journal lubricator, the combination, with a journal box, of a plate or support, pivoted arms carried by said plate and extending on opposite sides of the journal, and wheels carried by said arms and bearing on the journal, said wheels having grooves in one or both faces, substantially as shown and described. 2nd. In an axle or journal lubricator, the combination, with the journal box, of a plate or support, arms pivoted thereto and wheels carried by said arms and projecting through the base of the plate, as and for the purpose set forth. 3rd. In an axle or journal lubricator, the combination, with a journal box, of a plate or support, guides or ways thereon, blocks sliding in said slides and roller-bearing arms pivoted to said blocks, substantially as shown. 4th. In an axle or journal lubricator, the combination, with a journal box, of a plate or support, guides or ways thereon, blocks sliding in said guides, arms pivoted to said blocks, rollers carried by said arms, and springs connecting the arms and the plate to hold the rollers against the journal. 5th. In a lubricating device, substantially as described and shown, the combination of plate *A* and roller-supporting arms *G* made in two parts, adapted to turn one in relation to the other. 6th. The roller supporting arms *G*, made in two parts, adapted to rotate one upon the other, in combination with a spring, as *J*, to hold said parts in their different positions, substantially as described and shown. 7th. The herein described lubricating device for application to and use in a journal box, consisting of plate *A*, provided with studs *B*, *B'*, sliding blocks *D*, arms *G* pivoted to said blocks and provided with rollers *H*, *H'*, and springs *M* connecting the arms *G*, *G'*, and the studs *B*, *B'*.

No. 24,101. Automatic Lubricator for Steam Engines. (*Graisseur Automatique pour Machines à Vapeur.*)

Charles Couse, Belleville, N.J., U.S., 20th May, 1886; 5 years.

Claim.—1st. The method herein described of passing the oil from the lubricating cup to mingle with the steam in the engine where the oil is required to be used, which consists in flushing the oil from the cup by water of condensation as derived from the steam, substantially as and for the purposes specified. 2nd. The combination, with the oil receptacle *A*, and the tube *E* arranged to connect with an upper combined steam passage and oil discharge duct, and provided with a lower valve for the admission of oil, of the elevated condenser *B* having a stand or condensed water overflow extension within it leading to said combined steam passage, and oil discharge duct and a duct or ducts extending from said condenser down into the oil receptacle *A*, essentially as described. 3rd. The combination of the oil receptacle *A*, the condenser *B* fitted with a stand or overflow extension *C*, the duct *d*, the transparent tube *E* with its adjustable needle-valve *G*, *f*, and the duct, or ducts *c* *D*, substantially as shown and described.

No. 24,102. Harness Hame Tug. (*Maneu.*)

Christian C. Schwaner, Winterset, Iowa, U.S., 20th May, 1886; 5 years.

Claim.—1st. The improved hame-tug section composed of a body having perforations, to admit the passage of rivets to fasten a clip thereto, and a cross-bar and loop at its rear end, for the purposes stated. 2nd. The improved hame tug section, composed of a flanged, arched and perforated body *A*, a cross-bar *B* and a loop *C*, for the purposes specified. 3rd. In a hame tug, the combination of a metal section having perforations in its front end, and a loop and cross-bar at its rear end, with a detachable clip, and a main and rear portion hinged to the cross-bar of the front section, as and for the purposes stated. 4th. The combination of a hame tug section *A*, *B*, *C*, a clip *D* and a cover *H*, with a body *C* having a series of loops, and a trace-fastening device at its rear end, substantially as shown and described for the purposes specified.

No. 24,103. Lifting Implement.

(*Appareil pour Lever*)

François Thérien, St. Eustache, Que., 20th May, 1886; 5 years.

Claim.—The combination of the hook *B* having the shank *b* and guide loop *e*, connecting bars *c*, lever *C*, lifting collar *D* and holding collar *F*, with the lifting rod *E* having a screw thread cut on it, the whole arranged as shown and suspended in a tripod stand, substantially as and for the purpose herein set forth.

No. 24,104. Self Acting Car-Coupler.*(Atelage de Chars Automatique)*

Thomas Davies, Toronto, Ont., 20th May, 1886, 5 years.

Claim.—1st. The coupling bar H, having wings F applied to its end or ends and actuated by a spring G, in combination with the bars B having bevelled edges and fitted into holes b behind the notches a, substantially as and for the purpose specified. 2nd. The coupling bar II, having wings F applied to its end or ends and actuated by a spring G, in combination with the bars B having bevelled edges c and fitted into holes b behind the notches a, the arm L connected at one end to the holes a and at its other end to the horizontal bar I having crank-handles K formed on its ends, the rod N connecting the arm L to the pivoted lever O, the whole being arranged substantially as and for the purpose specified. 3rd. The bars B, having bevelled edges c and fitted into the holes b behind the notches a, in combination with the plates C and D connecting the bars B together, so that the latter shall work in conjunction with each other.

No. 24,105. Rope Cutter. *(Couteur de Câble.)*

John R. Gallinger, Osakis, Minn., U.S., 20th May, 1886, 5 years.

Claim.—1st. A rope cutter, having a square edge standard A secured to a stationary or semi-stationary base or object, and a knife-edged blade B held to said standard adjustably, and forming therewith a diverging or angular jaw. 2nd. The combination of the standard A, square inner edge a, straight shoulder a', straight slot a'', parallel to said shoulder, flat foot A' adapted to be secured to a base, the blade B, bevelled cutting edge b, thumbscrew C and pin D. 3rd. The combination of the standard A, foot A', straight slot a'', edge a'' parallel to slot a'', 4th. The combination, with the standard A, foot A', slot a'', edge a' parallel to slot a'', blade B, pin D, thumbscrew C and pin D. 5th. The combination of the blade B, cutting edge b, eye corresponding to slot a'', and pin corresponding to shoulder a', all substantially as shown and described and for the purpose set forth.

No. 24,106. Tricycle. *(Tricycle.)*

Joseph Richard, Montreal, Que., 20th May, 1886, 5 years.

Claim.—In a tricycle, the friction ratchets c, e, e', g, h, j, u, v, actuated by the radial arms I, J, K, L, which are connected with the rods i, j, k, l, and by which the motion of the peddles is transmitted to the pulleys, M, a, b and m in turn, and then to the axle F and tricycle wheels B, B, in combination with the front wheel D and frame E, as above described and for the purposes set forth.

No. 24,107. Draft Equalizer.*(Régulateur du Tirage.)*

Edward C. Curroy, Chicago, Ill., U.S., 20th May, 1886, 5 years.

Claim.—1st. In a draft equalizer, the combination of the metallic casing, the interior spiral spring and the ovenor, all constructed and arranged substantially as and for the purpose described. 2nd. In a draft equalizer, the slotted bottom plate, the casing B provided with a longitudinal slot in its upper face, the spiral spring and the ovenor, all arranged and combined substantially as and for the purposes described. 3rd. In a shaft equalizer, the casing composed of the parts A and B, provided with the upper and lower longitudinal slots, the spiral spring, the head plate and the ovenor, all arranged and combined substantially as and for the purpose set forth. 4th. In a draft equalizer the metallic casing provided with the upper and lower longitudinal slots, the spiral spring, the grooved head plate provided with a shank projecting within the spring, the bearing block having convex or rounded face to fit the groove in the head block, and trunions to fit the slots in the casing and the ovenor, all combined and arranged substantially as and for the purpose set forth. 5th. The combination of the ovenor plate secured to the front face of the ovenor, and having openings in its ends, with the bearing block provided with projecting studs adapted to fit said openings in the piece, substantially as and for the purpose described. 6th. The hinged rear section, in combination with the lower plate and upper casing, substantially as and for the purpose described. 7th. The latch I, provided with the trunions l, l', in combination with the lower plate and the hinged rear section, substantially as and for the purpose described. 8th. The spring loop K, in combination with the latch I, and hinged rear section, substantially as and for the purpose described.

No. 24,108. Burglar Alarm System.*(Avertisseur à Sonnerie.)*

Philip K. Stern, Toronto, Ont., 20th May, 1886, 5 years.

Claim.—1st. In a burglar alarm system, the combination, with an electro magnet, of two armatures responsive to different strengths of current, an alarm bell or signal, and an annunciator or annunciators operated by, or through the medium of said armatures. 2nd. In a burglar alarm system, the combination, with a main closed circuit including a resistance medium at the guarded structure, and a local circuit at the alarm station, of an electro magnet having two armatures responsive to different strengths of current therein, an alarm bell or signal and annunciators operated by or through the movement of said armatures. 3rd. In a burglar alarm system, the combination, with a main closed circuit including a resistance coil at the premises, and a local alarm circuit at the station, of an electro magnet, two armatures responsive to different strengths of current therein, annunciators controlled by said armatures and adapted to throw into operation the local alarm circuit upon the movement of said armatures, substantially as described. 4th. The herein-described burglar alarm system, consisting of a main closed circuit including a resistance medium at the guarded premises, and a local alarm circuit at the station, an electro magnet having two armatures responsive to different strengths of current therein, and annunciator drops controlled by said armatures, the combination and arrangement being

such that upon the movements of the armatures they and the annunciator drops each close the local circuit, for the purpose specified. 5th. In a burglar alarm system, the combination, with a lock at the premises to be protected, of a switch mechanism operated by the lock mechanism, for the purpose specified. 6th. In a burglar alarm system, the combination, with a permutation lock, of an electrical shunt switch mechanism, substantially as described, and operated by the bolt and tumblers of the lock, for the purpose specified. 7th. In a burglar alarm system, the combination, with a lock, of a test circuit and alarm or signal, and a switch mechanism therefor, operated by the lock mechanism, substantially as set forth. 8th. In a burglar alarm system, the combination, with a lock of a switch mechanism, a test circuit and alarm or signal, and a switch mechanism therefor, both of said switch mechanisms being operated by the lock mechanism, substantially as described. 9th. In a burglar alarm system, the combination, with an electrically protected lock and a resistance coil, of a shunt switch mechanism, a test circuit and alarm or signal and a switch mechanism therefor, both of said switch mechanisms being operated by the lock mechanism, substantially as and for the purpose set forth. 10th. In a burglar alarm system, the combination, with a main circuit, of a local test circuit and alarm or signal at the guarded structure for the purpose specified. 11th. In a burglar alarm system, the combination, with a main circuit extending from alarm station to guarded structure, of a line wire disposed in loops at the point to be guarded, connected to a resistance medium and returned over said loops, being knotted, braided or entangled therewith, substantially in the manner and for the purpose specified. 12th. In a burglar alarm system evolving the use of a main circuit extending from alarm station to guarded structure, and means whereby an alarm is given in response to a variation or difference in flow of current, a line wire disposed in loops at the point to be guarded, running thence to a resistance coil or medium and back to said loops, and knotted, braided or entangled with the wire so looped, for the purpose set forth. 13th. In a burglar alarm system, a screen composed of meshes of wire forming part of an electrical circuit, the positive and negative conductors being knotted or entangled together, substantially as and for the purpose specified. 14th. In a burglar alarm system, a combined switch and fastener, in combination with a window or screen, substantially as and for the purpose described.

No. 24,109. Extension Ice Skate.*(Patin à Glace à Extension.)*

Cudwallader M. Raymond, Boston, Mass., U.S., 20th May, 1886, 5 years.

Claim.—1st. The combination, with an extensible foot-plate, provided with suitable hangers, of a slotted and perforated skate-blade, as shown and described. 2nd. The blade K, provided with suitable holes and a slot, as and for the purpose specified. 3rd. The hangers P, Q, secured to the underside of the toe and heel plates of an extensible foot-piece, and adapted for attachment to a skate blade K, as described.

No. 24,110. Process of Making Felt Boots,*etc. (Procédé de Fabrication des Bottes etc., en Feutre.)*

William H. Hough, Thorold, Ont., 20th May, 1886, 5 years.

Claim.—The process of unting and felting the two colored mixtures, so as to form a felt with one side a light color, or to have a dark colored exterior with a light colored lining.

No. 24,111. Millstone Picking Hammer.*(Marteau à Piquer les Meules.)*

Jules T. Gauthier, Joliette, Que., 20th May, 1886, 5 years.

Réclame.—1^o Dans un marteau à piquer, l'étui denté C, en combinaison avec une lame trempée a, tel que décrit pour les fins mentionnées. 2^o Dans un marteau à piquer l'étui denté b, ayant une vis de compression c, tel que décrit pour les fins mentionnées. 3^o Dans un marteau à piquer, l'étui denté b, ayant le morceau d'arrêt d, tel que décrit pour les fins mentionnées.

No. 24,112. Combined Ice House and Cooling Chamber.*(Glacière et Chambre Frigorifique Combinées.)*

John Alexander, Bloomington, Ind., U.S., 21st May, 1886, 5 years.

Claim.—1st. In an ice-house having a wall between the ice-chamber and the cooling-chamber, with a cold-air flue at the bottom of the wall, and a warm-air flue at the top, the combination of a slanting ceiling from the top of the cooling-chamber's door to a point near the separating-wall, a little below the warm-air flue, from which point the ceiling extends in a vertical direction till it meets an incline ceiling extending into the cold-air chamber, substantially as and for the purpose specified. 2nd. In an ice-house having a wall between the ice-chamber and the cooling-chamber, with a cold-air flue at the bottom of the wall, and a warm-air flue at the top, the combination of a slanting ceiling from the top of the cooling-chamber's door to a point near the separating-wall, a little below the warm-air flue, from which point the ceiling extends in a vertical direction till it meets an inclined ceiling extending into the air-chamber provided with a ventilating flue, substantially as and for the purpose specified.

No. 24,113. Inhaler. *(Inhalateur.)*

John B. Butcher, Halifax, N.S., 11st May, 1886, 5 years.

Claim.—1st. In an inhaler, provided with a small receptacle fixed in the cover, a mixing tube bent in its upper part to correspond to the mouth of the small receptacle, as shown and described for the purpose set forth. 2nd. In the cover of an inhaler provided with a mixing tube bent to return at its upper end, a small receptacle fixed

from which the fumes of a volatile fluid is made to pass through the fluid in the larger vessel through the means of an inhaling tube, as shown and described for the purpose set forth. 3rd. In an inhaler provided with an inhaling tube, a cover in which is fixed a vessel holding a volatile fluid, a mixing tube with a return bend, and an airtight rim made to fit any glass vessel in which the second liquid is contained.

No. 24,114. Type-Writer. (Graphotype.)

Daniel E. Kempster and James H. Currier, Boston, Mass., U.S., 21st May, 1886; 5 years.

Claim.—1st. In a type-writer, the pivoted frame, the pivoted type plate and the flat paper carrier, all combined to operate substantially as described. 2nd. In a type-writer, in combination, the pivoted frame, the bail-shaped pawls thereon, the two ratchet-toothed spools 13, 14 carrying the ink ribbon engaged by said pawls, and the springs for holding them or one of them out of engagement with its ratchet-toothed spool, all substantially as set forth. 3rd. In a type-writer, the type-wheel composed of a single piece having a central axis, and round holes drilled radially in its periphery, combined with type placed and held in said holes, all substantially as described. 4th. In a type-writer, the combination, substantially as hereinbefore set forth, of the flat paper carrier, the gong and striker attached to the underside thereof, the guide rod A', the collar E', adjustably mounted thereon, and the arm E attached to said collar, and constructed and arranged, substantially as described, to reach beneath the said carrier and operate the gong. 5th. In a type-writer, in combination, the guide A2, the flat paper carrier, the scale thereon, the pointer attached to the said paper carrier and guided by the said guide, the top plate and the scale thereon, all substantially as shown and described. 6th. In a type-writer, the combination of the pivoted frame or lever so constructed as to be operated by its outer or free end, the type wheel mounted upon said frame or lever between its pivot centers and outer or free end, the axis of rotation of said type-wheel being at right angles to the axial centers of the pivots of the frame or lever, and a movable paper carrier beneath said frame, for the purpose set forth. 7th. In a type-writer, the pivoted top plate, combined with the ink ribbon holder and its spools, and spindles to hold the spools, the said holder being adjustably and detachably secured to the said top plate, to enable it to be adjusted thereon, or to be quickly removed therefrom as may be desired, substantially as described. 8th. The type-wheel, the pivoted frame upon which it is mounted, a pawl carried by said frame, and a pivoted top plate, and the feed wheel mounted upon the latter pivoted plate, combined with the paper carrier, its attached rack, and the guide for the said paper carrier, the latter being fed along laterally by the said feed wheel engaging with said rack, the longitudinal axis of the pivots of the said frame, and top plate being parallel with the line being printed, to operate substantially as described. 9th. In a type-writer, the pivoted frame G having the axial centers of its pivots parallel to the line being printed, and printed with an index plate and notched flange below it, both of which are situated at the extreme or free end of said frame farthest from its pivot centres, a type-wheel mounted on said frame between said index plate and the frame pivots, and having its axis of rotation at right angles to the axial centers of the pivots of the said frame, and provided with an operating lever, and the mechanism, substantially as described, whereby a rotary and a vibrating movement may be given to said type-wheel, combined and arranged, substantially as described for the purposes set forth. 10th. In a type-writer, the type-wheel composed of one piece having a central axis, and type-receiving recesses or pockets bored or drilled radially in its periphery, combined with type placed therein and held squarely by set screws arranged in the wheel at right angles to the type, all substantially as and for the purpose specified. 11th. The paper carrier provided with the toothed rack and the top plate, and the feed wheel F, combined with the pivoted frame, its connected pawl and with a pin to co-operate with the said pawl and enable it to engage with, and operate the said wheel a distance equal to one or two teeth as desired, substantially as described. 12th. In a type-writer, in combination, the pivoted frame G, the ribbon-feeding pawls, the paper carrier feeding pawls, the pivoted top plate, the ink-ribbon holder, and its spools and spindles, the feed wheel, the paper carrier, the rack and feed roll thereon, the carrier guide rod, the type-wheel, the type-wheel gear and sector, and the operating lever and index plate, all substantially as shown and described. 13th. In a type-writer, the friction adjusting ink-ribbon holder consisting of the plate L, provided with two sets of ears 8, 9, screw-threaded spindles screwed into the ears 8 and having shoulders 12, combined with two spools placed on the said spindles between the said pairs of ears, and adapted to be frictionally held from revolving by turning the screw-spindles and thus clamping said spools between the ears, as set forth. 14th. The pivoted frame or lever, the feed wheel, the rack and paper carriage, combined with its feeding and retaining pawls, each pawl being provided with short arms, whereby a pressure on the knob 26 removes both said pawls from the teeth of said wheel, substantially as described. 15th. The clock spring, in combination with the feed wheel F, for automatically returning the paper carrier to the commencement of a line, as set forth. 16th. The bell crank lever G3, co-operating with the ratchet D' on the paper-feeding roll, for the purpose set forth.

No. 24,115. Improvements in Lamps for Burning Petroleum and Light Oils, parts of which are also applicable to Gas Burners. (Perfectionnements dans les Lampes pour Brûler le Pétrole et les Huiles Légères, dont Certaines parties sont aussi applicables aux Becs à Gaz.)

Louis Sépulchre, Lidze, Belgium, 21st May, 1886; 5 years.

Claim.—1st. In petroleum lamps, with circular wick or with several flat wicks, and in circular gas burners, the use, in combination with a button or disc E, of a special chamber F, the lateral sides of which facing the flame are perforated for the purpose of spreading, after

heating upon the entire height of the flame, air taken from the central current, as described. 2nd. In petroleum lamps, with round burners and in circular gas burners, the use of a button E, concave downward for the purpose of sending more efficiently upon the burning gases, the air which strikes this obstacle and to permit a more abundant passage of air, as described. 3rd. Lamp chimneys with bulge from A to C and tapered from C to D, as heretofore described and shown in Fig. 13 of the accompanying drawings.

No. 24,116. Corn Planter.

(*Semoir à Blé d'Inde.*)

Joseph C. Pelletier, Windsor, Ont., 21st May, 1886; 5 years.

Claim.—1st. In a corn planter, the furrow closers (I) adjustably secured to the standards F1, F2, of the furrow openers F, substantially as described. 2nd. In a corn-planter, substantially as described, the combination, with each furrow-opener, of the adjustably-weighted lever H, I, and means for raising and lowering the same with its attached furrow-opener, substantially as set forth. 3rd. In a corn planter, substantially as described, the combination, with the driving gear C and dropper slide L, of the pinion C1, wrists r, arm N, a means for raising and lowering the same, the bar P, the connections r, s, t, the lever Q and spring R, as and for the purpose set forth. 4th. The detent lever S, operated by the windlass E, in combination with the pinion C1, substantially as and for the purpose set forth.

No. 24,117. Sanitary or Toilet Paper.

(*Papier pour Lieux d'aisance.*)

James T. Hoyt, New York, N.Y., U.S., 21st May, 1886; 5 years.

Claim.—1st. A suspension device for packages of toilet paper and the like, consisting of an arm adapted to extend through the package and a hook or suspension device on one end of the arm, substantially as shown and described, whereby the sheets are kept in a compact state while allowed to be stripped one by one from the package without disturbing the remaining sheets. 2nd. The combination, with a package of toilet paper, of a suspension device consisting of a plate A, provided with one or more hooks or tongues, and an arm or arms projecting therefrom adapted to extend through the paper and embrace the same, substantially as shown and described. 3rd. The combination, with a package of sanitary or toilet paper, of a suspension device consisting of a plate A provided with one or more hooks, a hanger extending over the package, and an arm or wire, or equivalent means, adapted to extend through the package, which is secured at one end to the plate, and at its other end to the hanger, substantially as shown and described.

No. 24,118. Cabinet for Sanitary or Toilet Paper. (Serre-Papier pour Lieux d'Aisance.)

James T. Hoyt, New York, N.Y., U.S., 21st May, 1886; 5 years.

Claim.—1st. The combination, substantially as shown and described, of a cabinet or case, the friction roller D, the pressure plate F and the spring G, or its equivalents, for pressing the lower ends of the sheets of paper against the roller. 2nd. In a cabinet or case, the combination, with the swinging plate F suspended from near the top of said case and extending down to near the bottom thereof, of the spring G bearing against said swinging plate, so as to force the package of sheets in front of the swinging plate against the separation device, substantially as shown and described. 3rd. A cabinet for toilet paper, provided with a door C1 for inserting the paper, a mouth H through which the sheets are discharged, in combination with a roller D for separating the sheets one by one from the package, and a pressing device for forcing the sheets against the roller, substantially as shown and described. 4th. The combination of a cabinet or case for containing a suspended package of sheets of paper, a friction roller for detaching the sheets from the package, and a pressure plate for preserving the package toward the roller, substantially as shown and described. 5th. The combination of a cabinet or case for containing a suspended package of sheets of paper, a friction roller for detaching the sheets from the package, a pressure plate for pressing the package toward the roller, and a suspension device for, substantially as shown and described.

No. 24,119. Beer Forcing Pump.

(*Pompe Foulante à Bière.*)

Frank E. Snyder, Massillon, Ohio, U.S., 21st May, 1886; 5 years.

Claim.—1st. The combination, with a vessel and a discharge pipe connected therewith, of an air chamber closed at its lower end and located partly within said vessel and terminating above the same, a pipe located outside of the vessel and connecting it with the air chamber, a stop-cock for closing communication between the vessel and air-chamber, and an air-pump, the barrel of which extends downwardly into the air-chamber, substantially as set forth. 2nd. The combination, with a vessel having a discharge pipe and an air-chamber located within said vessel and extending upwardly above the same, and a pipe connecting the air-chamber and vessel provided with a stop-cock, of a pump barrel removably secured within said chamber, and a hollow piston-rod through which air is forced into the interior of the chamber, substantially as set forth.

No. 24,120. Iron for Glossing Shirt Besoms, etc. (Fer à Repasser les Devants de Chemises, etc.)

Felix E. DeLisle, Ottawa, Ont., and Hubert R. Ives, Montreal, Que., 21st May, 1886; 5 years.

Claim.—1st. In a polishing iron, the semi-cylinder F provided with attachments to secure the handle E, E, E thereon, as shown and described. 2nd. In a polishing iron, the handle E, E, E fitted to the semi-cylinder F, as shown and described. 3rd. In a polishing iron, the semi-cylinder F having each end of the handle E, E, E

fitted to each of its sides, as shown. 4th. The process of polishing and glossing stretched fabrics by acting on them with a cylindrical or semi-cylindrical iron moving in a straight line in the direction of its periphery on the fabrics operated upon, as shown. 5th. As a new article of manufacture, a glossing iron of semi-cylindrical form having a handle attached to the flat part, as shown and described for the purpose set forth.

No. 24,121. Sheep Shears. (*Forces.*)

Overson S. Price and Samuel P. Scott (Assignees of Andrew J. Lytle) Hillsboro Ohio, U.S., 21st May, 1886, 5 years.

Claim.—1st. In a sheep-shears, the combination, with the arms bowed and jointed at their rear ends, and provided with a coiled spreading spring, of the blades constructed with guarding reinforcing ribs and shanks, whereby by means of said shanks they are removably secured to the arms, all substantially as specified. 2nd. A sheep-shears, having blades constructed with guiding and reinforcing ribs, and tapering shanks shear arms bowed and jointed at their rear ends, a coiled spreading spring, a screw-threaded guide pin, a sliding collar and an adjustable thumb-screw thereon, all constructed and adapted to operate substantially as and for the purpose described.

No. 24,122. Watch and Clock.

(*Montre et Horloge.*)

William H. Scott, Colburg, Charles S. Ellis, Toronto, and John D. Colquhoun, Wales, Ont., 21st May, 1886; 5 years.

Claim.—1st. A dial, having twelve openings and placed over a dial-ring having two sets of figures marked on its face, one set indicating from one to twelve, the other set from thirteen to twenty-four, in combination with mechanism arranged to adjust the dial-ring so as to alternately expose, through the openings in the dial, the two sets of figures, substantially as and for the purpose specified. 2nd. A dial-ring, having twelve openings and placed over a dial having two sets of figures marked on its face, one set indicating from one to twelve, the other set from thirteen to twenty-four, in combination with mechanism arranged to adjust the dial so as to alternately expose, through the openings in the dial-ring the two sets of figures, substantially as and for the purpose specified. 3rd. A dial-ring B, having two sets of figures marked on its surface, and an elongated notch *b* made in its edge, the pivoted dogs E and F extending into the said notch, and provided each with a spring H, as specified, in combination with the eccentric cam G deriving motion from the works of the watch, substantially as and for the purpose specified. 4th. A dial-ring B, having two sets of figures marked on its surface, as specified, and an elongated notch *b* made in its edge, the pivoted dogs E and F extending into the said notch and provided each with a spring H, as specified, in combination with the eccentric cam G connected to the toothed wheel I, which derives motion from the pin *i* connected to the canon pinion J, substantially as and for the purpose specified.

No. 24,123. Carpet Lining and Packing for Bottles, etc. (*Doublure et Enveloppe en Tapis pour Bouteilles, etc.*)

Jacob M. Baker and William A. Simmons, Boston, Mass., U.S., 21st May, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a carpet lining and packing for bottles, etc., composed of chemical wood fibre, or analogous material, having an embossed surface, substantially as described. 2nd. A carpet lining and packing for bottles, etc., composed of a sheet of chemical wood fibre or analogous material, in combination with a sheet of felt or analogous material, the two being united by an interposed layer of cement and then embossed, substantially as described.

No. 24,124. Egg Packing Case.

(*Boîte à Embaquer les Oeufs.*)

James Emery, Charles A. Maedonald and William Murphy, Saint John, N.B., 21st May, 1886; 5 years.

Claim.—In egg packing cases, the fastening formed by the combination of the bevelled tongues *t, i*, in the cover C, with the wire springs *f, f*, protected by the end cleets, cover cleets and lugs, substantially as and for the purposes set forth.

No. 24,125. Watch and Clock.

(*Montre et Horloge.*)

John D. Colquhoun, Wales, Charles S. Ellis, Toronto, and William H. Scott, Colburg, Ont., 21st May, 1886; 5 years.

Claim.—A dial-ring, having two sets of figures, one set indicating from one to twelve, the other set from thirteen to twenty-four, in combination with a dial having twelve openings made in it, substantially as and for the purpose specified.

No. 24,126. Bed Bottom. (*Sommier de Lit.*)

Dallas Knowlton, Brantford, Ont., 22nd May, 1886; 5 years.

Claim.—1st. In a bed-bottom, the web D and chains G, in combination with spiral spring hooks C, substantially as and for the purposes hereinbefore set forth. 2nd. In a bed bottom, the combination of chains A, with web D and sides of frame B, substantially as and for the purposes hereinbefore set forth.

No. 24,127. Hat Sweat. (*Buvard de Chapeau.*)

Joseph K. Upham, New York, N.Y., U.S., 22nd May, 1886; 5 years.

Claim.—1st. In combination with a substantially unyielding sweat band, a gore of elastic webbing having its upper edge longer than its lower edge, and stretched to and uniting the ends of said sweat-band, substantially as and for the purpose described. 2nd. In combination

with a sweat-band and a supplementary sweat-band A², an adjustable band C secured to the latter, and having its ends passing by each other and connected, substantially as and for the purpose described. 3rd. The combination of a sweat-band, and an adjustable band C surrounding the sweat-band, and having its ends connected by means, as set forth, with means for securing said band C to the sweat-band, substantially as and for the purpose described. 4th. The combination of a sweat-band A, having its ends united by elastic webbing with a supplementary sweat-band A², and an adjustable band C having its ends clasped together and secured to said band A², substantially as and for the purpose described.

No. 24,128. Brick. (*Brique.*)

James A. McAllister, Fredericton, N.B., 22nd May, 1886. 5 years.

Claim.—1st. An improved building brick consisting of the rectangular blocks A, A, united by a neck B, substantially as and for the purpose hereinbefore set forth. 2nd. An improved building brick consisting of the blocks A, A, united by a neck B and formed with the indentations C, C, substantially as and for the purpose hereinbefore set forth.

No. 24,129. Machine for Ditching.

(*Machine pour Fossoyer.*)

John Hyatt, Dover, Ont., 22nd May, 1886; 5 years.

Claim.—The combination of the long mould board C, with the adjustable cross-pieces F, and bed iron B, substantially as and for the purpose hereinbefore set forth.

No. 24,130. Grinding Mill.

(*Moulin à Moudre.*)

Frank Boall, Decatur, Ill., U.S., 22nd May, 1886. 5 years.

Claim.—1st. In a roller mill, a pair of opposing rolls having differential rotation in opposite directions, the slow-roll having longitudinal furrows formed each of an approximately tangential surface longitudinally corrugated, and an abrupt surface approximately radial with the roll, and the fast-roll having longitudinal furrows formed each of an approximately tangential surface, and an abrupt surface approximately radial with the roll, the furrows in the fast-roll approximating in width and depth to one-half the width and depth of the furrows in the slow-roll, the radial surfaces of the furrows in the slow roll being presented in the direction of the rotation of said roll, and the radial surfaces of the furrows of the fast roll being presented in the direction opposed to the rotation of said roll. 2nd. In a roller mill, a pair of opposing rolls having differential rotation in opposite direction, each roll having longitudinal furrows formed each of an approximately tangential surface longitudinally corrugated, and an abrupt surface approximately radial with its roll, the radial surfaces of the furrows of the slow roll being presented in the direction of the rotation of said roll, and the radial surfaces of the furrows of the fast roll being presented in the direction opposed to the rotation of said roll.

No. 24,131. Lamp Burner. (*Bec de Lampe.*)

Henry E. Shaffer, Rochester, N.Y., U.S., 22nd May, 1886; 5 years.

Claim.—1st. In a lamp burner, the combination, with the burner, of two or more separate cones and two or more wick tubes being curved so as to bring the upper ends centrally under the cones, and the lower ends within the burner collar that screws into the top of the lamp, as set forth. 2nd. In a lamp burner, the combination, with the burner, of two or more separate cones and two or more wick tubes, the wick tubes being curved to bring their upper ends centrally under the cones, and their lower ends within the compass of the burner collar that screws into the top of the lamp, and said wick tubes being arranged with their flat sides towards the center of the burner and towards each other, as hereinbefore set forth. 3rd. In a lamp burner, the combination of the burner having two sets of openings in its outer shell, a perforated division plate which divides the burner into two chambers between the openings in its sides, two or more curved wick tubes in the burner, two or more separate cones covering the wick tubes, and a cone plate provided with perforations between the cones, as and for the purpose specified.

No. 24,132. Steam Radiator.

(*Stendeur de Vapeur.*)

Robert W. King, Georgetown, Ont., 22nd May, 1886; 5 years.

Claim.—1st. A double tube radiator, the outer tube of each pair independently jointed to one plate of an independent head, and the inner tube of each pair independently jointed to the opposite plate of the said independent head, substantially as and for the purpose specified. 2nd. A double tube radiator the outer tube A of each pair being connected by a joint to the lower plate *a* of a curved metal head C, and the inner tube B of each pair connected by a joint to the upper plate *a* of the said curved metal head C, the sides *f* of the said head being a sufficient distance from the joints and of metal sufficiently thin to permit a slight spring, substantially as and for the purpose specified. 3rd. In a double tube radiator, the outer tube A of each pair being connected to one side of the steam head by a joint, in combination with the inner tube connected to the opposite side of the steam head by an independent joint.

No. 24,133. Combined Harrow and Pulverizer. (*Herse et Brise-Motte Combins.*)

Benjamin Wilt, Thomas L. Hicks and Edward Mac Harg, Philadelphia, Pa., U.S., 22nd May, 1886; 5 years.

Claim.—1st. The combination of the two inclined sets of cutters D, I, the two sets of teeth H, and the two toothed rollers G, with the front roller C, substantially as shown. 2nd. The combination of the elevated front roller, the two sets of cutters, the two toothed rollers G, the two sets of teeth, and the rake, substantially as set forth.

No. 24,134. Machine for Shaving Ice.*(Machine à Doler la Glace.)*

Frank K. Way and William T. Parker, Springfield, Ohio, U.S., 22d May, 1886; 5 years.

Claim.—1st. In an ice machine, the combination, with the revolving cylinder, and the outer casing provided with a chamber in which said cylinder is adapted to revolve, of a curved conduit or reservoir opening into said chamber, substantially as set forth. 2nd. The combination, with the outer casing, of the revolving cylinder, the curved conduit or reservoir and the hinged follower in said reservoir, substantially as specified. 3rd. The combination, with the vertical revolving cylinder open at the bottom, and provided with suitable cutting knives in the periphery thereof, of an adjustable receptacle holding device under said cylinder, substantially as and for the purpose set forth. 4th. The combination, with the outer casing having a chamber therein in which the cylinder is adapted to revolve, the bevel gear journaled in the top of said casing, and secured to said casing, and provided with a bearing for a hand wheel, and a bevel gear adapted to engage with the bevel gear on the cylinder, substantially as described. 5th. The combination, with the outer casing having a vertical revolving cylinder therein, a reservoir or conduit opening into the side of said cylinder, and a receptacle holding device under said cylinder, of the vertically reciprocating piston adapted to be forced down through said cylinder, and means for automatically returning said piston to its normal position, substantially as specified. 6th. The combination, with the outer casing provided with a chamber for the revolving cylinder, the curved conduit opening into said chamber, the hinged cover adapted to close said conduit, and the follower pivoted to said cover, substantially as and for the purpose set forth. 7th. The combination, with the outer casing, the revolving cylinder therein, suitable gearing for driving said cylinder, and a piston adapted to be forced through said cylinder, of the semi-spherical cap secured to the top of the said casing and adapted to enclose said gearing, said cap being provided with an opening in the top thereof through which the piston stem is adapted to project, substantially as set forth. 8th. The combination, with the outer casing, the revolving cylinder therein, the curved conduit leading to said cylinder, the hinged cover having the follower attached thereto for said conduit, the reciprocating piston in said cylinder, and the adjustable receptacle holding device below said cylinder, substantially as and for the purpose specified. 9th. The combination, with the vertical ice cutting cylinder, of a stationary plate under said cylinder, a supporting plate under said stationary plate, and an elastic connection between said stationary and said supporting plate, substantially as described. 10th. The combination, with the vertically revolving cylinder having suitable cutting knives therein, of an adjustable supporting device under said cylinder, and means for expelling the cuttings or shaving from said cylinder into the receptacle, substantially as set forth. 11th. The combination, with the vertical revolving cylinder provided with the knives thereon, and the deflecting strips over said knives, of the reciprocating piston notched out to fit over said deflecting strips, and adapted to be forced through said cylinder, substantially as set forth. 12th. The combination, with the outer casing having the chamber A₁ and the curved conduit or reservoir A₂, of the vertically revolving cylinder provided with a series of cutting knives in said chamber, the said chamber being open at the bottom and adapted to form a bearing for the lower end of said cylinder which is also open, substantially as set forth. 13th. The combination, with the outer casing provided with a chamber in which the open edges revolving cutting cylinder is journaled, and a curved conduit or reservoir opening into said chamber, of a hand wheel and gears for driving said cylinder, a cap over said gears, a cover for said conduit or reservoir hinged to said cap, and a follower in said conduit hinged to said cover, substantially as specified. 14th. The combination, with the revolving cutting cylinder and the plate provided with an opening therein under said cylinder, of the suspended plate F₁ having the sleeves thereon, springs in said sleeves and connecting rods extending through said springs and attached to said plate, substantially as set forth. 15th. The combination, with the vertical revolving cylinder, of the conduit leading thereto, and a follower in said conduit, said follower being adapted to fit said conduit, and being curved to conform to said cylinder, substantially as and for the purpose set forth.

No. 24,135. Self-Emptying Hopper Waggon for Ballasting on Railways.*(Wagon Trémie pour la Distribution Automatique du Gravier sur les Voies de Fer.)*

Thomas Rodger, Thomas Black and Robert Crawford, Dunedin, N.Z., 22d May, 1886; 5 years.

Claim.—My improved self-emptying hopper waggons, for ballasting on railways, in which a hopper is fitted into an ordinary railway waggon, such hopper having a door A₁ at the lowest part of one of its inclined faces, with or without the doors A₂ at the top of said sides, substantially as and for the purposes herein described and set forth.

No. 24,136. Plough for Spreading and Trimming Ballast on Railways. *(Charrue pour Etendre le Gravier sur les Voies de Fer.)*

Thomas Rodger, Thomas Black and Robert Crawford, Dunedin, N.Z., 22d May, 1886; 5 years.

Claim.—1st. In a spreader plough, a plough having its lower cutting edge shaped to suit the section to which the ballast requires to be finished, in combination with a railway vehicle, substantially as described. 2nd. In combination with a spreader plough A, a mould board A₁, links or stems B, D, screw nut C, screw C₁, hand wheel C₂, lock nut D and key D₁, all substantially as described and for the purposes set forth.

No. 24,137. Steam Engine. *(Machine à Vapeur.)*

Jerome Wheelock, Worcester, Mass., U.S., 25th May, 1886; 5 years.

Claim.—1st. The combination, at each end of a steam engine cylinder, of a semi-rotating steam valve and sliding exhaust valve, of the gridiron or other type. 2nd. The mode of operating combined semi-rotating steam valve and sliding exhaust valve, by means of a rock shaft coupled to said exhaust valves by discs or arms and hubs, whereby said two valves may be operatively coupled to one eccentric rod, and the exhaust valve permitted to rest in closed position during a portion of the longitudinal movement of said rod. 3rd. The construction of a tapered skeletonized plug containing a valve seat, a sliding valve and a spring, and having heads which afford bearings for a rock shaft by which the valve is operated. 4th. The combination, substantially as hereinbefore described, of a steam slide valve, and a rock shaft having a crank thereon, a link coupling said crank to the valve, an arm on said rock shaft, and a dash not weight coupled to said arm, whereby said valve may be closed by said weight before the latter enters its choking space, and may also be permitted to rest during the cushioned full of said weight. 5th. The combination, substantially as hereinbefore described, of a slide valve for exhaust, and a slide steam valve co-operating with one cylinder port, a rock shaft for each valve coupled thereto by a crank and a link, and an eccentric rod and internal connections by which both valves are operated.

No. 24,138. Chimney Protector.*(Capuchon de Cheminée.)*

James H. Bailey, Leaning Creek, W. Va., U.S., 25th May, 1886; 5 years.

Claim.—1st. The combination of the pivoted rod G, the horizontal hood O pivoted therein and comprising a sheet of metal having one end deflected or bent down, and the bar L pivoted on the rod G and having one end attached to the deflected end of the hood, and carrying the vane at its opposite end, whereby the deflected end of the hood is always presented to the wind, substantially as described. 2nd. The combination of the band A, the bars E and F secured to the said band and intersecting each other, the pivot rod attached to the band F, and the clamping plate H on the said pivot rod, and bearing on the bars E and F, to secure them together and to the rod, substantially as described.

No. 24,139. Continuous Nail Wire.*(Fer à Clou Continue.)*

Thaddeus Fowler, Shelton, Ct., U.S., 25th May, 1886; 5 years.

Claim.—1st. A clout nail, having a swaged head and a compressed point, substantially as set forth. 2nd. A continuous length of clout nails formed from wire, each nail having a swaged head and a compressed point joined to the head of the subsequent nail, substantially as shown and described. 3rd. An improved article of manufacture, a series of clout nails, as described, whose heads and joints are joined in regular sequence by a flexible and readily severable connection, substantially as set forth.

No. 24,140. Die for Making Nail Wire.*(Etampe pour faire le Clou de Fil de Fer.)*

Thaddeus Fowler, Shelton, Ct., U.S., 25th May, 1886; 5 years.

Claim.—1st. In a set of dies, the combination, of a vertically aligned pair of gripping dies adapted to hold the blank wire securely between them, and a pair of tapered pointing dies also vertically aligned and adapted to grasp and point the wire, both pairs of vertically aligned dies adapted to have a movement longitudinal of the wire, and by lengthwise pressure to swage a head on said wire between their vertically abutting surfaces, substantially as set forth. 2nd. A set of dies, of the character described, composed of a pair of gripping dies and a pair of tapered pointing dies, all four arranged to have both a vertical and a longitudinal movement, the gripping dies adapted to grasp and the pointing dies adapted to point and to grasp the wire, and the two pairs of vertically aligned dies adapted to swage up a head upon the blank wire, substantially as specified. 3rd. The combination, with the pair of gripping dies, arranged as described, of a pair of taper grooved pointing dies adapted by compression to point the wire, both pairs adapted to have a movement vertically to allow for the feeding of the wire, and a movement longitudinally, whereby the head is swaged up between their abutting surfaces, substantially as described. 4th. The combination of the gripping dies A, A, having grooves E, and the pointing dies B, B, having tapered grooves F, whose outer and inner ends are respectively larger and smaller than the blank wire, both pairs adapted to grasp and conjointly by longitudinal pressure to head the wire between them, substantially as and for the purpose set forth. 5th. The method, herein described, of forming wire nails, the same consisting in feeding the wire between a pair of grasping and a pair of pointing dies, then closing both pairs upon the wire, and finally forcing both pairs or dies so closed toward each other and lengthwise of the wire, whereby a head is swaged up therefrom between their abutting surfaces, substantially as set forth.

No. 24,141. Stopper for Bottles, etc.*(Bouchon pour Bouteilles, etc.)*

Adelbert R. Thayer, Cheboygan, Mich., U.S., 25th May, 1886; 5 years.

Claim.—1st. A stopper, provided with one or more kerfs extending from the bottom toward the top, leaving an external flexible shell interior core and solid, substantially as described. 2nd. A stopper, provided with one or more kerfs extending from the bottom toward the top, leaving an external flexible shell, interior core and solid top, said shell tapered toward the lower end, the construction being such that the stopper is greater in diameter at the top than at the bottom, substantially as described. 3rd. A stopper, provided with one or

more kerfs extending from the bottom toward the top, leaving an external flexible shell, an interior core and a solid top, said stopper being compressed at its bottom end to more or less close the lower end of the kerf, substantially as shown and described for the purposes set forth. 4th. A stopper, provided with one or more kerfs extending from the bottom toward the top, leaving an interior flexible shell and interior core, said shell constructed with an exterior rib toward one end, substantially as described.

No. 24,142. Paper Pail. (*Seau en Papier.*)

George M. Reid, London, Ont., 25th May, 1886; 5 years.

Claim.—1st. The paper pail body *d, d*, having bottom *b*, provided with a flaring flange *f*, as shown and described. 2nd. The paper pail body *d, d*, provided with bottom *b*, having flaring flange *f* and cover *a*, as shown and described for the purpose set forth.

No. 24,143. Vibrating Engine.

(*Machin Oscillante.*)

William E. Crist, New York, N.Y., U.S., 25th May, 1886; 5 years.

Claim.—1st. A compound vibrating piston engine, constructed with two sector-shaped working chambers of unequal piston area, pistons vibrating therein about a common axis, a communicating channel adapted and arranged to conduct the steam or air expelled from one chamber by the forward movement of its piston into the second chamber against its moving piston, substantially in the manner and for the purpose herein set forth. 2nd. In a vibrating-piston engine, the combination, with communicating chambers, of unequal piston area, of vibrating pistons working within said chambers and secured to and radiating from a common axial shaft to be subjected jointly and successively to unequal pressure upon their opposite faces, substantially in the manner and for the purpose herein set forth. 3rd. The combination, with the two piston chambers of a compound engine, and with its exhaust and supply pipes and ports, of an oscillating valve interposed between said chambers and adapted to connect in its movements said exhaust and supply pipes, and the supply and exhaust ports of said chambers, and to establish communication between the latter, substantially in the manner and for the purpose herein set forth. 4th. The combination, in a compound vibrating piston engine, with its working chambers and with a hollow oscillating shaft, ports therein communicating with the supply and exhaust pipe of the engine and with said chambers, and an oscillating valve fitted within the shaft to participate in its movement and yet be free to oscillate independently thereof, of a valve-lever pivoted to said shaft, and devices for reversing the lever and valve in the movement of the shaft and pistons, substantially in the manner and for the purpose herein set forth. 5th. The combination, in a vibrating piston engine, with its steam chest working chamber, and with a vibrating piston secured to a hollow rock-shaft through which are formed the ports adapted to establish in the movements of the shaft and piston, communicating passages between the steam-chest and working-chamber, and the working-chamber and exhaust pipes of an automatic cut-off valve, fitted upon the outer side of the shaft and adapted, in the movement of the latter, to cut off the admission of steam to its supply ports, substantially in the manner and for the purpose herein set forth. 6th. In a vibrating-piston engine, the combination, with two working-chambers arranged on either side of a common centre, of two steam-chests placed opposite each other on either side of said centre intermediate the working-chamber, and adapted to enclose self-adjusting balanced valve-seats supporting a central oscillating hollow piston-shaft, substantially in the manner and for the purpose herein set forth. 7th. The combination, in a vibrating-piston engine, with its working chamber, its hollow oscillating piston-shaft and pistons, the steam supply ports in the shaft, and a steam-supply chamber or jacket enclosing the same, of self-adjusting balanced valve-faces or seats adjusted to the oscillating-shaft on opposite sides thereof, and fitted with ports for the admission of steam to the shaft, substantially in the manner and for the purpose herein set forth. 8th. The combination, with an angular piston in a piston-engine, and with packing strips fitted longitudinally to the sides and outer edges of the piston, of corner pieces whose ends are inwardly bevelled, to rest each upon and against the counter-part bevelled ends of the adjacent edge and side strip, and be forced outwardly by the outward movement of said strips, substantially in the manner and for the purpose set forth.

No. 24,144. Calendar. (*Calendrier.*)

Stephen J. Cox, New York, N.Y., U.S., 25th May, 1886; 5 years.

Claim.—A calendar, containing the dates of each day of the month throughout the year, each figure or numeral in juxtaposition with an illustration representing the moon's phase at each particular date, essentially as shown and described.

No. 24,145. Knob Attachment.

(*Broche de Bouton de Porte.*)

Williston I. Alvord, Bridgeport, Ct., U.S., 25th May, 1886; 5 years.

Claim.—1st. In combination with the latch hub of a lock, the spindle having shoulder at one extremity and a head at the other, and extending in assembled position through the knobs and hub, coil spring between said shoulder and the inner knob shank, recess formed within the outer knob-shank, adapted to permit of the withdrawal of the spindle and at the same time affording an abutment for the head of the spindle, whereby the latter may be held against retraction, said spindle being adapted near its centre to sustain the abutment of the inner knob shank against the resiliency of the spring, all arranged and operating substantially as and for the purpose set forth. 2nd. In combination with the hub *L*, spindle *A* having at its extremities shoulder *B* and square-head *C*, knob *E*, spring *F* placed between said knob and shoulder, stop *a* on the spindle, against which the inner knob shank may abut, and knob *D* having through its shank an opening *H* square in cross-section, and at the

outer mouth of said opening recess, *G*-shaped, like an eight-pointed star, four alternate angles of which are coincident with the angles of the opening, substantially as shown and described.

No. 24,146. Knob Attachment.

(*Broche de Bouton de Porte.*)

William I. Alvord, Bridgeport, Ct., U.S., 25th May, 1886; 5 years.

Claim.—1st. In a knob attachment, the combination, with the knobs having recesses in their inner shank ends, of independent spring actuated spindles having collars and heads, as described, the latch knob having opening corresponding at the sides to the shape of the heads, and enlarged at the central portion and recesses formed in the inner end walls of said opening at the lateral edges of the same and adapted to contain said heads, substantially as described. 2nd. The combination, with the knobs *A* having in their shanks openings *F*, and rectangular recesses *E* extending from the outer lateral edges of said openings, spindles *B* having shoulders *D* heads *H* at their extremities, coil springs *C* around said spindles and confined between the knob shanks and the shoulders, collars *G* formed integral with said spindles, hub *J*, provided with opening *K* enlarged at the centre and corresponding at its ends to said heads, and recesses formed in the end walls of the opening *K*, substantially as shown and described.

No. 24,147. Oscillating Steam Valve.

(*Soupape de Vapeur Oscillante.*)

George H. Duthie, Muskegon, Mich., U.S., 25th May, 1886; 5 years.

Claim.—1st. The combination, in an oscillating valve, of the cylinder *A*, having a cylindrical bore, exhaust port *E*, and steam passages *F*, of sleeve *B* having its core tapering and adjustable longitudinally, and valve *C* having steam ports *c, c*, and exhaust chamber *D*. 2nd. The combination, in an oscillating valve, of the cylinder *A* having a cylindrical bore, exhaust-port *E* and steam passages *F*, and auxiliary passages *a, a*, of sleeve *B* having its core tapering and adjustable longitudinally, and valve *C* having steam ports *c, c*, and *f, f*, and exhaust-chamber *D*. 3rd. The combination, in an oscillating valve, of the cylinder *A*, having an exhaust port *E*, steam passages *F, F*, and auxiliary passages *a, a*, of valve *C* having steam ports *c, c*, and *f, f*, and exhaust chamber *D*. 4th. The combination, in an oscillating valve, of the cylinder having a steam chamber *a* supplied from a suitable source, outlet openings *b, b*, exhaust port *E* and steam passages *F*, of a valve *C* having steam ports *c, c*, and steam exhaust-chamber *D*. 5th. The combination, in an oscillating valve, with the cylinder *A* having a steam chamber *a* supplied from a suitable source, outlet openings *b, b*, exhaust port *E*, steam passages *T* and auxiliary steam passages *r, r*, of a valve *C* having steam ports *c, c*, and *f, f*, and exhaust chamber *D*. 6th. The combination, in an oscillating valve, with the cylinder having exhaust port *E* and steam passages *F*, of a valve *C* having steam ports *c, c*, exhaust chamber *D* and longitudinal central bridge *c*. 7th. In an oscillating steam valve, the combination, with a cylinder *A* having an exhaust port *E* and steam passages *F* and *g*, of valve *C* having steam ports *c, c*, and *f, f*, exhaust-chamber *D* and longitudinal central bridge *c*. 8th. In an oscillating steam valve, the combination, with a cylinder *A* having a steam chamber *a* supplied from suitable source, outlet openings *b, b*, and exhaust port *E*, steam passages *c, c*, of valve *C* having steam ports *c, c*, and *f, f*, exhaust chamber *D* and longitudinal central bridge *c*. 9th. In an oscillating steam valve, the valve *C* having an exhaust-chamber *D*, steam ports *c, c*, and *f, f*, substantially as set forth. 10th. In an oscillating steam valve, the valve *C* having an exhaust chamber *D*, with a longitudinal central bridge therein, as described, and having steam ports *c, c*, and *f, f*, as and for the purpose set forth.

No. 24,148. Grain and Seed Separator.

(*Séparateur des Grains et des Graines.*)

William Tate, Winston, N.C., U.S., 25th May, 1886; 5 years.

Claim.—1st. In a grain and seed separator and grader, the combination of a frame *A* having curved slots *r*, frame *Q*, hangers *S, S*, screens *V, V*, cross-bar *R* having projecting ends, vertical levers *I* provided with perforations, the perforated brackets *U*, bolts *o*, and fan-shaft *S* having crank-pins *d*, as and for the purpose shown and set forth. 2nd. A grain and seed separator and grader comprising a suitable hopper, a laterally vibrating shoe *H*, shaft *S*, diagonally or cam-grooved collar *P*, horizontal level *M* provided with perforations near its centre, perforated brackets *N*, bolt *O*, rod *n*, screen *L*, longitudinally shaking frame *Q*, cross-bar *R*, vertical levers *I* provided with perforations near their centres and slotted at their upper ends, crank-pins *d*, perforated brackets *U*, bolts *o*, screens *V, V*, spouts *W, W*, *W, W*, and blast fan *C*, all constructed and combined to operate as and for the purpose shown and set forth.

No. 24,149. Car-Coupler. (*Attelage de Chars.*)

John Coup, New York, N.Y., and William Dudgeon, Union, Ohio, (assignees of David McCurdy, Cleveand, Ohio.) U.S., 25th May, 1886; Reissue of Patent No. 22,183.

Claim.—1st. In car couplings, a swinging coupling hook mounted on a rotating shaft by means of which it is operated, in combination with a pear-shaped crank having pivoted wheel or ellipse carrying a vertical rod for operating the coupler from the top of the car, as described, substantially as and for the purpose set forth. 2nd. In car-couplings, a coupling hook having rear projections provided with a cross pin and latch or pawl, said pin engaging with an inclined guide inside of the draw-head for holding or retaining the hook in an elevated or depressed position, substantially as and for the purpose specified. 3rd. The draw head of a car coupling provided with a guide formed in its side, and thereby adapted to operate in conjunction with a coupling hook so as to enable it to couple with cars of varying heights, substantially as shown and described. 4th. In car-couplings the combination, with the mating shaft of a pear-shaped crank, having pivoted wheel or ellipse carrying a vertical rod for operating the coupler from the top of the car, substantially as shown and set forth. 5th. The combination, with the rotating shaft which

operates the hook of a self-acting car-coupler, of the ring having lips or sockets for adapting the said shaft to manipulate the link in making a coupling with an ordinary link and pin coupling, or car not having the automatic coupler attachments, substantially as shown and described.

No. 24,150. Car-Coupler. (*Attelage de Chars.*)

John Coup, New York, N.Y., (Co-inventor with David McCurdy, Cleveland, Ohio), U.S., 25th May, 1886; Reissue of Patent No. 22,183.

Claim.—1st. A car-coupling formed of a hook pivoted to the side of a draw-head by means of a cam hub piece, which, by its semi-rotation, is adapted to raise the said hook, and throw it forward, so as to disengage it from the adjacent car when it is to be uncoupled, substantially as shown and described. 2nd. A car-coupling formed of a curved hook pivoted to the side of the draw-head on an eccentric cam, and arranged to swing vertically and hook on to a palette-shaped cam or coupling block on the adjacent draw-head, substantially as shown and described. 3rd. In a car-coupling, a transverse shaft or rod passing through the draw-head, and carrying on one of its ends, an eccentric cam on which is assembled the coupling hook for connecting two cars, and on the other end of it a palette-shaped cam for engaging the hooked end of the coupling of an adjacent car, substantially as shown and described. 4th. In a car-coupling, a cam for actuating or moving the coupling hook upward and forward so as to disengage it, substantially as shown and described. 5th. A draw-head for coupling cars provided with a vertically-swinging coupling hook pivoted to its side by an eccentric cam, and provided with a laterally projecting stop on the top of which the said coupling hook rests, substantially as shown and described. 6th. A car-coupling consisting of a draw-head with a vertically-moving hook pivoted to its side by an eccentric cam, and provided with means for operating the said cam, and, thereby the coupling hook, by means of a system of levers and rods attached to the car, and connected with the periphery of the hub of the cam by cords or chains wound circumferentially thereon, substantially as shown and described. 7th. In a car-coupling, a coupling piece or cam in approximately palette-shape, adapted to receive and hold the hooked end of a coupling hook, pivoted to the side of the draw-head of an adjacent car, substantially as shown and described. 8th. A stop or guide rest and a cam-shaped surface to engage thereon, applied respectively to either the coupling hooks or the side of the draw-head, so as to cause the free end of the coupling hook to move into position to couple or uncouple according as it is thrown forward or backward by the actuating cams, substantially as shown and described.

No. 24,151. Line Support for Harness.

(*Porte-Rènes pour Harnais.*)

Daniel L. Emry, Carthage, Mo., U.S., 25th May, 1886; 5 years

Claim.—1st. A line supporter formed throughout of a single piece of material having the base-loops *e, e*, and the upright loops *f, p* and *h*, the outer loops *f* and *h* having their upper portions splayed outward, substantially as herein shown and described. 2nd. A line supporter composed of a spring-wire *E*, provided with arms *C, C*, bent to form openings *D, D*, and narrow necks *d, d*, bent at *e, e*, *e*, *e* and *e*, to receive the line, substantially as set forth. 3rd. The combination, with the back-band of a harness, of a spring-support composed of a piece of spring-wire *E*, provided with a coil *e*, and arms *C, C*, the outer arms being bent at *e*, *e* and *e*, *e*, to form the openings *D, D*, and narrow necks *d, d* and flaring ends *e, e*, substantially as shown and described. 4th. The combination, with the back-band of a harness, of a spring-support composed of a piece of spring-wire bent to form the base-loops *e, e*, and the upright loops *f, g* and *h*, substantially as shown and for the purpose set forth.

No. 24,152. Steam and Water Valve.

(*Souape de Vapeur et d' Eau.*)

John L. Nelson and Andrew F. Lauderholm, Chicago, Ill., U.S., 25th May, 1886; 5 years.

Claim.—1st. A valve having a greater exposed area upon its seating face, and provided with a stem sliding freely in a guide or packing box, substantially as and for the purpose set forth. 2nd. In a steam or water gauge, a glass or tube connected to the boiler by suitable pipes, in combination with two valves placed at either end of the glass, and formed substantially as herein described, whereby they are held open by the pressure in their normal condition but at once closed in the event of an accident to the glass, substantially as shown and described. 3rd. In a steam or water-gauge, the lower pipe *B*, provided with a sediment chamber having a removable plug or outlet, substantially as and for the purpose set forth. 4th. In a steam or water-gauge, the pipe *B B*, glass *C*, and valves *D, D*, in combination with the blow-off *e*, and valve *f*, whereby the gauge is readily cleaned or blown off either in whole or part, substantially as shown and described. 5th. The valve *D* having a large seating face, and a smaller rear face, and provided with the stem *d* having a free endwise movement through its packing box, substantially as and for the purpose set forth.

No. 24,153. Sofa Bed. (*Lit-Canapé.*)

John W. Reid, Toronto, Ont., 25th May, 1886; 5 years.

Claim.—1st. The combination of the seat *A*, detachably and reversibly arms *C*, back *B*, hinge *D*; *d*, notch *d*, catch *E*, latch *E*, link *e*, cam *F*, rod *F*, and hand wheel *F*; 2nd. The combination of the seat *A*, arms *C*, back *B*, feet *B*, hinge *D*, *D*, *d*, and suitable operating mechanism. 3rd. The combination of the bars *D, D*, pivot *d*, notch *d*, catch *E*, latch *E*, link *e*, cam *F*, rod *F*, and means for operating the same. 4th. The combination of the back *B*, folding feet *B*, hinge *D*; *d*, catch *E*, cam *E*, link *e*, arm *F*, and rod *F*. 5th. A sofa seat having removable and reversible arms, an independently framed back removably hinged to the seat bar, hinges connecting seat and back, pivotally gravitating retaining catches pivoted

to said hinges, and means for disengaging the same simultaneously. 6th. A loose pin sofa hinge consisting of a bar having a notched end, a bar pivoted thereto and carrying pivotally a catch adapted to engage said notch, said catch linked to a latch, a rod pivoted in said bar transversely and carrying a cam adapted to lift said notch, said bar substantially as shown and described, and as and for the purpose set forth.

No. 24,154. Baling Press.

(*Presse d'Empaquetage.*)

George Ertel, Quincy, Ill., U.S., 25th May, 1886; 15 years.

Claim.—1st. The combination, in a baling-press and with the sweep-head *A* pivoted at *F* to the press frame, and provided with the semi-annular opening *a*, the pitman *I*, and the chain *H* connected to the sweep-head at *h*, and to the beam at *h*, substantially as specified, of the yoke *L* pivoted on a pin *M* passing through the opening *a* of the sweep-head, and pivoted at *N* to the pitman, substantially as and for the purposes set forth. 2nd. In a baling-press, the pivoted sweep-head *A* provided with an opening *a*, in combination with the yoke *L*, formed in one piece with a hub *J*, pivoted on a bolt *H* passing through the head opening *a*, and with arms *l, l*, and connections, substantially as specified, between the sweep-head pitman and yoke as and for the purposes herein set forth. 3rd. In a baling-press, the combination, with the sweep-head *A* pivoted to the press-frame, and provided with an opening *a*, of the yoke *L* pivoted by its hub *J* on a pin *M* passing through the sweep-head opening *a*, and said hub *J* fitting between the top and bottom parts of the press frame and connections, substantially as specified, between the sweep-head pitman and yoke, as and for the purposes set forth. 4th. In a baling-press, the combination of the sweep-head *A* formed in one piece, and pivoted on a pin *F* to the press-frame, and made with bosses *a, a*, fitting between the top and bottom parts of the press-frame, and provided with an opening *a*, the yoke *L* formed in one piece with a hub *J* fitting between the top and bottom parts of the press frame, and pivoted on a pin *M* passing through the head-opening *a*, and having arms *l, l*, the pitman *I*, a pin *N* pivoting the yoke to the beam, and a chain *H* connected at *h* to the sweep-head, and at *h* to the pitman, substantially as and for the purposes herein set forth.

No. 24,155. Rein Holder. (*Accroche Rènes.*)

James D. Young, Elgin, Texas, U.S., 25th May, 1886; 5 years.

Claim.—The combination, with a standard having a recess or seat to receive the end-board of a wagon, and having oppositely-extending shoulders located above said seat, of the pivoted clamps having the oppositely-extending lateral projections *d*, said projections having serrated engaging faces, and having rounded upper ends to fit similarly-shaped recesses in the standard, substantially as described.

No. 24,156. Packing for Valve Stems and Piston Rods.

(*Garniture pour Tiges des Soupapes et Pistons.*)

Frederick G. Brownell and Theodore S. Peck, Burlington, Vt., U.S., 27th May, 1886; 5 years.

Claim.—The stuffing box *C*, the gland *G* provided with a concave inner face, the correspondingly concave collar *F* provided with a guide hub, the packing; *H*, the flanged sleeve *D* provided on one side of its flange with a guide hub for the spring, and on the other side with a hub that enters the steam chest and forms a guide for the valve stem at that point, and the spring *E* confined between said sleeve and collar and encircling the hub thereon, all constructed and arranged as hereinbefore shown and specified.

No. 24,157. Post Hole Auger.

(*Sonde à Tarière.*)

George W. Smith and George N. Edgar, Union, Ind., U.S., 27th May, 1886; 5 years.

Claim.—1st. The combination, with the vertical holder tube, of the recessed handle, the under bracket having its eye communicating with the said recess, the branched bracket having the perforated bearings, the angular levers carrying the blades, the short connecting-rod connecting the slotted rod with the finger-lever in the handle, all arranged for joint operation substantially as specified. 2nd. A post-hole auger consisting of a bracket with divergent arms having perforated bearings, angular levers carrying blades at the lower ends of their vertical branches, a connecting tube having a slotted end to receive the horizontal branches of the angular levers, and an operating rod connecting the said slotted rod with a pivoted lever in the recessed handle, substantially as specified. 3rd. The combination, with the branched bracket and the angular levers carrying shovels, of the connecting-rod, the operating rod, the pivoted finger-lever, and the latch for engaging the said lever to hold the blades in the desired position, substantially as specified.

No. 24,158. Car-Coupling. (*Attelage de Chars.*)

Miles Pettel and Samuel Noxon, Wellington, Ont., 27th May, 1886; 5 years.

Claim.—1st. The combination, with the draw-bar, of the arm *D, D*, and lever *F*, the latter provided with a lever arm *f* adapted to engage a stationary strap or part, the construction being such that, by lifting the lever, the draw-bar is brought out to the proper position, substantially as and for the purpose described. 2nd. The combination, with the draw-bar, of the lever *F* hinged to move therewith, and provided with an arm *f* adapted to engage a stationary strap or adjacent part, the construction being such that, as the draw-heads come together and the draw-bar is thrust back, the stationary strap or part will serve to trip and throw down the lever *F*, substantially as and for the purpose described. 3rd. The combination, with a drawer and lever *F*, of a spring *G* to which the lever is pivoted, said spring serving to hold the lever in stable equilibrium when in a

horizontal position, substantially as and for the purpose described 4th. The combination, with the draw bar and the spring G, of the part D to take the place of one of the ordinary strap bolts, substantially as and for the purpose described.

No. 24,159. Car-Coupling. (*Attelage de Chars.*)

Miles Pettet and Samuel Noxon, Wellington, Ont., 27th May, 1886: 5 years.

Claim.—1st. The combination, with a draw-bar, of a lever F hinged thereto, so as to move therewith a spring likewise moving therewith, to which the coupling-pin is attached, said lever provided with an arm adapted to engage a stationary strap or part, and with another arm adapted to depress the spring and release the pin, the construction being such that, by lifting the lever F to its horizontal position, the coupling-pin is withdrawn, and as the cars come together the lever is tripped, the spring released and, the pin inserted, substantially as and for the purposes described. 2nd. The combination, with a draw-bar, of a swinging lever F adapted to guide the link of the approaching car, a spring to which the coupling-pin is engaged, said lever hinged to and adapted to move with the draw-bar, and having a projection f adapted to depress the spring, the construction being such that, as the lever is lifted to its horizontal position, the arm f serves to depress the spring and release the link, and means for tripping the lever and releasing the spring, substantially as and for the purposes described.

No. 24,160. Broadcast Seed Sower.

(*Semoir à la Volée.*)

Stephon Freeman, Racine, Wis., U.S., 27th May, 1886: 5 years

Claim.—1st. In a sower, a rotary adjustable disk having its body portion provided with a series of graduated openings, and a series of perforations around near its outer edge, in combination with a suitable dog or stop adapted to engage said perforations, as set forth. 2nd. In a sower, a rotary adjustable disk having its body portion provided with a series of graduated openings, arranged in pairs, a series of perforations and a series of indicators around its outer edge, said perforations and indicators being relative to the openings, as set forth. 3rd. In a sower, the floor thereof provided with depending seats and suitable springs located in said seats, and designed to exert their power against the cut-off plates, whereby the latter are held up against the underside of the graduated disk, as set forth. 4th. In a sower, the floor thereof consisting of a single casting integrally formed with a distributor shaft bearing spring seats, depending vertical flange, tooth quadrant and rock-shaft bearing and casting, being suitably recessed to receive the cut-off seed delivery and top plates, as set forth. 5th. In a sower, the floor thereof consisting of a single casting suitably recessed to receive the cut-off and seed delivery plates, in combination with a top plate having bevelled openings, as set forth. 6th. In a sower, the floor thereof provided with a slot at an angle to its horizontal plane, in combination with a rotary adjustable disk having a series of graduated openings arranged in pairs, and a top plate having bevelled openings, said openings in the disk and top plate arranged in the same relative plane with the floor slot when in operative position, as set forth. 7th. In a sower having a clutch faced sprocket-wheel adapted to engage a fixed clutch on the driving shaft, the hub of said wheel made plain, in combination with an angular arm operated by a rock-shaft and terminating in a ring adapted to fit the hub, and a binding collar also adapted to fit said hub and retain the ring in operative position, as set forth. 8th. In a sower, a detachable top plate provided with a suitable dog, and having seed delivery openings, in combination with a rotary adjustable disk having graduated openings arranged in pairs, and perforations adapted to engage the top plate dog, and cut-off plates arranged to bear closely against said disk, as set forth. 9th. In a sower, a detachable top plate cut away at its forward end, and having an integral housing and bevelled openings, in combination with a rotary adjustable disk provided with a series of graduated openings arranged in pairs, and adapted to be brought into register with said top plate openings, the disk having a series of perforations near its outer edge designed to engage an automatic dog operative in the top plate housing, said disk also having a series of indicators exposable at the cut-away portion of the top plate, as set forth.

No. 24,161. Machine for Testing the Muscular Strength of the Hands and Arms. (*Machine pour Eprouver la Force Musculaire des Mains et des Bras.*)

Adélar F. Martel, Montreal, Que., 27th May, 1886: 5 years

Claim.—1st. In a hand-power tester, two handles, one within the other, one of which is stationary and the other movable, and to which is fitted the registering mechanism, as shown and described. 2nd. In a hand power tester, a bar fitted with a coiled spring at one end, and a handle at the other, as shown and for the purpose hereinbefore set forth. 3rd. In a hand-power tester, a bar fitted with a coiled spring, a rack bar and a trigger notch, as shown and for the purpose hereinbefore set forth. 4th. In a hand-power tester, a balance bar having a weight and sliding door at one end, and a trigger pendant on the other end, as shown and for the purpose hereinbefore set forth. 5th. In a hand-power tester, a box having a fixed handle at one end, a receptacle for coin and a receiving orifice over the sliding door, as shown and for the purpose hereinbefore set forth. 6th. A hand-power tester, a box having a fixed handle, a spring bar with trigger notch and movable handle, a rack bar and pinion, a dial needle and a balance lever with coin receptacle at one end, and trigger pendant at the other end, as shown and for the purpose hereinbefore set forth.

No. 24,162. Pail, Tub, etc. (*Seau, Cuvette, etc.*)

Archibald Brako, Toronto, Ont., 27th May, 1886: 5 years.

Claim.—1st. A pail, or its equivalent, having a body A made of thin veneer suitably jointed, in combination with a flanged bottom rigidly secured to the bottom of the body A of the pail. 2nd. A pail,

or its equivalent, having a body A made of thin veneer, connected together by a tongue and groove joint secured by the rivets a, in combination with a bottom C having a flange b, designed to fit the body A, and secured thereto by means of the band D and rivets d, substantially as and for the purpose specified. 3rd. A pail, or its equivalent, having a body A made of thin veneer, connected together by a tongue and groove joint secured by the rivets a, in combination with a bottom C having a flange b designed to fit the body A, and secured thereto by means of the band D and rivets d, the band E fitted upon the top edge of the body A, substantially as and for the purpose specified.

No. 24,163. Hammock Chair. (*Fauteuil-Hamac.*)

George B. Hook, Brower, Me., U.S., 27th May, 1886: 5 years.

Claim.—1st. The herein described seat, formed of two pieces of any strong textile or pliable substance, each shaped with a convexity in its inner edge, and a concavity on the outer edge, the same being secured together lengthwise at their inner edges and secured at their outer edges to curved arms, substantially as described. 2nd. The herein described device for suspending a swinging seat or hammock, consisting of the suspension lines a, a, a, furnished at convenient points near their centres with a sufficient number of eyes adapted to engage with hooks attached to rigid supports, substantially as described. 3rd. In combination with a seat swinging or suspended by the suspension lines a, a, a, or in any equivalent manner, the foot-rest C supported and adjustable longitudinally by lines g, g, g, attached at their upper ends to convenient points u, u, upon the parts a, a, of the suspension lines, and running through grommets l, d, encircling said lines and the parts a, a, of the suspension lines, through apertures n, n, in said foot-rest under the bottom of said foot-rest, and thence upwards through apertures m, m, in said foot-rest and through grommets e, e, encircling said lines and the parts a, a, of the suspension lines, to convenient points p, p, upon said parts a, a, of the suspension lines, substantially as described. 4th. The herein described swinging seat or hammock, consisting of the combination of the seat A, suspension lines a, a, a, provided with eyes b, b, b, foot-rest C, lines g, g, g, attached at their upper ends to convenient points u, u, upon the parts a, a, of the suspension lines, through apertures n, n in the foot-rest C under the bottom of said foot-rest, and thence upwards through apertures m, m in said foot-rest, and through grommets e, e, encircling said lines and the parts a, a, of the suspension lines, to convenient points p, p, upon said parts a, a, of the suspension lines, the whole with or without the apron B, substantially as described.

No. 24,164 Tipping and Balancing Attachment for Carts, etc. (*Bascule et Contrepoids pour Charettes, etc.*)

Thomas C. Sargeant, Weedon, Eng., 27th May, 1886: 5 years.

Claim.—1st. The application and use to a cart or wagon of a bracket, to which is hinged or joined a tubular, or box frame, or casing, containing a screw rotated by suitable gearing, in combination with a nut and with a connecting rod jointed to the nut and to the cart frame, for balancing the body of the cart or wagon, substantially as hereinbefore described. 2nd. The combination of a cranked rod or link mounted in suitable bearings, with a hook or catch on the tubular, or box frame, or casing, for releasing and allowing the latter with the combined apparatus to be unfolded in its three hinges or joints thereby instantaneously tipping the cart or wagon and for refastening the same, substantially as hereinbefore described.

No. 24,165. Smoothing Iron. (*Fer à Repasser.*)

William C. Smalstig, Springfield, Mo., U.S., 27th Mar, 1886: 5 years

Claim.—The combination of the central frame A, provided with the flanges or shoulders K, the removable faces applied to opposite sides of the frame, the handle, the lamp and pivoted lever E, substantially as described.

No. 24,166. Sash Holder. (*Arrêtée Croisée.*)

Algornon L. Wilkerson, Huntsville, Ala., U. S., 27th May, 1886: 5 years.

Claim.—In a sash holder, the combination of a window-frame having guide pins and spring pressed strips provided with tubes, with a sash and beads or slats having recesses, guide pins and spring-pressed strips provided with friction tubes, in which said guide-pins are adapted to play, substantially as shown and described.

No. 24,167. Construction of Mattresses.

(*Fabrication des Matelas.*)

Lars P. Nelson, Chicago, Ill., U.S., 23th May, 1886: 5 years.

Claim.—1st. A mattress, composed of layers of hair and cotton separated by a sheet impregnated with a suitable disinfectant and antiseptic, substantially as described. 2nd. A mattress, the body of which is composed of separate layers of hair, cotton or wool, in combination with side frillings or cotton or wool, substantially as described. 3rd. In a mattress, a sheet of suitable material impregnated with a suitable disinfectant, and extending through the body of the mattress, substantially as described. 4th. The combination of the layers of hair and cotton, the separating disinfecting sheet and side fillings of cotton or wool, substantially as described. 5th. A light mattress, provided with the side fillings, in combination with the side rails over which said side fillings are extended, and fastening devices for securing said sides of the mattress in such position to the side rails, substantially as described. 6th. A combined elastic mattress and elastic bed-bottom, the body of said mattress filled with elastic material in layers, and provided with side filling of similar material as an outside lining to said layers and the said bed-bottom, composed of springs and side rails, and fastening devices by which the said sides of the mattress are secured over the side rails, substantially as described.

No. 24,168. Horse Shoe. (Fer à Cheval.)

James R. Gordon, Toronto, Ont., 27th May, 1886; 5 years.

Claim.—A horse shoe composed of two sections united by a single joint at the centre, and provided with the two toe corks *a, a*, placed as shown, all substantially as herein described.

No. 24,169, Self-Lubricating Pulley Pin.

John C. Brown, Port Perry, Ont., 27th May, 1886; 5 years.

Claim.—1st. The caps *B* having the inwardly turned flanges *b*, to fit on and around the ends of the chambered body *A*, as shown and described. 2nd. The combination of the chambered body *A* having the vent holes *a*, with the caps *B* provided with the flanges *b*, and the bolt *C* passing through the whole, substantially as herein shown and described, and for the purpose set forth.

No. 24,170. Manufacture of Barrel Bodies, etc. (Fabrication des Barils, etc.)

Samuel M. Hotchkiss, Hartford, Ct., U.S., 28th May, 1886; 5 years.

Claim.—1st. The combination of the external side compressors, the hydraulic rams operating the same, and the hydraulic pump operating all the rams, substantially as described, and for the purpose set forth. 2nd. The combination of the external side compressors, the rams operating the same, the interspace compressors, and the rams operating the interspace compressors, substantially as described, and for the purpose set forth. 3rd. The combination of core and external side compressors with the annular pulp reservoir *a*, located over the same, and the ring-gate *a*, substantially as described, and for the purpose set forth. 4th. The combination of the external side compressors with a core raised and lowered by a water ram, and the ring-gate operated by water-rams, substantially as described, and for the purpose set forth. 5th. In combination, the frame-ring *a* made in one piece, the cylinders *i, p*, formed therein, the external side compressors and interspace compressors, and the pistons, substantially as described, and for the purpose set forth. 6th. The interspace compressors combined with the external side compressors, and held backward thereagainst by a fluid-pressure applied to the piston heads appurtenant to the interspace compressors, substantially as described, and for the purpose set forth.

No. 24,171. Machine for Drying and Pressing Pulp Barrel Bodies. (Machine pour Faire Sécher et Presser les Barils en Papier.)

Samuel M. Hotchkiss, (Co-inventor with Benjamin A. Mason,) Hartford, Ct., U.S., 28th May, 1886; 5 years.

Claim.—1st. In combination, the core-blocks and core sections chambered by heat ducts, the core-spine provided with a steam-chest, and the reciprocating pipes, which connect said steam-chest and said ducts, substantially as described, and for the purpose set forth. 2nd. In combination, the core-block and core-sections chambered by heat ducts, the core-spine provided with steam-chests at top and bottom, and the two sets of reciprocating pipes which connect said steam-chests with said heat-ducts, substantially as described, and for the purpose set forth. 3rd. In combination, the core-blocks and core-sections chambered by heat-ducts, the core-spine provided with steam-chests *a*, the reciprocating pipes *b*, disk *c*, and rods *d*, all substantially as described, and for the purposes set forth.

No. 24,172. Manufacture of Barrel Bodies from Pulp. (Fabrication des Barils en Papier.)

Samuel M. Hotchkiss, (Co-inventor with Benjamin A. Mason,) Hartford, Ct., U.S., 28th May, 1886; 5 years.

Claim.—1st. The combination of the core-spine, with the collapsible core-blocks and core-sections, substantially as described and for the purpose set forth. 2nd. In combination, the core-plate *s* having the mortises *z, z*, the removable core-spine *t*, the core-sections *u* provided with bolts *g*, and the core-blocks *v* provided with bolts *a*, substantially as described and for the purpose set forth. 3rd. In combination, the core-plate *s* having the mortises *z*, the core-sections *u*, bolts *g*, racks *h*, pinion *i*, and ring-gear *j*, substantially as described and for the purpose set forth. 4th. In combination, the core-plate *s* having mortises *z*, bolts *a*, racks *h*, pinion *i*, and ring-gear *j*, substantially as described, and for the purpose set forth. 5th. In combination, the core-plate *s* having mortises *z*, *z*, core-sections *u*, core-blocks *v*, bolts *a*, *g*, racks *h*, *h*, and ring-gears *d*, *j*, substantially as described and for the purpose set forth.

No. 24,173. Making Barrel Heads from Pulp. (Fabrication des Fonds de Barils en Papier.)

Samuel M. Hotchkiss, (Co-inventor with Benjamin A. Mason,) Hartford, Ct., U.S., 28th May, 1886; 5 years.

Claim.—1st. In combination, the fixed platen, the pressing-piston, the revolving table provided with forming-orifices, the head-formers *r*, and the rim-formers *t*, substantially as described and for the purpose set forth. 2nd. In combination, the fixed platen, the pressing-piston, a forming-orifice, the head-former *r*, the rim-former *t*, and the cup-ring *z*, substantially as described, and for the purpose set forth. 3rd. In combination, the fixed platen, the pressing-piston, the rotating table provided with forming-orifices, and the ejector, substantially as described, and for the purpose set forth. 4th. In combination, the fixed platen, the pressing-piston, the rotating table provided with forming-orifices, the ejector, the head-former, the rim-former, and the cup-ring, substantially as described.

No. 24,174. Target for Rifle Shooting.

(Cible.)

Arthur L. Winsor, Brighton, Eng., 28th May, 1886, 5 years.

Claim.—1st. The combination of revolving bar *B*, the locking plates *E, E*, the spring *F*, the shoes *K, K*, the mode of fixing targets, and shifting same, the releasing action with and without lever *H*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the signalling disc *M*, socket *L*, arm *O*, and the marking apparatus plate *P*, the valuer *Q*, substantially as and for the purpose hereinbefore set forth.

No. 24,175. Machine for Bolting or Dressing Flour. (Machine pour Bluter la Farine.)

Alexander Dobson, Beaverton, Ont., 28th May, 1886, 5 years.

Claim.—1st. A cylindrical reel covered with ordinary bolting silk, in combination with a series of buckets connected to, and arranged within the said reel, and designed to distribute the meal over a large portion of the bolting surface of the said reel, substantially as and for the purpose specified. 2nd. A cylindrical reel covered with ordinary bolting silk, and provided with ends *B*, in combination with the spindles *C* and *D* arranged in pairs, as specified, and supported by the boards *E* connected to the reel-shaft *A*, substantially as and for the purpose specified. 3rd. A cylindrical reel covered with ordinary bolting silk, and provided with ends *B*, in combination with a head *F*, fitting into an annular hole in one of the ends *B*, and held stationary in the frame of the machine, so as to permit the insertion of the spout *G*, substantially as and for the purpose specified. 4th. A cylindrical reel covered with ordinary bolting silk, and provided with ends *B*, in combination with a series of plates *d* connected to the inner surface of the end *B*, at the discharge end of the reel, and designed to elevate the meal to the spout *H*, extending through the stationary head *F*, substantially as and for the purpose specified.

No. 24,176. Fruit Jar Cover.

(Couvercle de Pot à Fruit.)

James Gibbords, Jamestown, N.Y., U.S., 28th May, 1886, 5 years.

Claim.—1st. A fruit jar cover having a bevelled or inclined bearing surface on its upper face, the said bearing surfaces being provided with two or more steps, substantially as and for the purpose set forth. 2nd. A fruit jar cover having a bevelled or inclined bearing surface on its upper face, the said bearing surface being provided on its upper end with an abutment, and with two or more steps located between the abutment and the periphery of the cover, substantially as herein shown and described. 3rd. A fruit jar cover having a bevelled or inclined bearing surface, the latter being provided at its upper end with an abutment and a stop, and at a point between said stop and the lower end of said inclined bearing surface with a second step, substantially as and for the purpose set forth. 4th. A fruit jar cover having an inclined bearing surface on its upper face, the said bearing surface being provided at a point over the centre of the cover with a step, and at a point between said step and the periphery of the cover with a second step, substantially as set forth. 5th. The combination, with a jar and cover having an inclined bearing surface, the latter being provided with an abutment, and with two or more steps located in different planes, of a spring stirrup or yoke adapted to engage the steps and hold the cover in position, substantially as set forth.

No. 24,177. Car-Coupler. (Attelage de Chars.)

Luther Merrill, Astoria, Ill., U.S., 29th May, 1886, 5 years.

Claim.—1st. In a car-coupler, the combination, with head *A*, of pin *C*, having extension *D* and working vertically through the head, and cranked cross-shaft *E*, arranged and operating substantially as described to raise the pin. 2nd. In combination with head *A*, pin *C*, cranked shaft *E*, sliding block *F* provided with stud *f*, spring *g*, and shoulders *i, j*, and bolt *G*, all arranged and operating substantially as described.

No. 24,178. Band Saw Mill.

(Scierie à Lame Sans fin.)

Joseph W. Maxwell, Louisville, Ky., U.S., 29th May, 1886, 5 years.

Claim.—1st. The combination of a band saw, wheels for mounting it, and rollers journaled in adjustable frames, the said rollers to bear against the outer face of the saw, between the mounting wheels thereof, substantially as shown and described, whereby the two portions of the saw between the mounting-wheels may be brought near together, for the purpose set forth. 2nd. The combination of a band saw, wheels for mounting the same, hangers for the said wheels, one or both of the said hangers mounted to slide in fixed bearings, weights, or equivalent means for exerting continual tension to part the said hangers, two pairs of rollers placed opposite to each other and outside of the saw-band midway between the mounting wheels, frames in which the said rollers are journaled, fitted to slide laterally to the saw in fixed bearings and weights, or equivalent means for exerting continual pressure upon the said sliding frames to draw them together, substantially as shown and described. 3rd. The combination of the band-saw *B*, the wheels *C* and *D* for mounting the same, the frames *L* and *M* fitted to slide laterally to the saw, a pair of rollers *K*, journaled in each of the said frames *T* and *T*, fitted to slide in the frames *L* and *M* respectively, and rollers *S* journaled in the frames *I* and *I*, substantially as shown and described. 4th. The combination of the band-saw, wheels for mounting it, a frame *L* fitted to slide transversely to the saw, another frame *T* fitted to slide in the frame *L*, means for fixing the same thereto, a roller *S* journaled in the frame *T*, two saw-guides adjustably fixed to the frame *T* or *L*, and rollers *K* journaled in the frame *L*, substantially as shown and described. 5th. The combination of a band saw, wheels for mounting the same, laterally self-adjusting side guides for the saw, and an equalizer connecting the two side guides, substantially as shown and

described, whereby the two guides are impelled to approach or recede from a central plane equally relatively to each other, as set forth. 6th. The combination, with a band-saw and the described guides adapted to cut two hoops at once from a hoop-pole of the parting blades *r*, two feed-rollers *t*, two angle levers *u*, each carrying one of the rollers *t* on one of its arms, and provided with a spring on its other arm, the two levers mounted on one axis or shaft *v*, a drive-pulley *v* journaled on the same axis or concentric therewith, a belt-pulley on the shaft of each roller *t*, and belts connecting the said roller-pulleys with the pulley *v*, substantially as shown and described.

No. 24,179. Manufacture of Woollen or Felt Stockings, Socks, Slippers, Boots or Shoes. (*Fabrication des Bas, Chaussettes, Pantoufles, Bottes ou Souliers.*)

Edward Ross, Galt, Ont., 29th May, 1886; 5 years.

Claim.—A stocking, sock, slipper, shoe or boot, consisting of layers of wool, having placed between them a series of cords, hardened or fitted together in the ordinary way, so that the cords shall form an integral part of the material, substantially as specified.

No. 24,180. Refrigerator. (*Garde-Manger.*)

Wilbert Hooey and James Hannah, Toronto, Ont., 29th May, 1886; 5 years.

Claim.—1st. A refrigerator, having independent outer walls A, in combination with a frame B and detachable walls C, arranged within the said walls A, so that a space *a* shall be left between the two, substantially as and for the purpose specified. 2nd. A refrigerator, having independent outer walls A, containing independent frame B and independent detachable walls C designed to form an ice-chamber, supported from the outer walls A by the space *a*, in combination with the ceiling E suspended within the frame B, so as to leave a space *c* between the two, substantially as and for the purpose specified. 3rd. A refrigerator, having independent outer walls A containing independent frame B, and independent detachable walls C designed to form an ice-chamber, separated from the outer walls A by the space *a*, in combination with the ceiling E adjustably suspended within the frame B, so as to leave a space *c* between the two, substantially

as and for the purpose specified. 4th. The frame B, having an inwardly projecting ledge *d* formed on it, in combination with the ceiling E adjustably suspended within the frame B, so as to leave a space *c*, substantially as and for the purpose specified.

No. 24,181. Petroleum and Gas Engine.

(*Machine à Pétrole et à Gaz.*)

James Lancaster, New York, N.Y., U.S., 29th May, 1886; 5 years.

Claim.—1st. In a petroleum and gas engine, the measuring and mixing of certain fixed proportions of combustible fluids and atmospheric air, for the purpose described and in the manner shown and set forth. 2nd. In a petroleum and gas engine, the measuring and mixing of certain fixed proportions of combustible fluids and atmospheric air by means of the pump I, valve K and spreader J, operated in the manner described and illustrated and for the purpose set forth. 3rd. In a petroleum and gas engine, the pipe *e* with channels *e* for the purpose of leading the explosive mixture into the chamber C, for the purpose set forth and described. 4th. In a petroleum and gas engine, the valve Q operated in one direction by a cam or tappet, as shown, and in the other direction by a spring and provided with a brake consisting of a piece of India rubber or other fluid substance, substantially as described. 5th. The valves *io* and *iz*, and spreader J, in combination with spring *io* and lever O, substantially as described and for the purpose set forth. 6th. The lever O, in combination with rod N, substantially as described and for the purpose set forth. 7th. The rod N, in combination with the cam *e* on shaft G, substantially as described and for the purpose set forth. 8th. The stirrups L and M, with set screw *m*, in combination with rod N, substantially as described and for the purpose set forth. 9th. The plate Q, with hole *q*, in combination with the plate R and tappet *q* on shaft G, substantially as and for the purpose set forth.

No. 24,182. Sleigh Gear for Baby Carriages.

(*Patin de Traineau pour Voiture d'Enfant.*)

John Brooks, Coaticook, Que., 29th May, 1886; 5 years.

Claim.—A sleigh gear to be attached to the body of a baby's carriage, consisting of the bars A, B, with holes thereon C, C, and runners D, D, as described and for the purposes specified.

CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO THE FOLLOWING PATENTS.

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| <p>610. W. STEPHENSON, 2nd 5 years of No. 12,729, from the 3rd day of May, 1886. Improvements on a Combined Boiler, Land Roller Plough, Seed Drill, Harrow and Traction Engine, 1st May, 1886.</p> <p>611. M. TINDALL, 3rd 5 years of No. 6,140, from the 23rd day of May, 1886. Improvement in the Art or Process and Composition of Matter to be used in the Manufacture of Groats, 3rd May, 1886.</p> <p>612. T. COWAN and J. BALLANTHINE, 2nd 5 years of No. 12,786, from the 13th day of May, 1886. Improvements on Planing Machines, 9th May, 1886.</p> <p>613. P. THACHER, 2nd 5 years of No. 12,503, from the 14th day of May, 1886. Improvements on Belt Fasteners, 7th May, 1886.</p> <p>614. W. H. WRIGHT and A. F. HARDING, 2nd 5 years of No. 12,760, from the 9th May, 1886. Improvements on Stump Extractors, 5th May, 1886.</p> <p>615. E. K. BROADHEAD (assignee), 3rd 5 years of No. 6,375, from the 31st day of July, 1886. Improvements in Machines for Making Felted or Napped Fabrics, 12th day of May, 1886.</p> <p>616. J. C. GILMAN, 2nd 5 years of No. 12,637, from the 19th day of May, 1886. Improvement in the Preparation of Liniments, 14th May, 1886.</p> <p>617. THE ONTARIO PUMP CO. (assignee), 2nd 5 years of No. 12,811, from the 14th May, 1886. Improvements on Wooden Pumps, 14th May, 1886.</p> <p>618. G. HAMILTON, 2nd 5 years of No. 12,821, from the 19th day of May, 1886. Improvements in the Treatment of Short, Coarse Animal Hair. 14th May, 1886.</p> | <p>619. THE SINGER MANUFACTURING CO., 2nd and 3rd 5 years of No. 12,924, from the 9th day of June, 1886. Improvements on Sewing Machines, 17th May, 1886.</p> <p>620. C. F. WHITCHER and H. SAWYER, 2nd 5 years of No. 12,854, from the 21st day of May, 1886. Improvements in Compositions for Roofs of Buildings. Ships' Bottoms, etc. 17th May, 1886.</p> <p>621. W. J. COPP, 2nd 5 years of No. 12,875, from the 30th day of May, 1886. Improvements in damper Grates for Stoves or Furnaces, 19th May, 1886.</p> <p>622. M. F. SEALEY, 2nd 5 years of No. 12,872, from the 30th day of May, 1886. Improvement on Cars and other Vehicles for the Transportation of Cattle, 25th May, 1886.</p> <p>623. W. F. GREENE, 2nd 5 years of No. 13,827, from the 14th day of December, 1886. Improvements on Stove Pipe Dampers, 25th May, 1886.</p> <p>624. G. CUTLER, 2nd 5 years of No. 12,932, from the 10th day of June, 1886. Improvements on Sap Evaporators, 28th May, 1886.</p> <p>625. H. E. BUSK, 2nd 5 years of No. 12,914, from the 7th day of June, 1886. Improvements in Single Cylinder Non-Freezing Force Pumps, 28th May, 1886.</p> <p>626. G. J. CAPEWELL, 2nd 5 years of No. 12,865, from the 30th day of May, 1886. Improvement on Tack Drawers and Tack Drivers, 29th May, 1886.</p> <p>627. Y. C. HEWITT, 2nd 5 years of No. 12,892, from the 1st day of June 1886. Improvements on Lightning Rods, 31st May, 1886.</p> |
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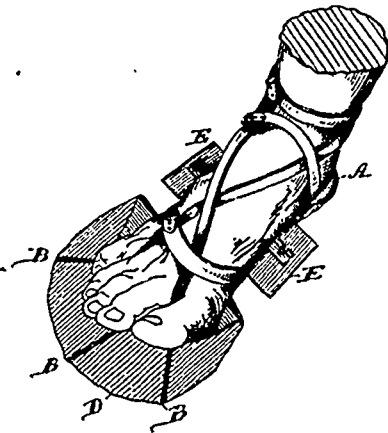
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

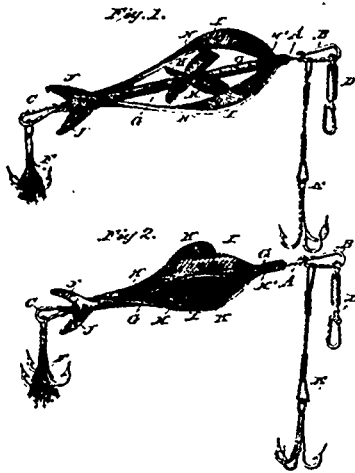
Vol. XIV.

JUNE, 1886.

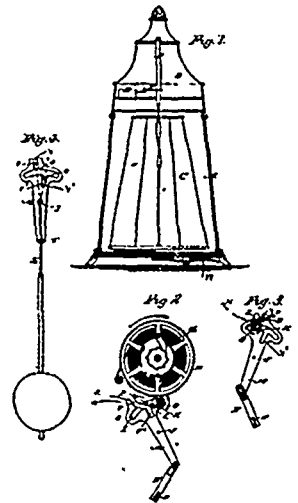
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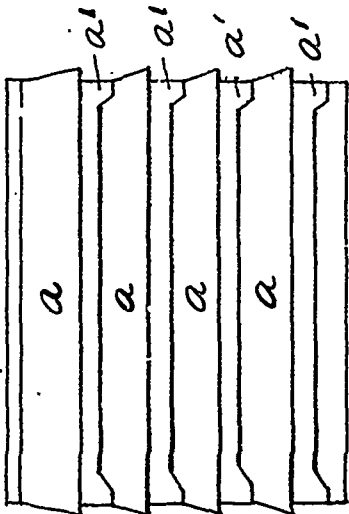
23963 Corbett's Swimming Apparatus.



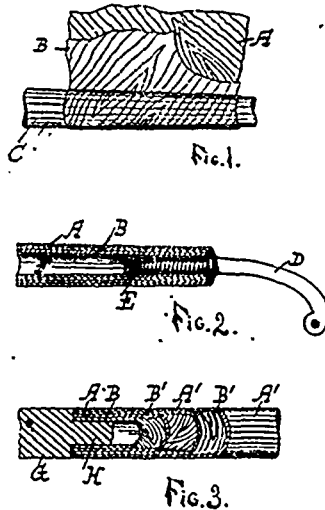
23964 Chapman's Trolling Bait.



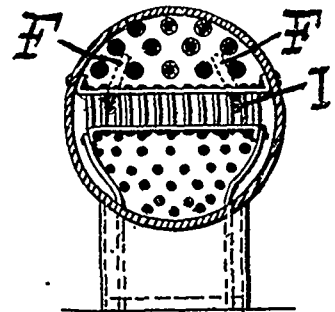
23965 Chapman's Rotary Escape Movement for Clocks, Watches, etc.



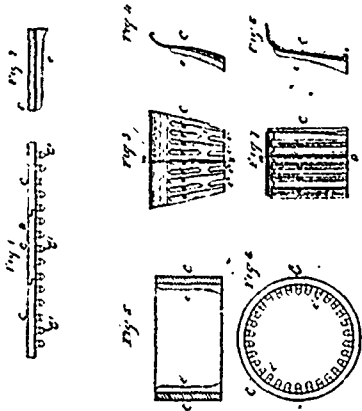
23966 Perry's Car Ventilator.



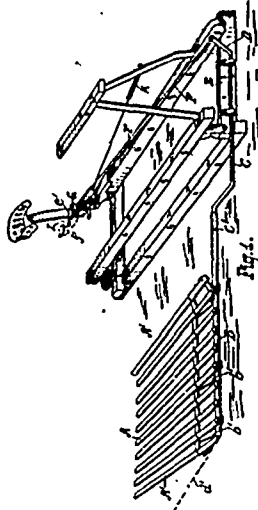
23967 Sherwood's Carriage Bow Slat.



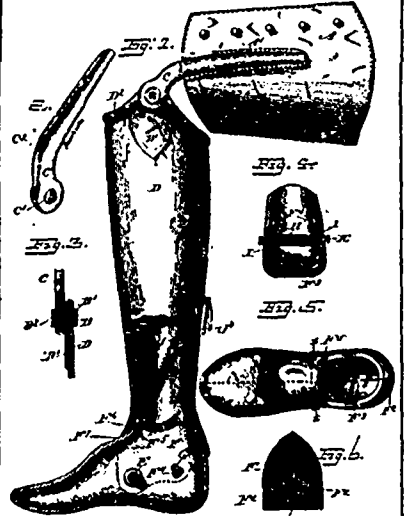
23968 Coventry's Locomotive Boiler.



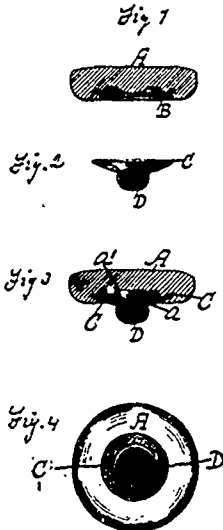
23969 Wassle Wire Pot or Fire Back for Stoves, Ranges and Furnaces.



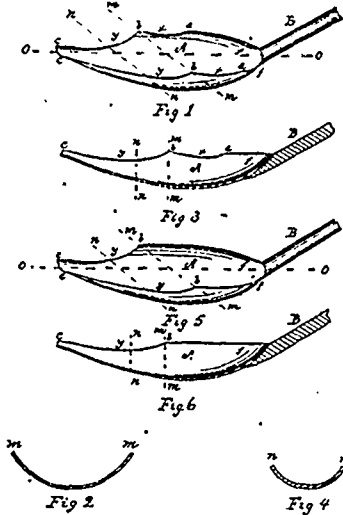
23970 McLachlan's Bundle Carrier for Self-Binding Harvesters.



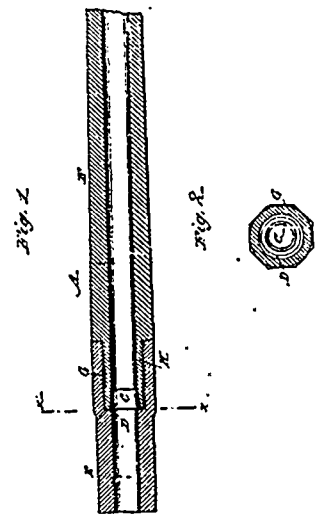
23972 Beacock & Sparham's Artificial Leg.



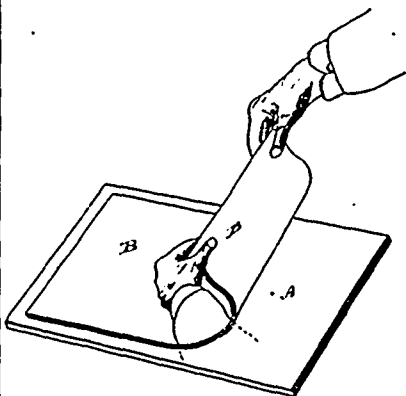
23973 Snyder's Button.



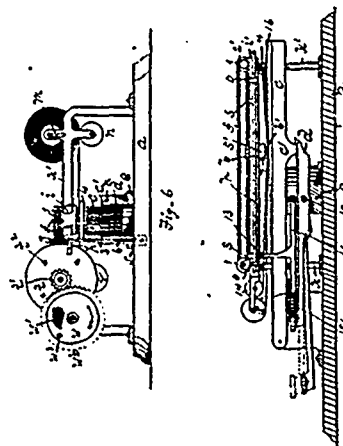
23974 Averill's Combined Spoon and Scraper.



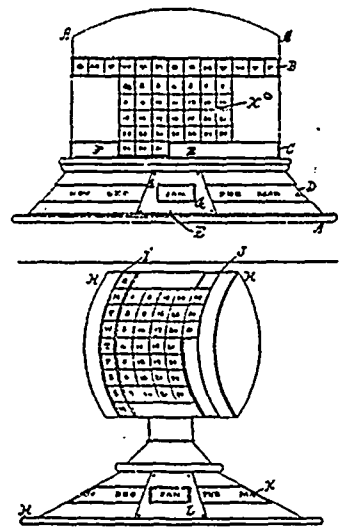
23975 Ballard's Gun Barrel.



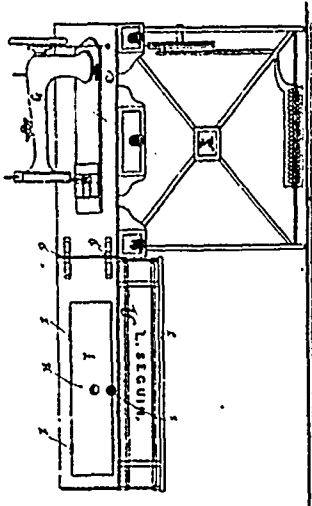
23976 Huttemeyer's Process for the Manufacture of Confections.



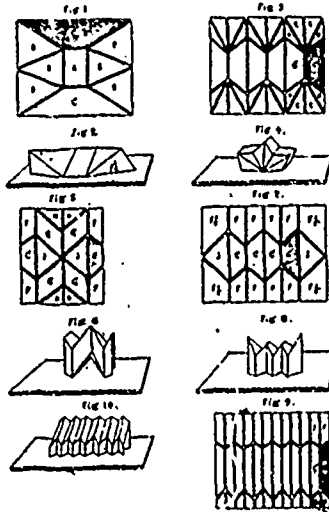
23977 Bailey's Stenographic Machine.



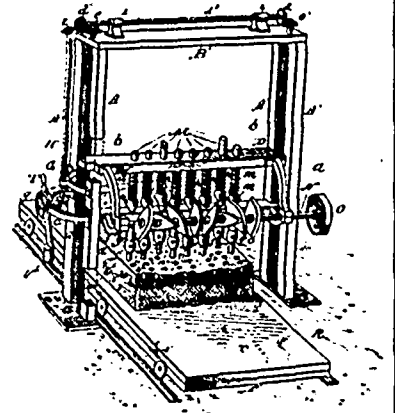
23978 Anderson's Complete Adjustable Perpetual Date Calendar.



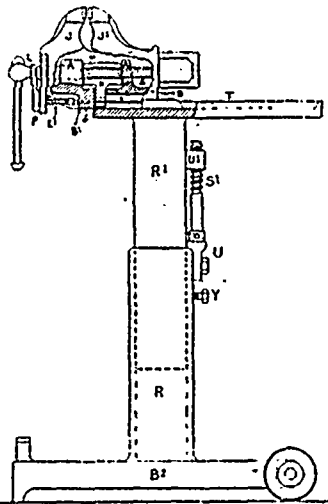
23379 Seguin's Sewing Machine Table.



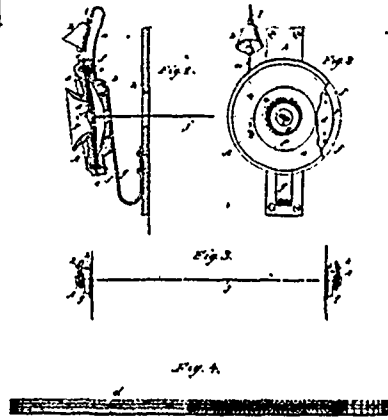
23980 Murphy's Forms for Displaying Textile Fabrics in Dry Goods Stores and Show Windows.



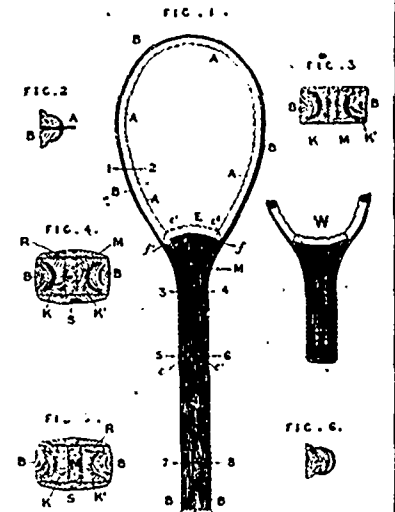
23981 Ross' Stone Dressing Machine.



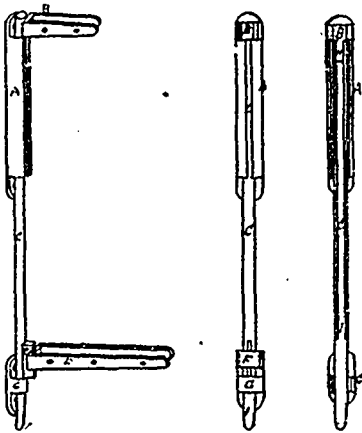
23982 Parkinson's Parallel Vice and Portable Stand therefor.



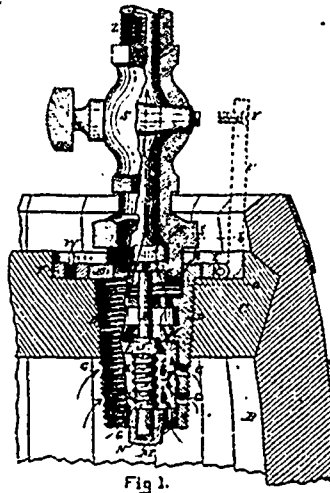
23983 Taylor's Mechanical Telephone and Automatic Call.



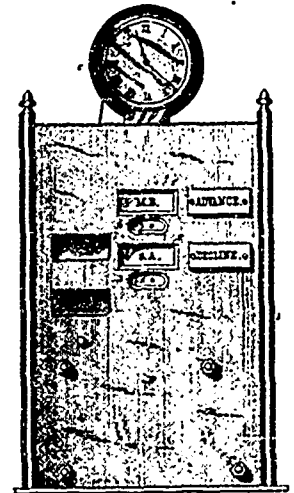
23984 Townsend's Racquet Bat.



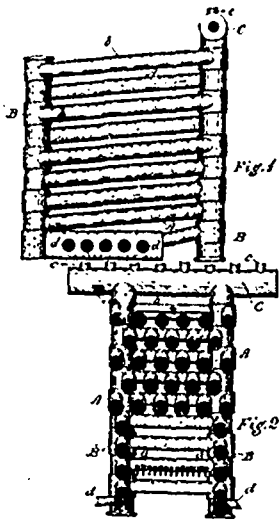
23985 Hicks' Rudder Fittings for Boats.



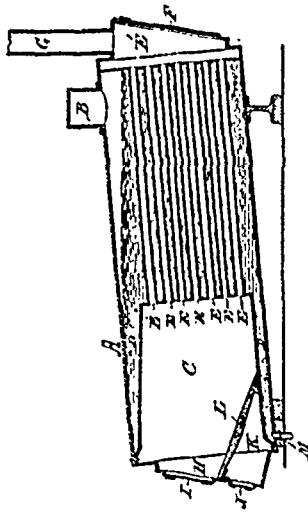
23986 Morse's Faucet and Tap.



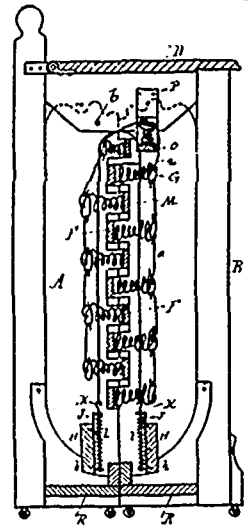
23987 Campbell's Machine for Manipulating Fractional Tickets.



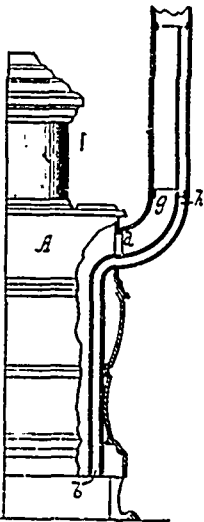
23988 Charland's Hot Water Heating Apparatus.



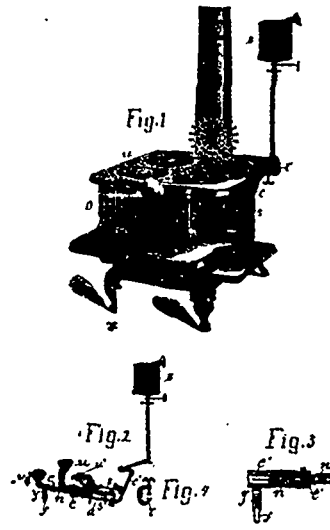
23989 Mumford's Steam Boiler.



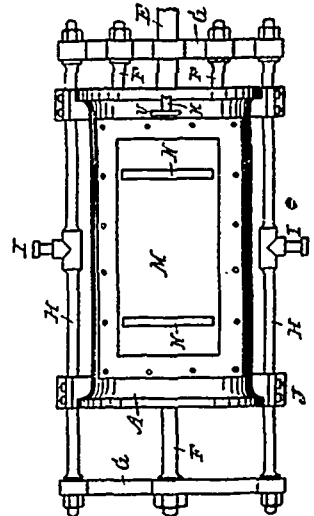
23990 Munson & Schray's Cabinet Folding Bed.



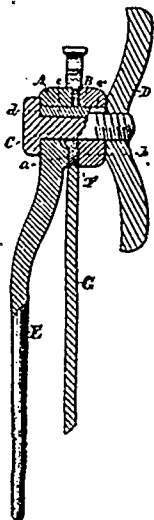
23991 Brinkerhoff's Ventilating Attachments for Heating Stoves.



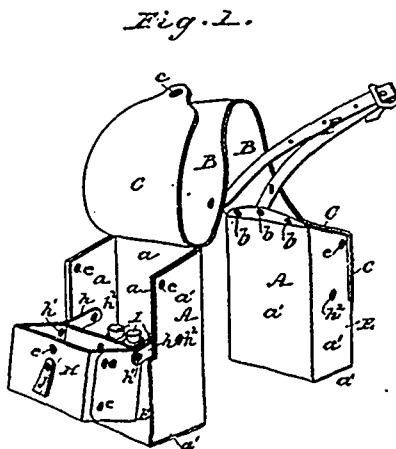
23992 Brown & Train's Vapour-Burning Apparatus for Cook stoves,



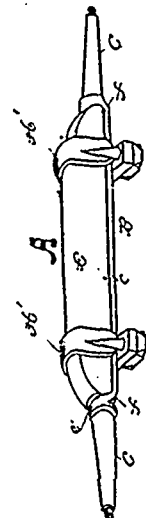
23993 Arnold's Steam Engine.



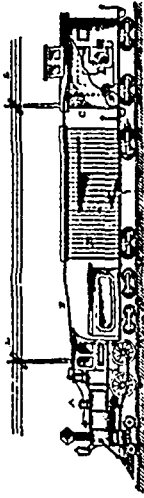
23994 Simond's Wrenches to Set and Withdraw Removable Saw Teeth.



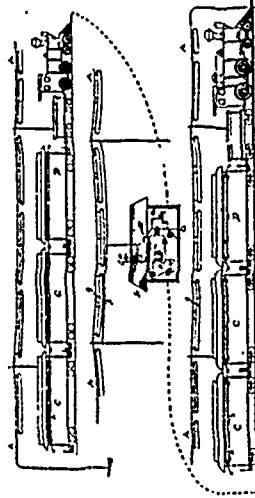
23995 Stephen's Saddle Bag.



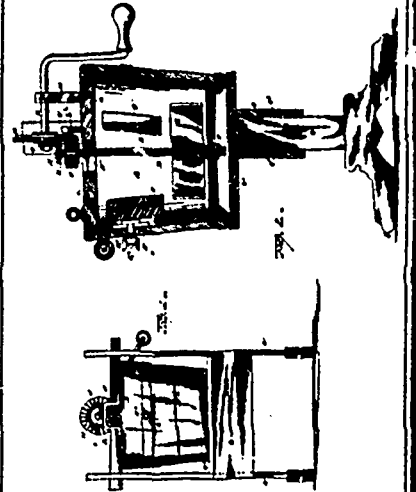
23996 Huehn's Axle for Carriages, Wagons, Buggies and other Vehicles.



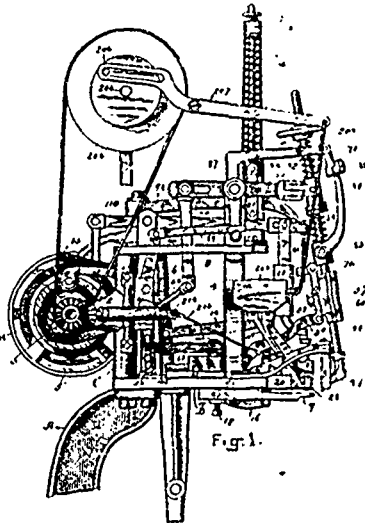
23997 Edison's Railway Signalling Apparatus.



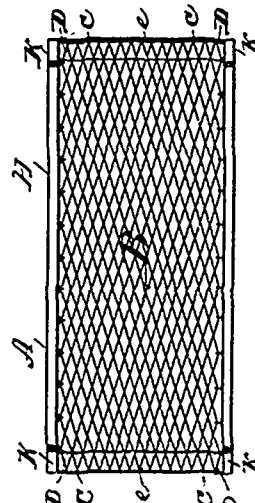
23998 Edison and Gilleland's System of Railway Signalling.



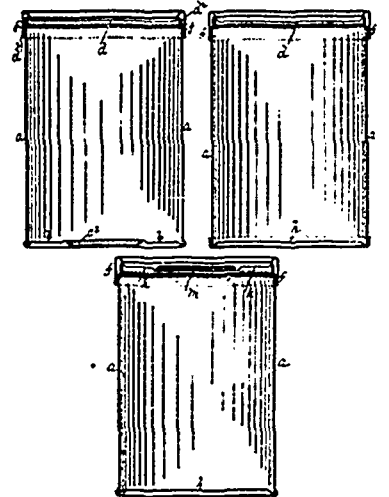
23999 Bunco's Churn.



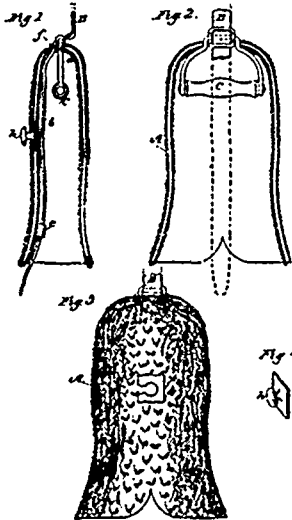
24000 Matzinger's Lasting Machine.



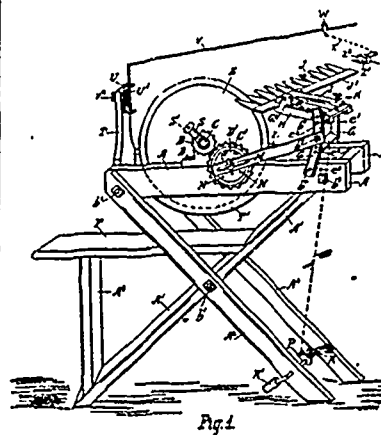
24001 Springer's Woven or Knitted Cord Furniture.



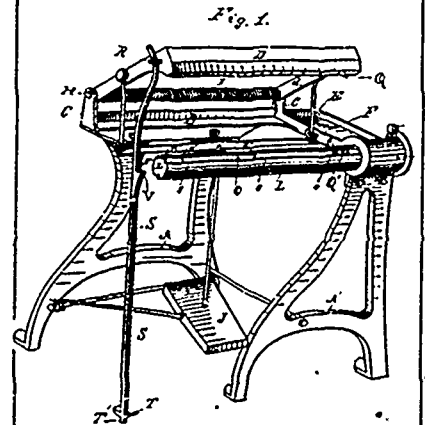
24002 Williamson's Metallic Box.



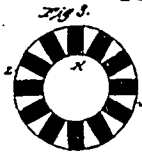
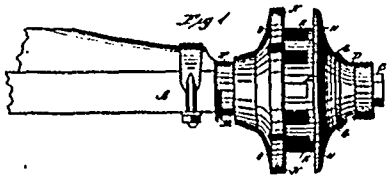
24003 Lowther's Driving Apparatus.



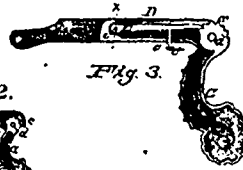
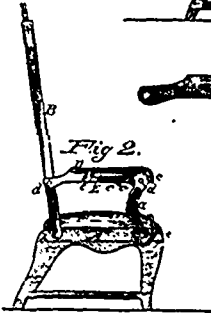
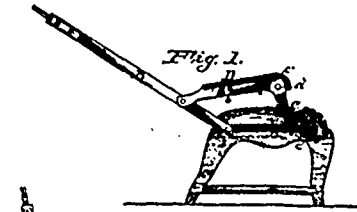
24004 Ross' Beaver and Mower Knife Sharpener.



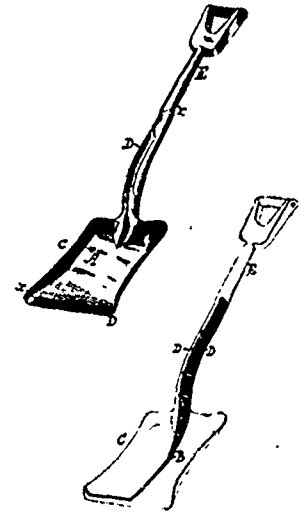
24005 Birch's Grooving and Seam-Setting down Machine.



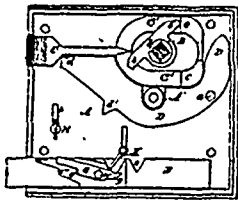
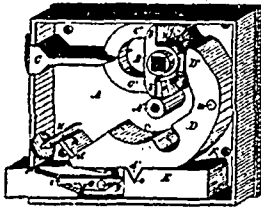
24006 French & Maltby's Wheel Hub.



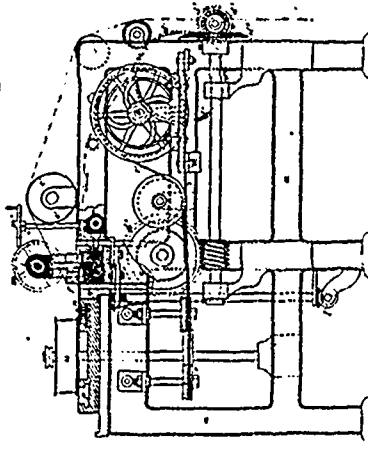
24007 Mead's Reclining Chair.



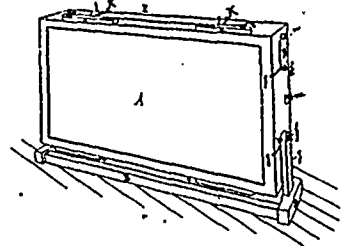
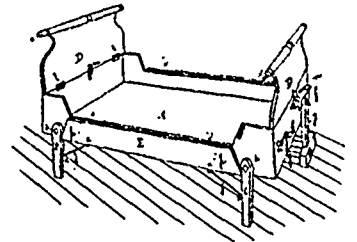
24008 Myers' Shovel, Spade and Scoop.



24009 Ames' Lock.



24010 Farran's Apparatus for Cutting or Covering the Pile of Piled Fabrics.



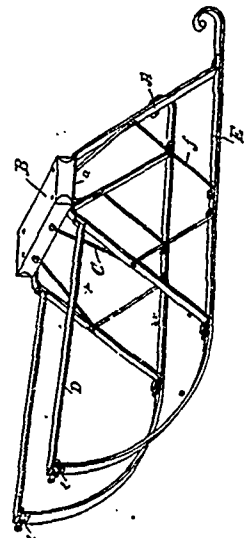
24011 Wilkin's Bedsteads.



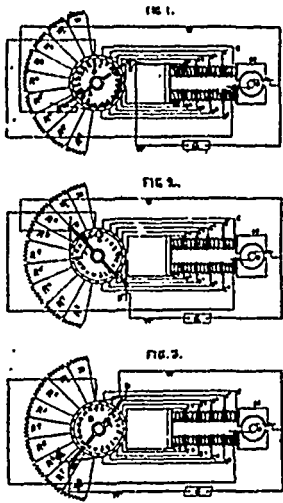
24013 Hamell's Vehicle Running Gear.



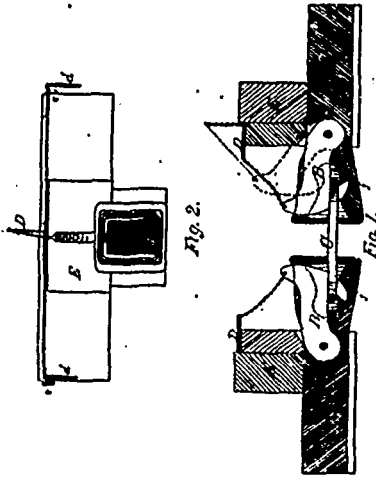
24014 Armstrong's Buggy and Carriage Gear.



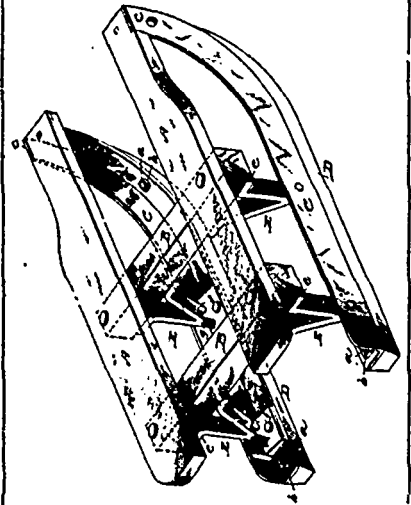
24015 Armstrong's Bob Sleigh.



24016 Thomson's Electro-Magnetic Motor.



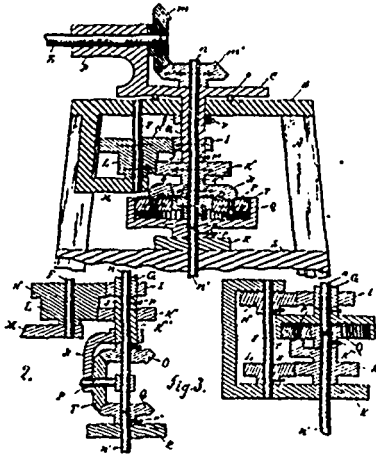
24017 Galloway's Railway Car-Coupler.



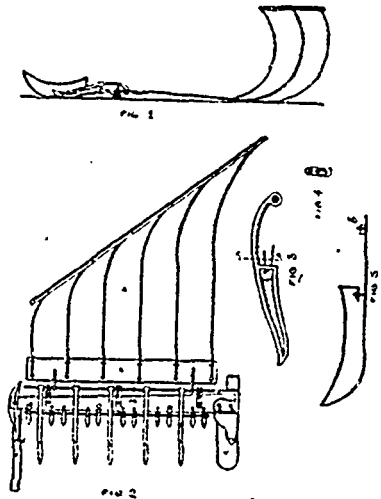
24018 Dwight's Sled.



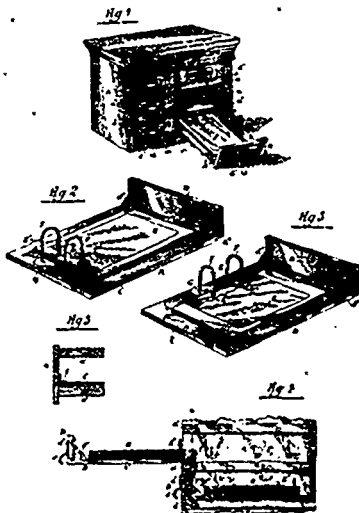
24020 Short & Nesmith's Electric Railway.



24021 Pattison's Windmill.



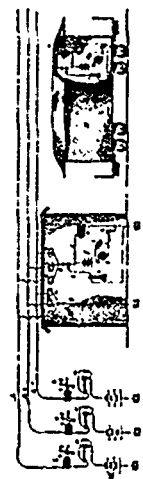
24022 Fox's Machine for Harvesting Pease.



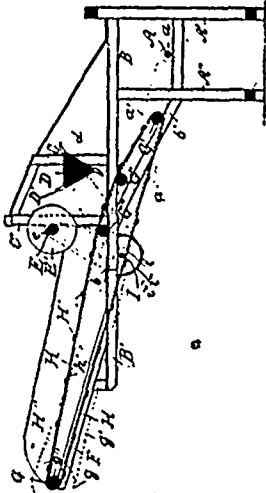
24023 Schlitch's Filing Cabinet for Papers.



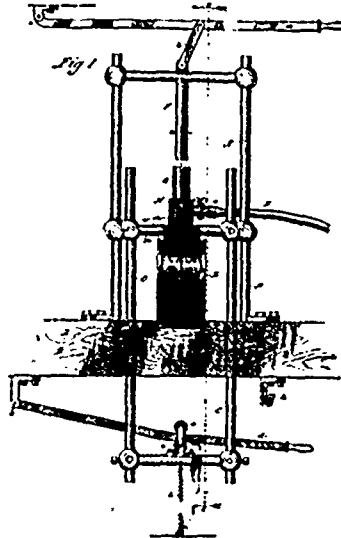
24024 Edison and Gilliland's System of Railway Signalling.



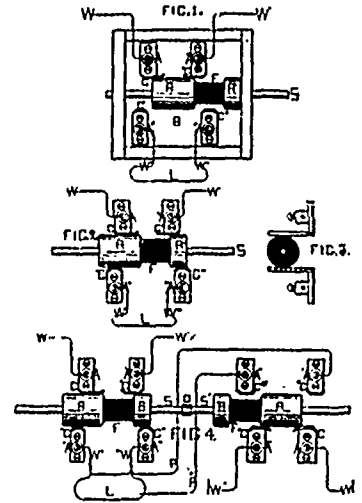
24025 Edison and Gilliland's System of Railway Signalling.



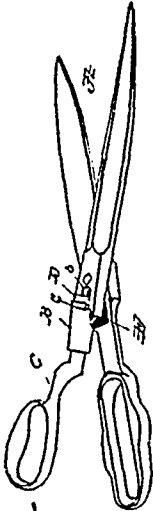
24026 Sandford's Feeder and Hand Cutter for Thrashing Machine.



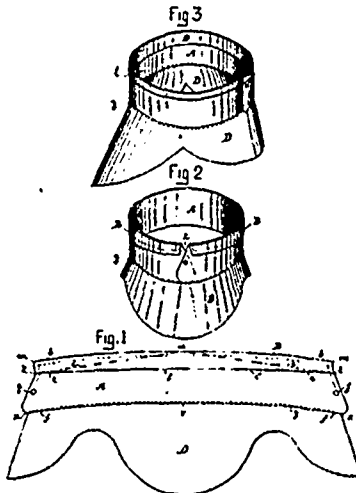
24027 Balder's Apparatus for Preserving Meats, Fish, Fruits and Vegetables.



24028 Thomson's Electrical Switch.



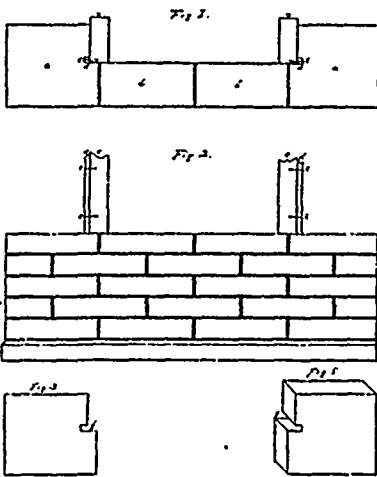
24029 Starks' Shears and Scissors.



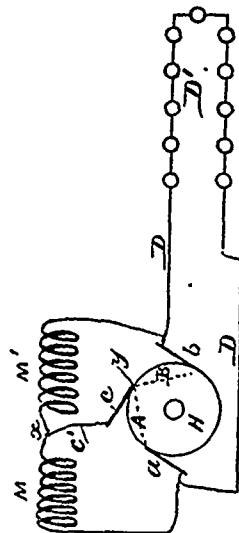
24030 March's Collar.



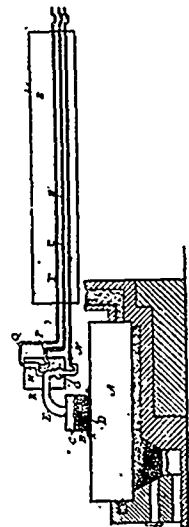
24031 Kizer's Nail Extractor.



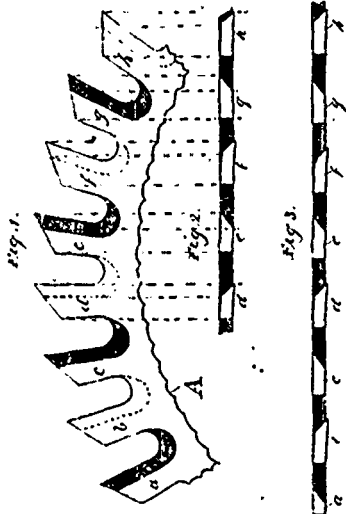
24032 Ellis' Bricks for Veneering Frame Houses and other Wooden Buildings.



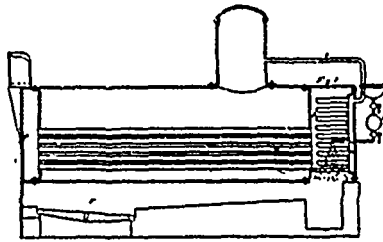
24033 Tesla's Dynamo Electric Machine.



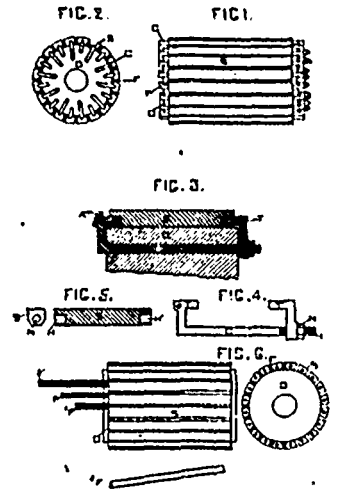
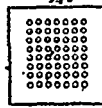
24034 Frasch's Distillation of Hydro-carbon Oil.



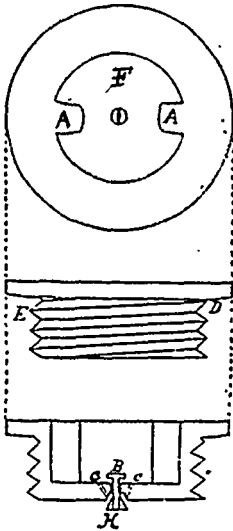
24035 O'Loughlin's Construction of the Teeth of Cross-Cut Saws.



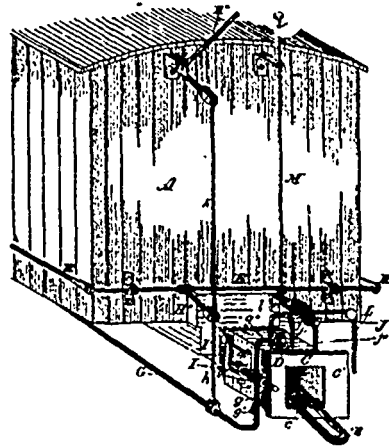
24038 Vincent's Steam Generator.



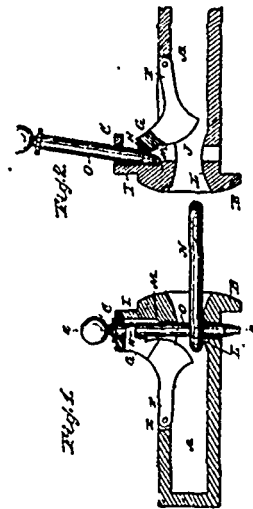
24037 Mohr's Commutator for Electro Magnetic Motors.



24038 Wynne's Metal Bung for Barrels.



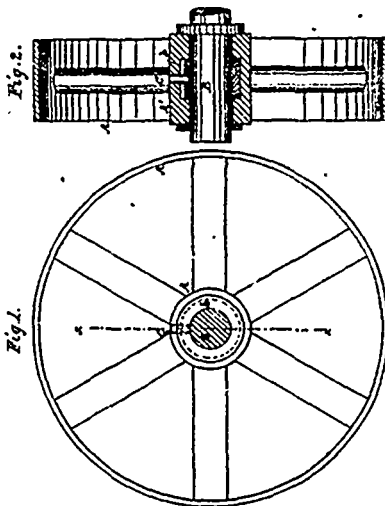
24039 Michaud's Car-Coupling.



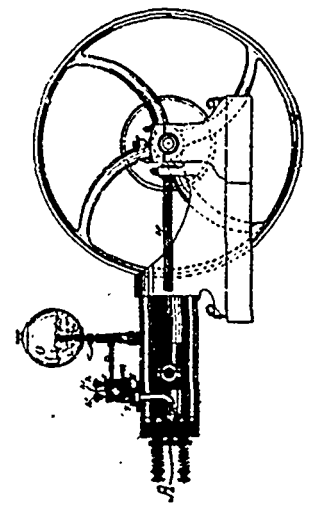
24040 Keeler's Car-Coupling.



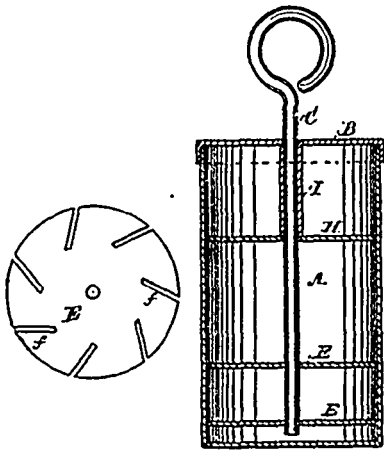
24041 Yates' Force Pump for forcing fluids long distances, extinguishing fires and other purposes.



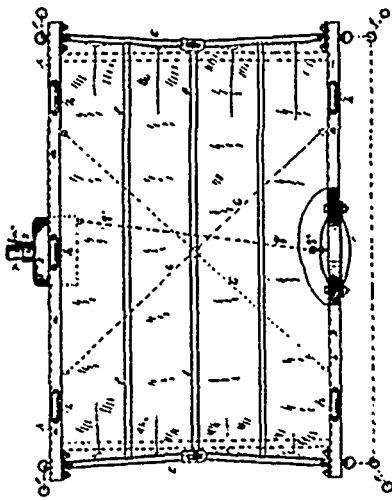
24042 Spiel's Petroleum and Gas Engine.



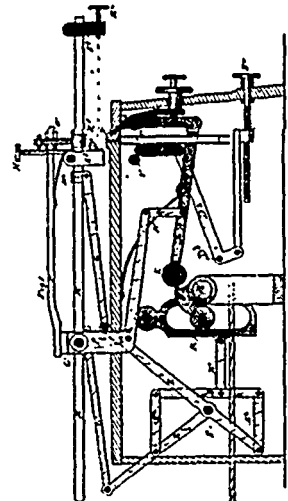
24043 Daniell's Device for Lubricating Wheels and Pulleys.



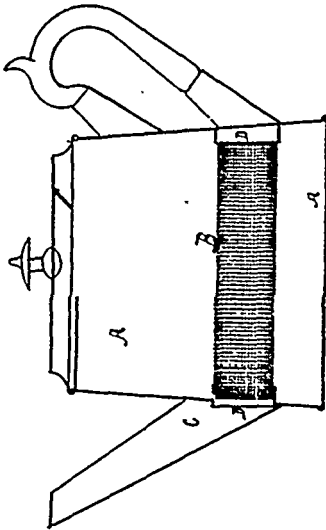
24044 McNichol & Walsh's Apparatus for Mixing and Disintegrating Fluid and Semi-fluid Substances.



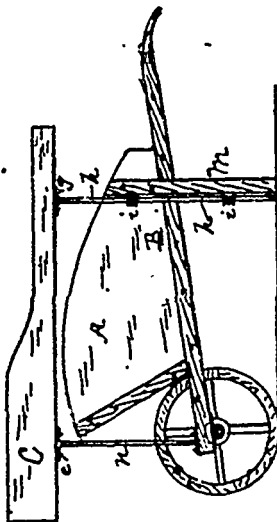
24045 Dodman's Apparatus for Raising Sunken Ships and other Submerged bodies.



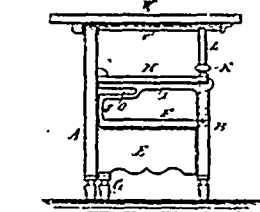
24046 Anderson's Automatic Saw-Setting and Sharpening Machine.



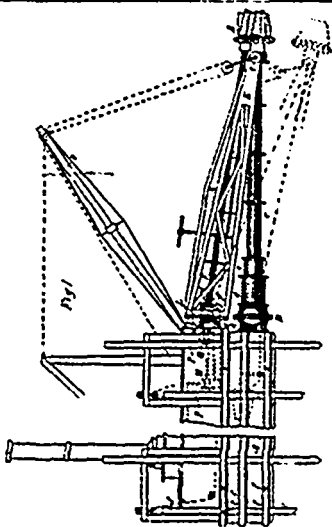
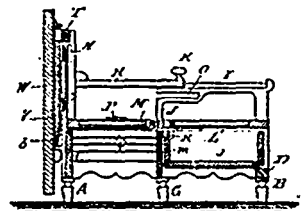
24047 Boyd's Tea and Coffee Pot.



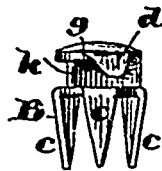
24048 Sweto's Barrows.



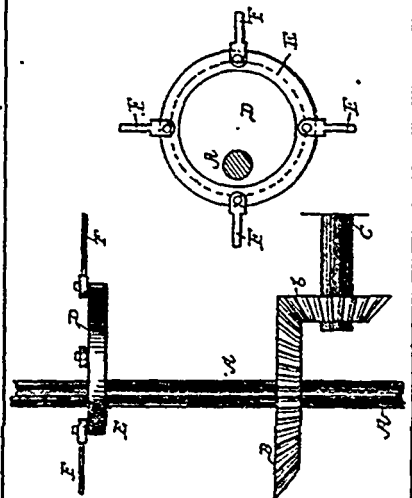
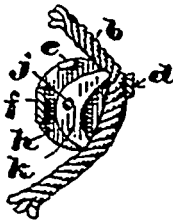
24049 Farrell's Combination Table, Settee, Chair and Bedstead.



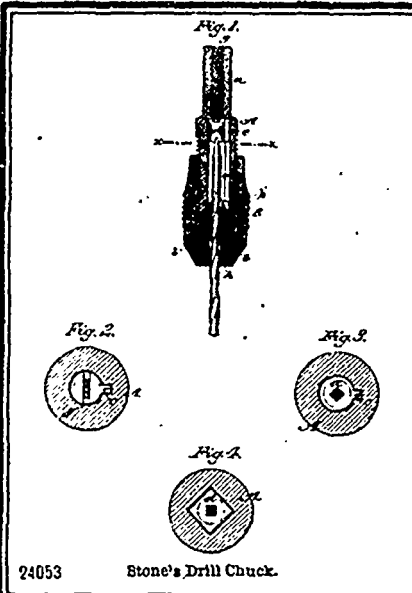
24050 Bolles & Williams' Dredger.



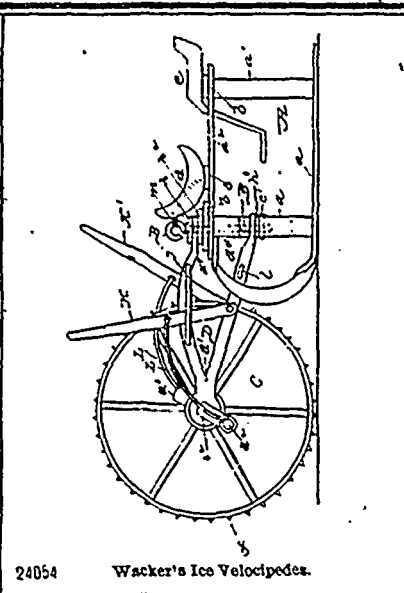
24051 Comins' Lacing Cord Fastening Devices for Boots, shoes and other articles.



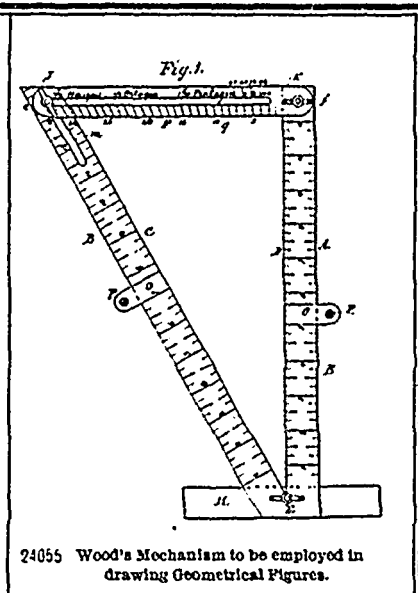
24052 Allen's Devices for Converting Motion in Oil Pumping Apparatus.



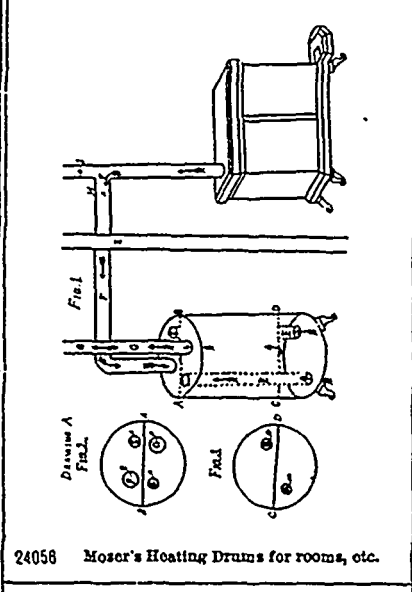
24053 Stone's Drill Chuck.



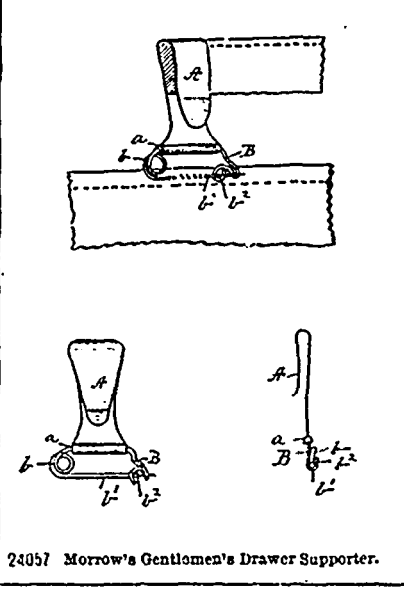
24054 Wacker's Ice Velocipede.



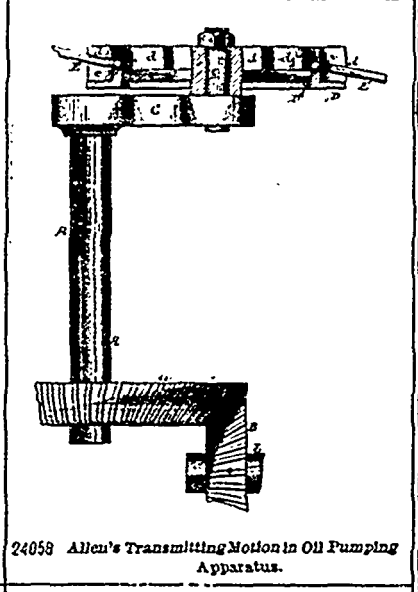
24055 Wood's Mechanism to be employed in drawing Geometrical Figures.



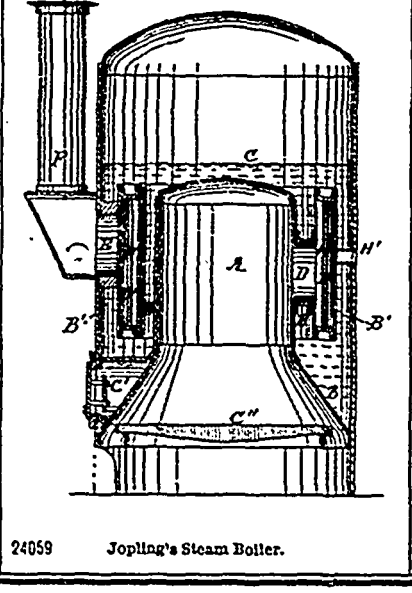
24056 Moser's Heating Drums for rooms, etc.



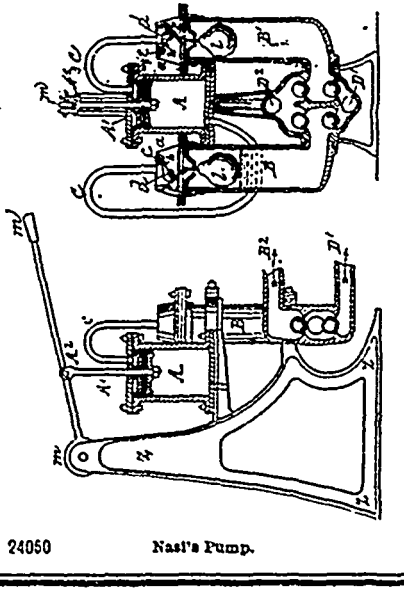
24057 Morrow's Gentlemen's Drawer Supporter.



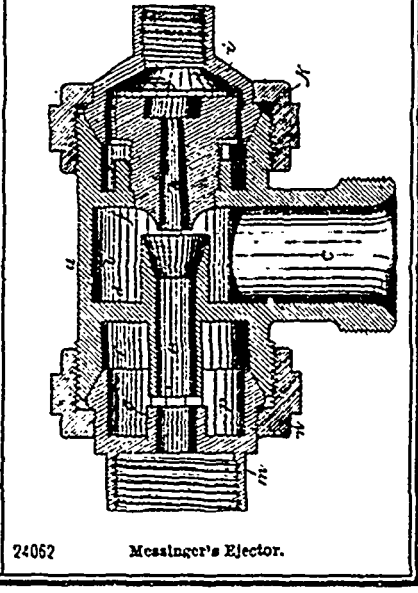
24058 Allen's Transmitting Motion in Oil Pumping Apparatus.



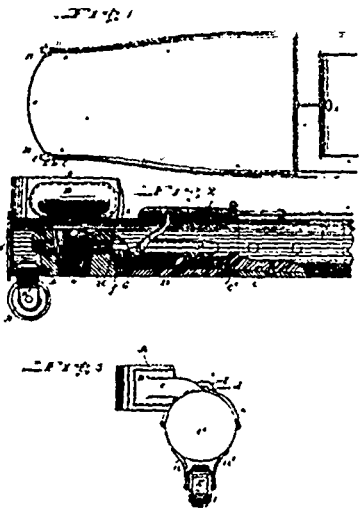
24059 Jopling's Steam Boiler.



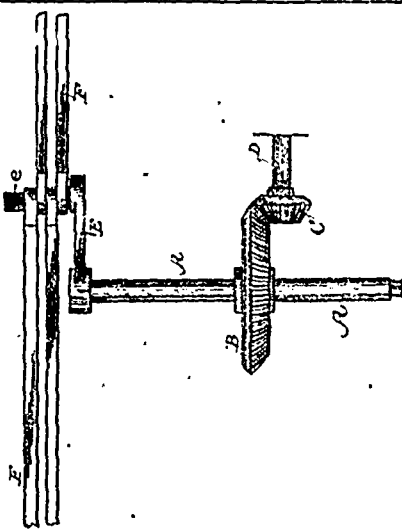
24060 Nasi's Pump.



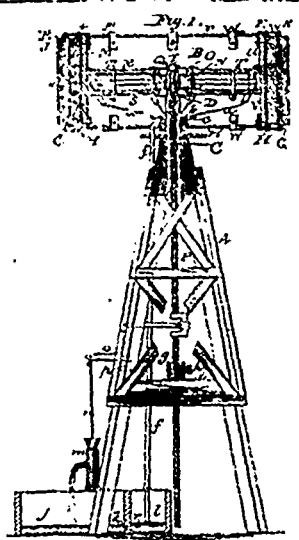
24062 Messinger's Ejector.



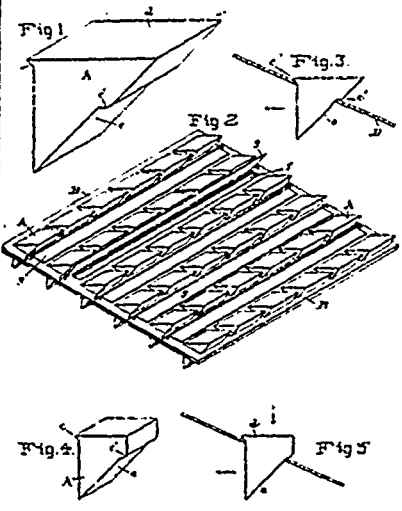
24063 Engelberg's Horse Detaching Devices for Vehicles.



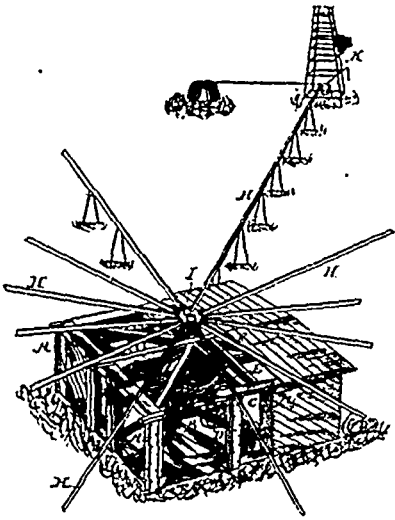
24064 Allen's Converting Motion in Oil Pumping Apparatus.



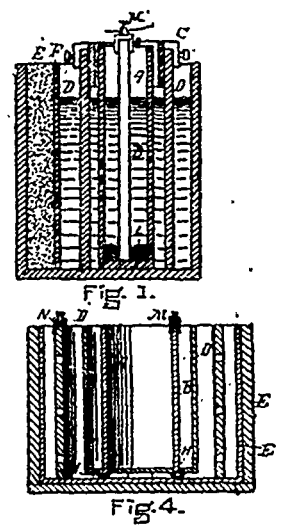
24065 Albright's Windmill.



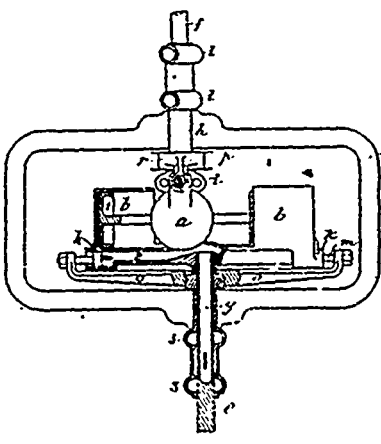
24066 Melke's Incidence Window or Vault light.



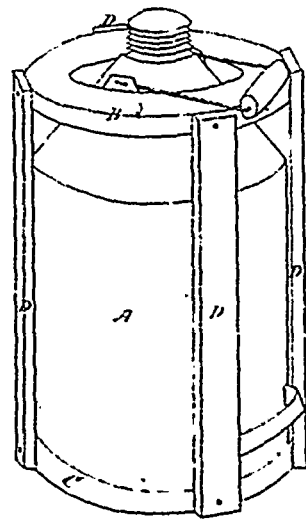
24067 Allen's Devices for Transmitting Motion in Oil Pumping Apparatus.



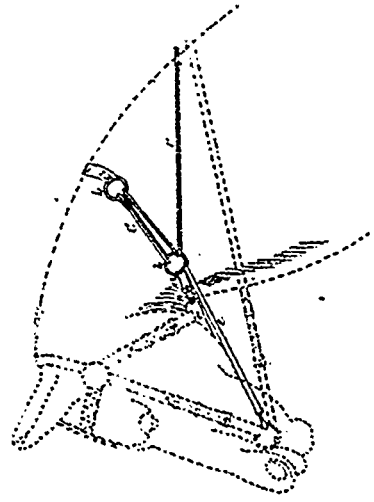
24068 Kauffer's Electric Battery.



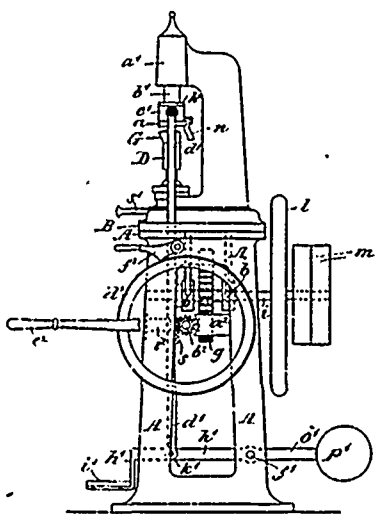
24069 Poore, Ingray & Latham's Fluid Pressure Motor.



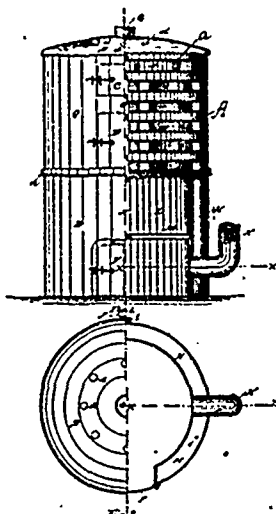
24070 Pratt's Shipping Cased Cans.



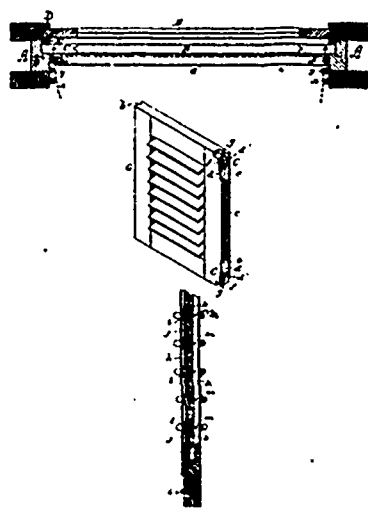
24071 Walley's Controlling Apparatus for Horses.



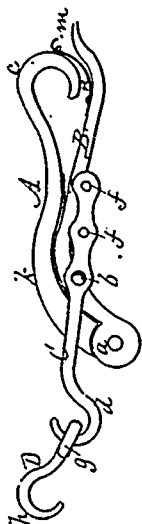
24073 Cote's Heel Nailing Machine.



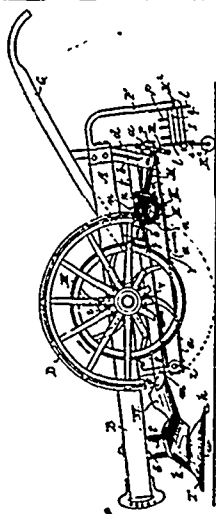
24074 Bellavanco's Hot Water Furnace.



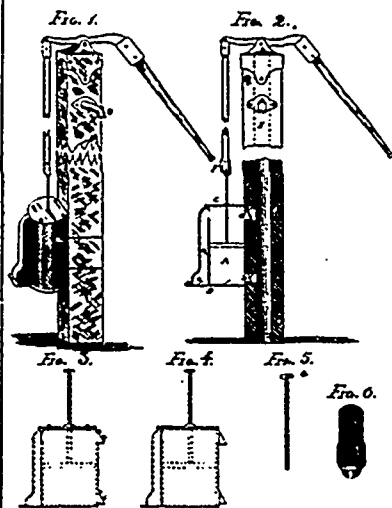
24075 Stevens' Blind Shutter or Screen.



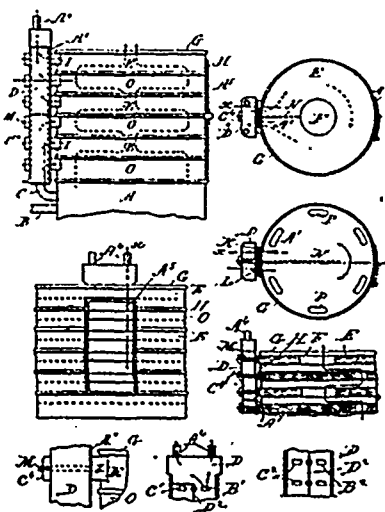
24076 Thilon's Hame Fastener.



24077 Meller's Potato Digger.



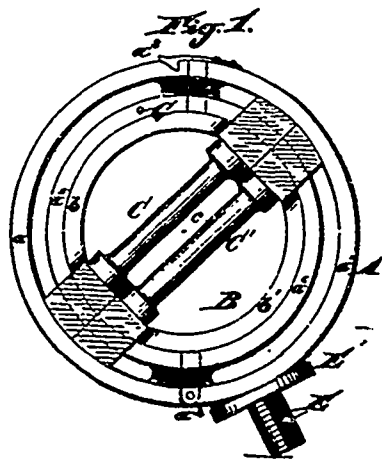
24078 McManus & O'Doherty's Force Pump.



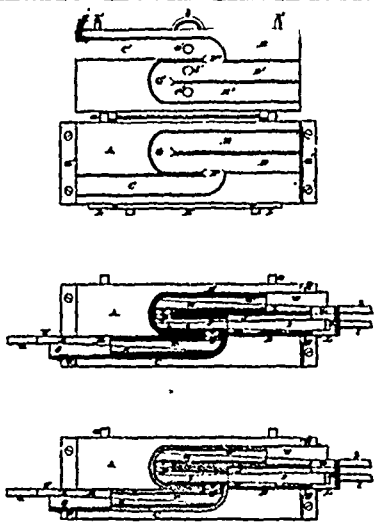
24079 Spence's Water Heater.



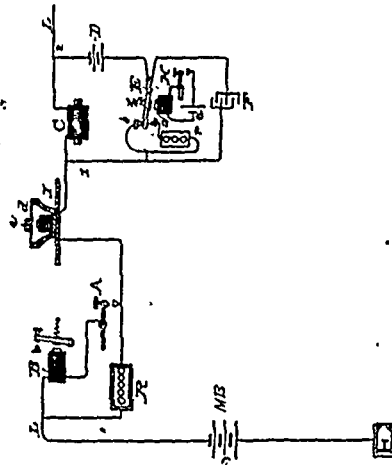
24081 Burrows' Pen Holder.



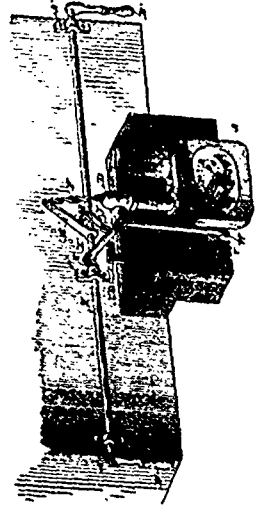
24082 Smith's Harness Ring.



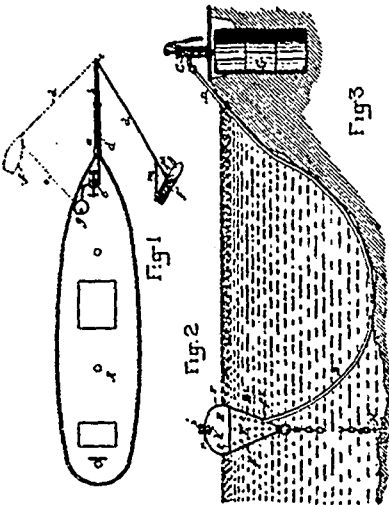
24083 Mardock's Mould for Casting Stench Traps.



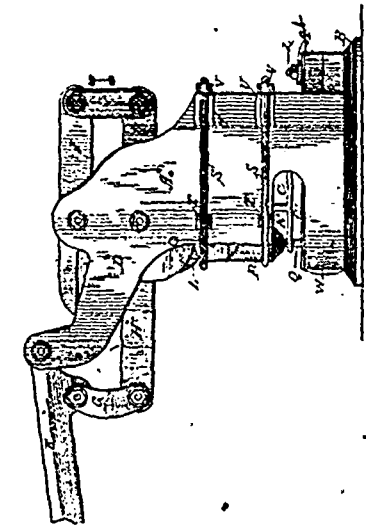
24084 Edison's Telegraphy.



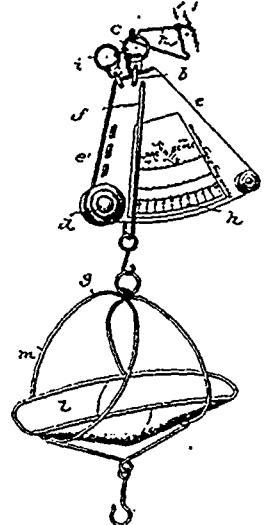
24085 McKeen & Gainer's Car-Coupler.



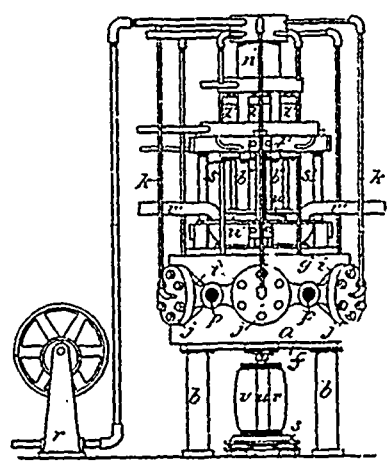
24086 Montague's Apparatus for Distributing Oil on Troubled Seas.



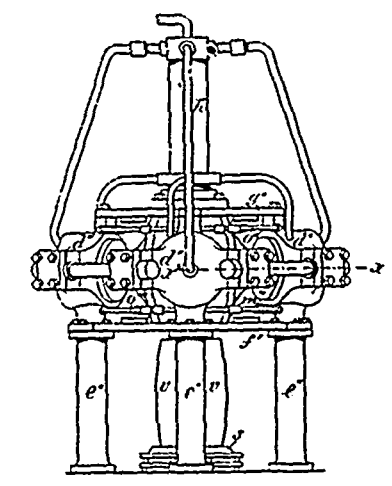
24087 McDonald's Metal Workers' Punch and Shears.



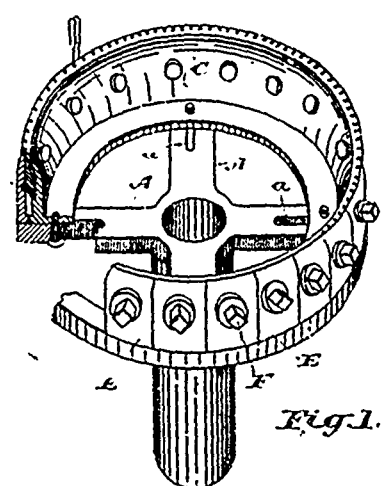
24088 Withrell's Weighing Apparatus.



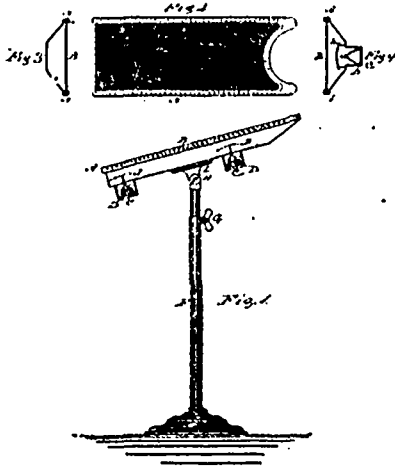
24089 Hotchkiss' Manufacture of Barrel Bodies from Pulp and the like.



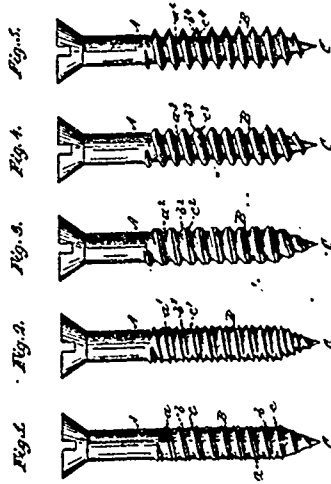
24090 Hotchkiss' Manufacture of Machines for Drying and Pressing Pulp Barrel Bodies and the like.



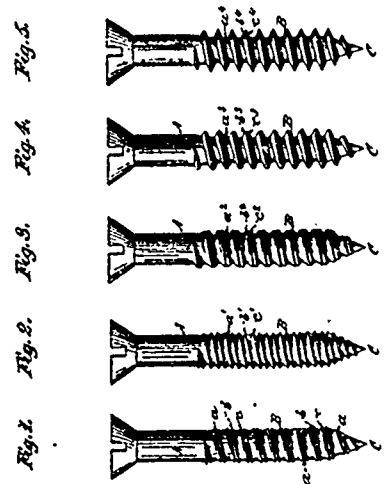
24091 Davidson & Clay's Circular Knitting Machine.



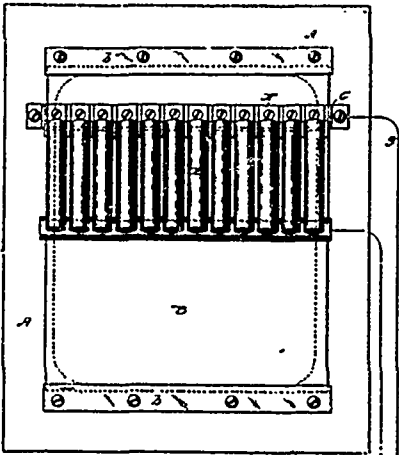
24092 Vent's Machine for Drying Ladies' Hair.



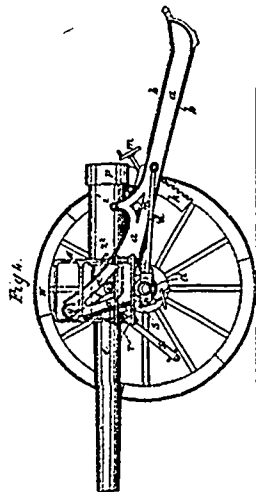
24093 Harvey's Gimlet-Pointed Rolled Wood Screws.



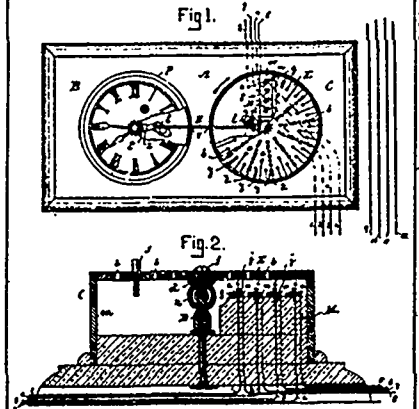
24094 Harvey's Method of Manufacturing Rolled Wood Screws.



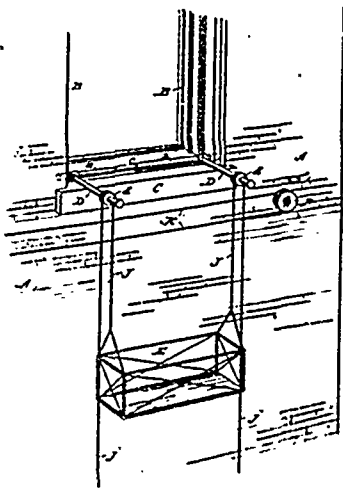
24095 Turnbull's Telephonic Transmitter.



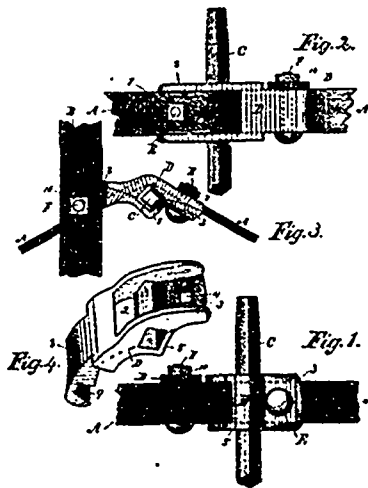
24096 Malet's Construction of Gun Carriage.



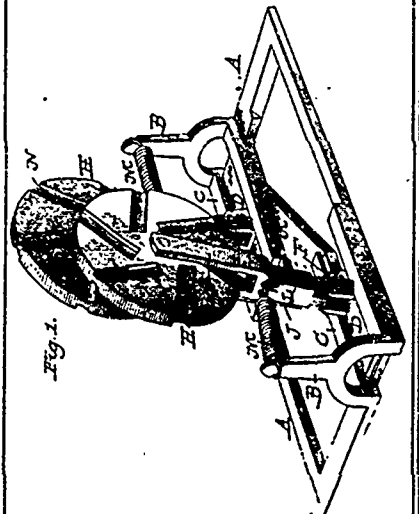
24097 Barnes' Electric Alarm.



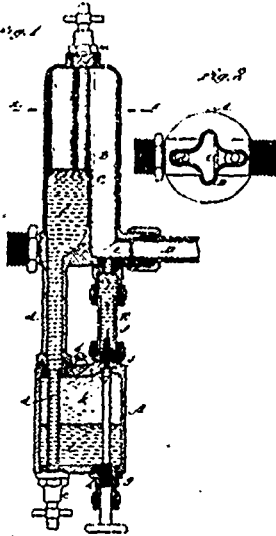
24098 Fogarty's Fire Escape.



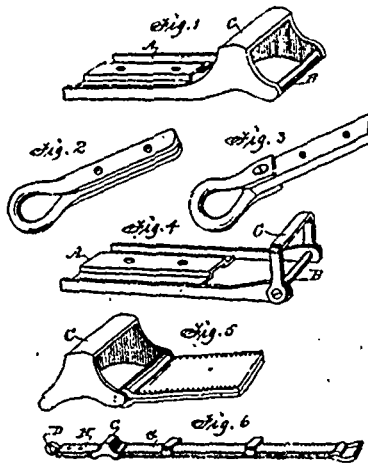
24099 Evans' Harrow Cultivator.



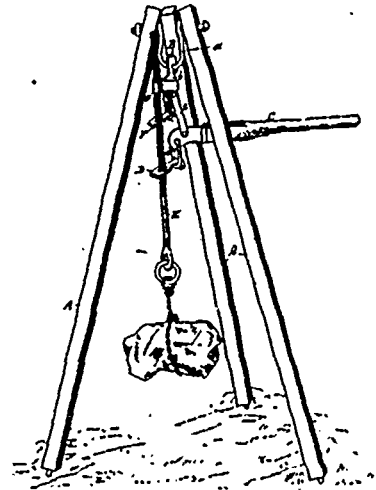
24100 Morison & Bertrand's Car Axle Lubricator.



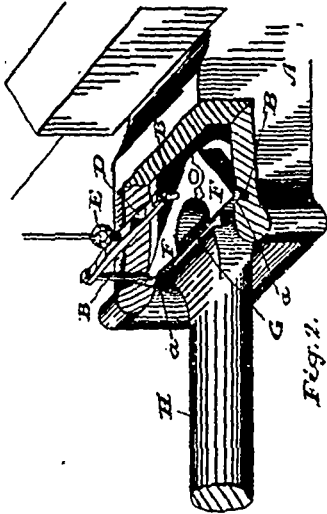
24101 Couze's Automatic Lubricator for Steam Engines.



24102 Schwaner's Harness Hame Tag.



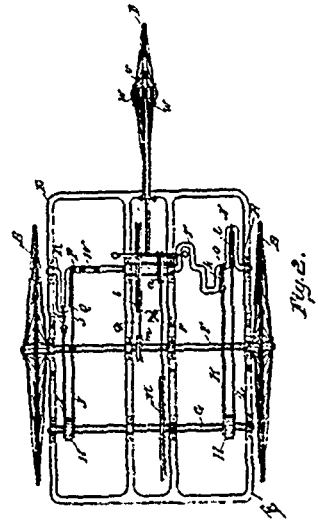
24103 Thérien's Lifting Implement.



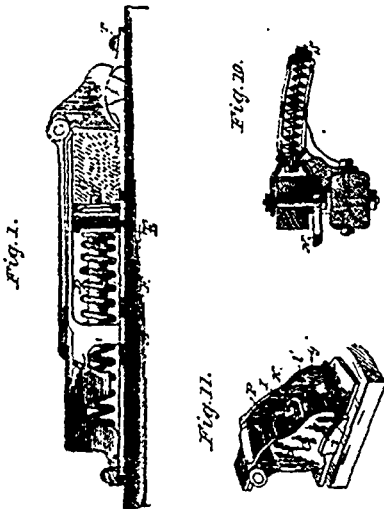
24104 Davies' Self-acting Car-Coupler.



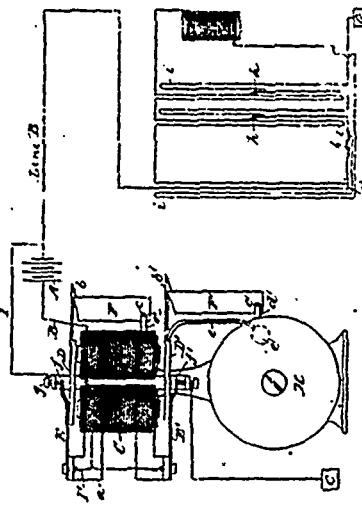
24105 Gallinger's Rope Cutter.



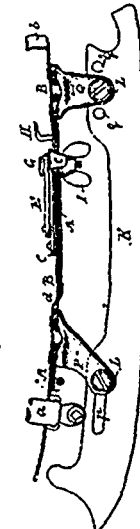
24106 Richard's Tricycle.



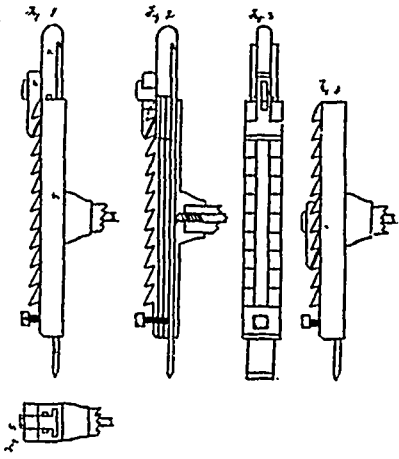
24107 Currey's Draft Equalizer.



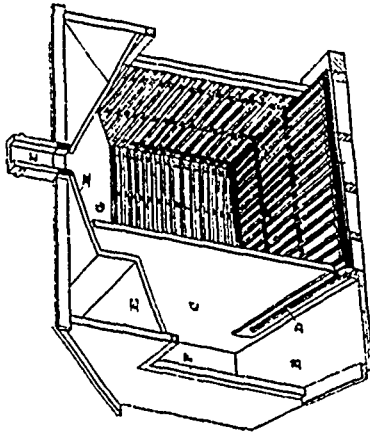
24108 Stern's Burglar Alarm System.



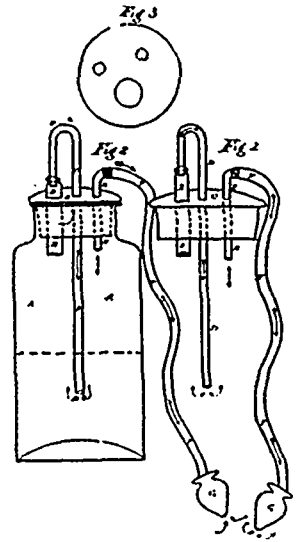
24109 Raymond's Extension Ice Skate.



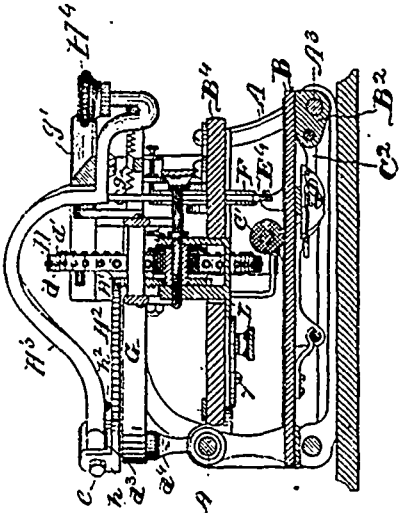
24111 Gauthier's Mill Stone Reodging Hammer.



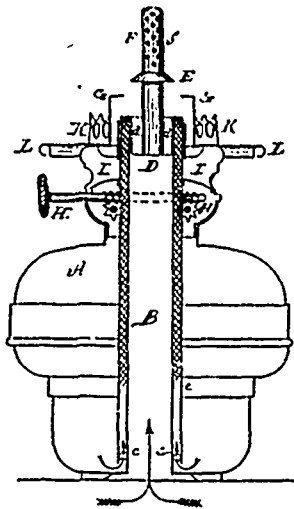
24112 Alexander's Ice House and Cooling Chamber.



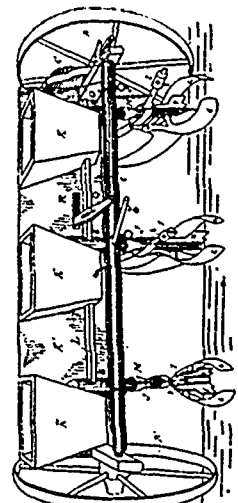
24113 Butcher's Inhaler.



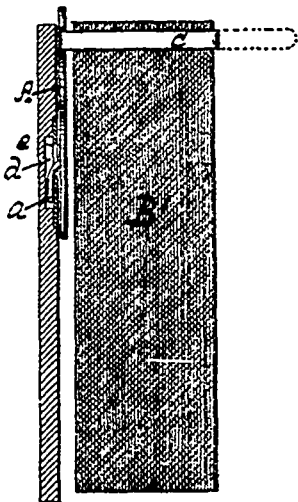
24114 Kempster's Type Writer.



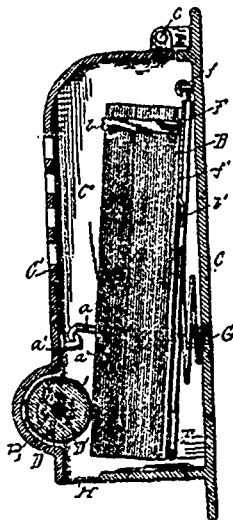
24115 Söpulchre's Lamp for Burning Petroleum and light Oils parts of which are also applicable to Gas Burners.



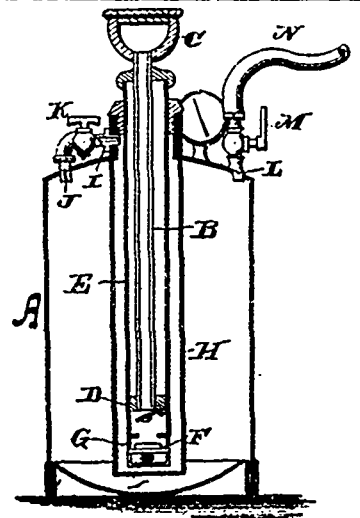
24116 Pelletier's Corn Planter.



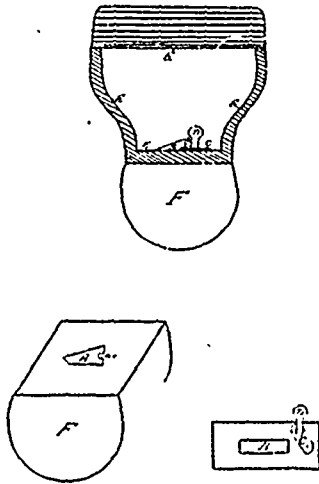
24117 Hoyt's Sanitary or Toilet Paper.



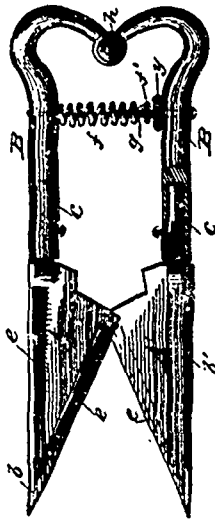
24118 Hoyt's Cabinet for Sanitary or Toilet Paper.



24119 Snyder's Beer Forcing Pump.



24120 Defisto's Iron for Glossing Shirt Bosoms, Cuffs and Collars.



24121 Lytle's Sheep Shears.



24122 Scott's Watch and Clock.

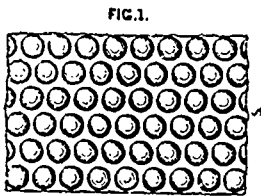


FIG. 1.

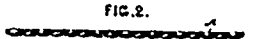


FIG. 2.

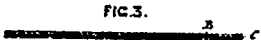


FIG. 3.



FIG. 4.

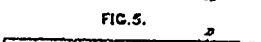
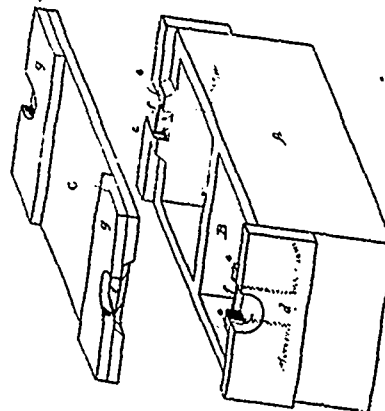


FIG. 5.

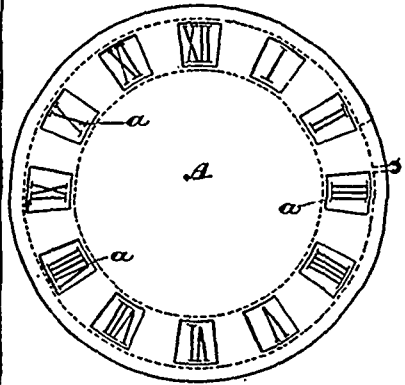


FIG. 6.

24123 Baker's Carpet Lining and Packing for Bottles and other Fragile articles.



24124 Emery's Egg-Packing Case and Method of Fastening the Cover on same.



24125 Colquhoun's Watch and Clock.

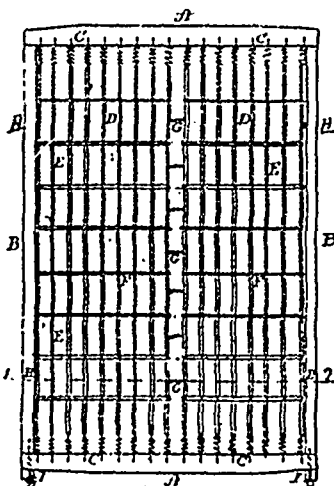
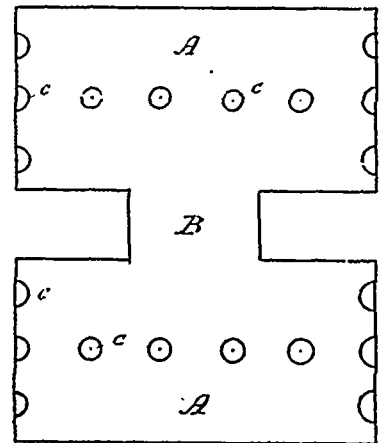


Fig. 1

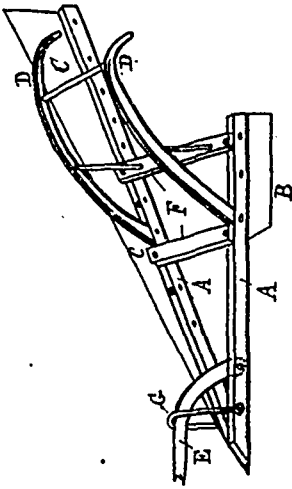
24126 Fowilton's Bed-Bottom.



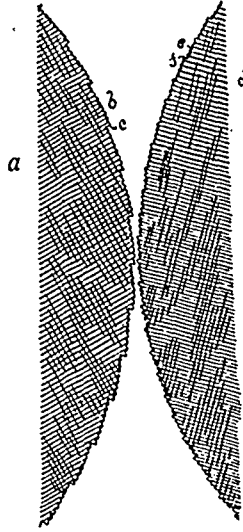
24127 Upham's Hat Sweat.



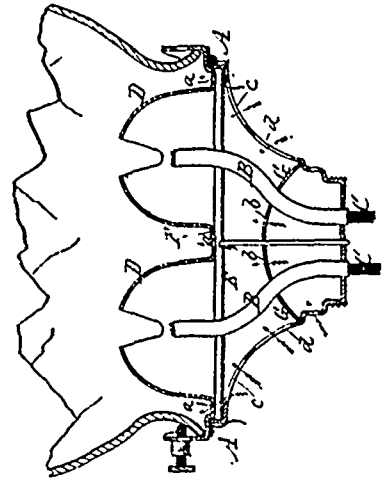
24128 McAllister's Brick.



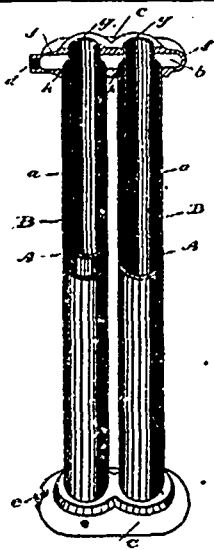
24129 Hyatt's Machine for Ditching.



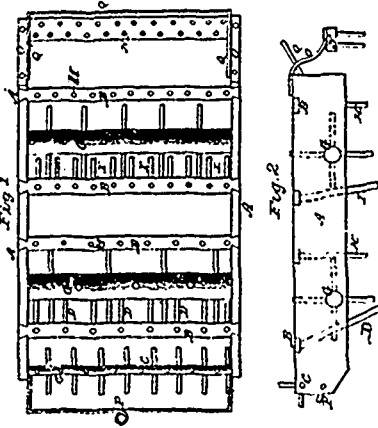
24130 Beall's Grinding Mill.



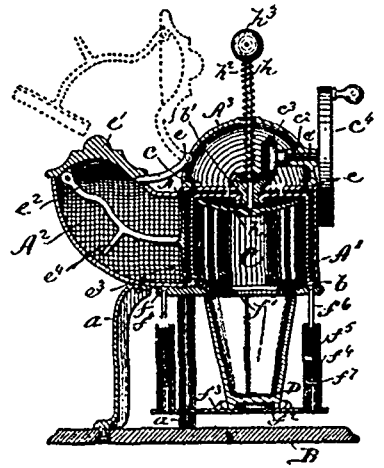
24131 Schaffer's Lamp Burner.



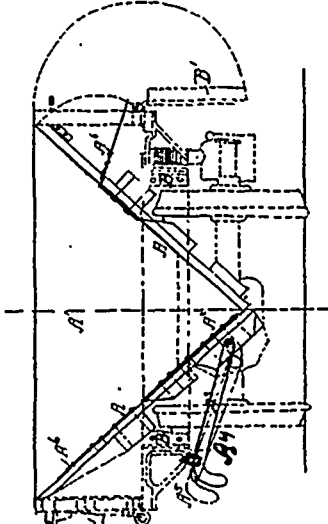
24132 King's Steam Radiator.



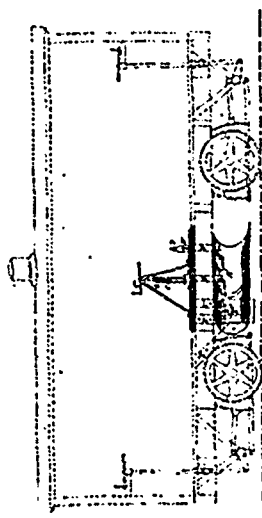
24133 Will's Harrow and Pulverizer.



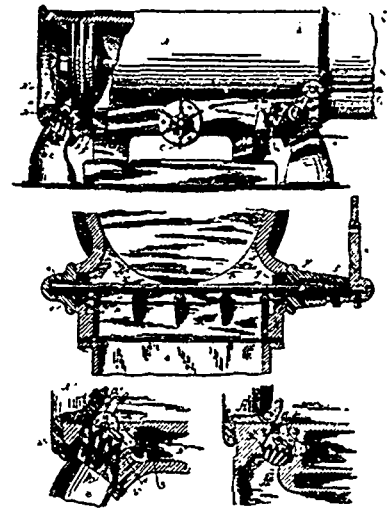
24134 Way's Machine for Shaving Ice.



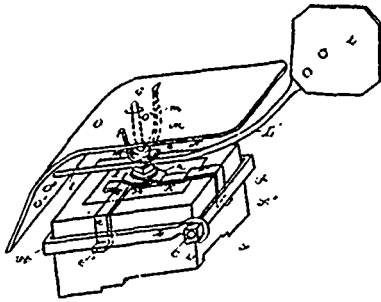
24135 Rodger's Self-emptying Hopper Waggon for Ballasting on Railways



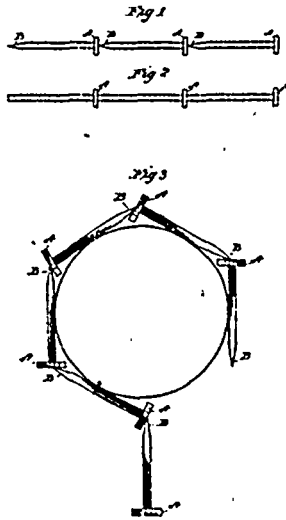
24136 Rodger's Plough for Spreading and Trimming Ballast on Railways



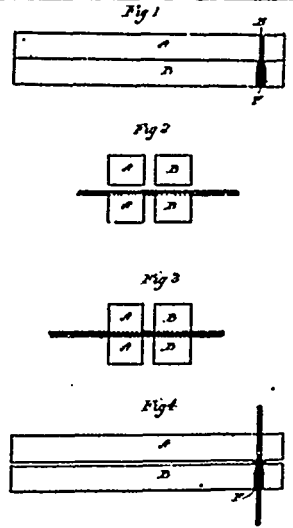
24137 Wheelock's Steam Engine



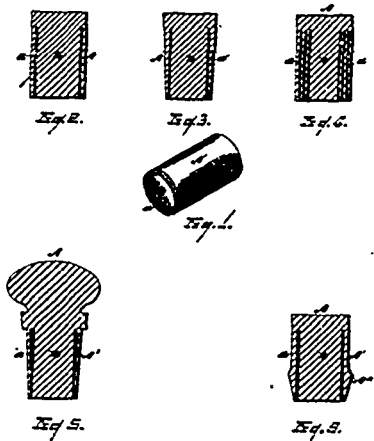
24138 Bailey's Chimney Protector.



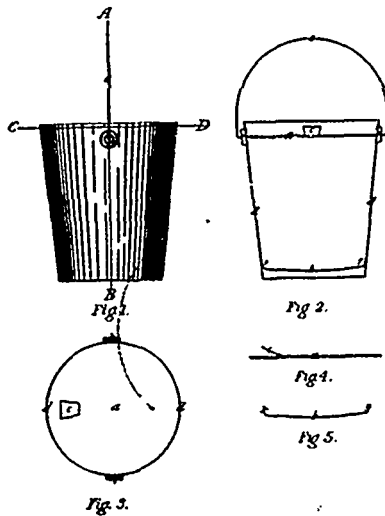
24139 Fowler's Continuous Nail Wire.



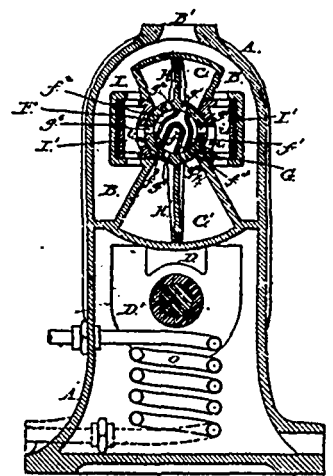
24140 Fowler's Dies for Making Nail Wire.



24141 Thayer's Stopper for Bottles, etc.



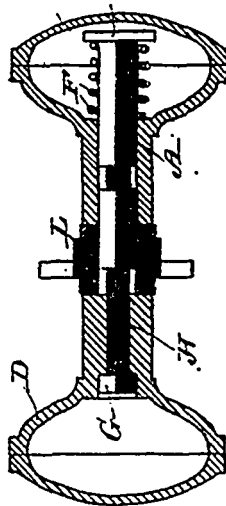
24142 Reld's Paper Pall.



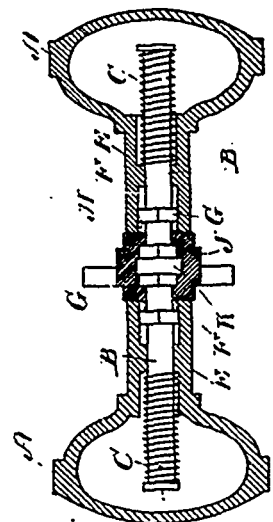
24143 Cris's Vibrating Engine.



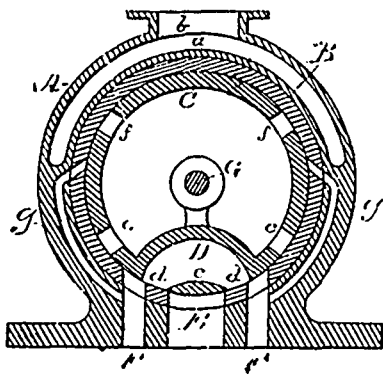
24144 Cox's Calendar.



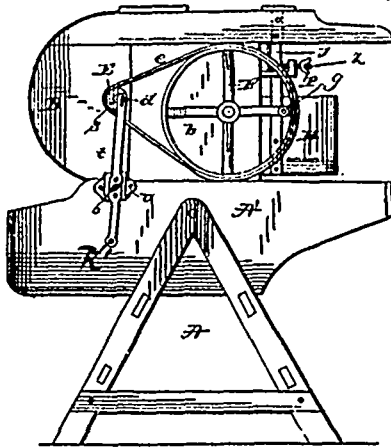
24145 Alvard's Knob Attachment.



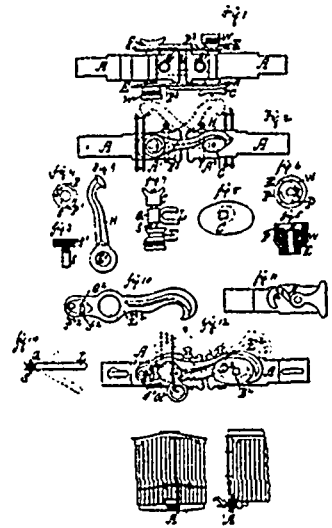
24146 Alvard's Knob Attachment.



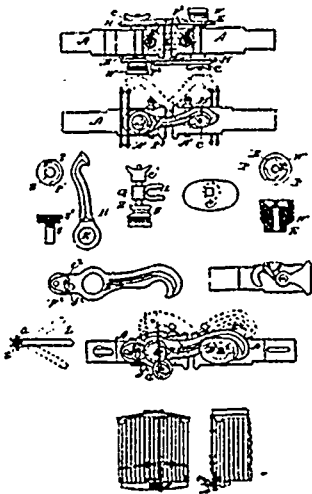
24147 Duthio's Oscillating Steam Valve.



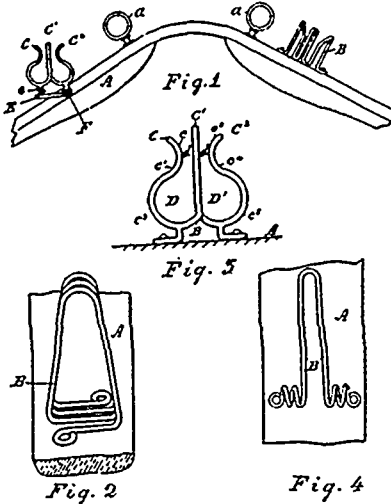
24148 Tate's Grain and Seed Separator and Grader.



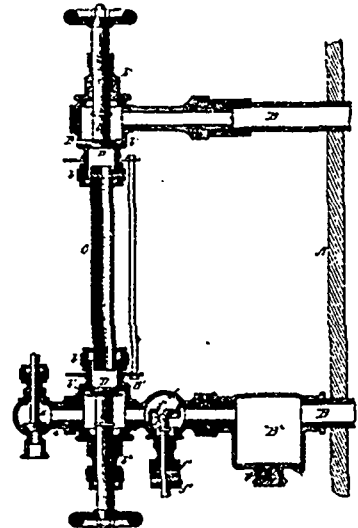
24149 Coup & McCurdy's Car-coupler.



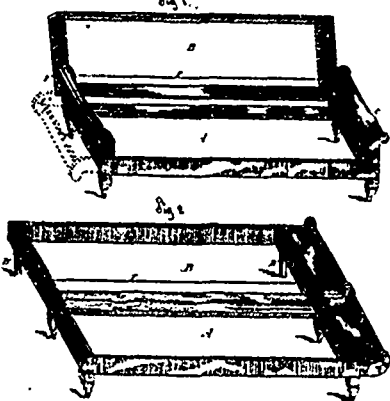
24150 Coup & McCurdy's Car-Coupler.



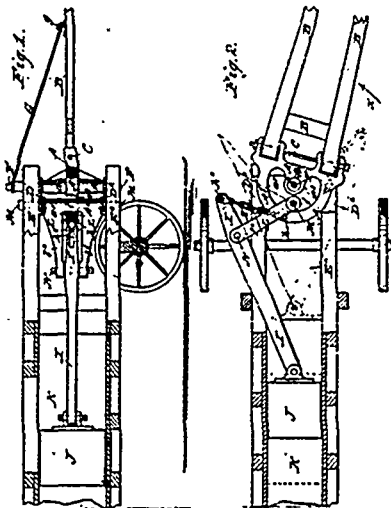
24151 Emry's Linc-Support for Harness.



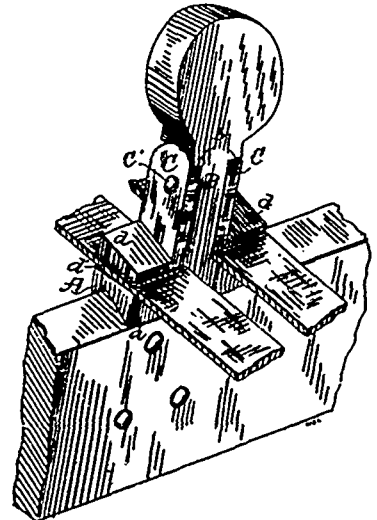
24152 Nelson & Landerholm's Steam and Water Valve.



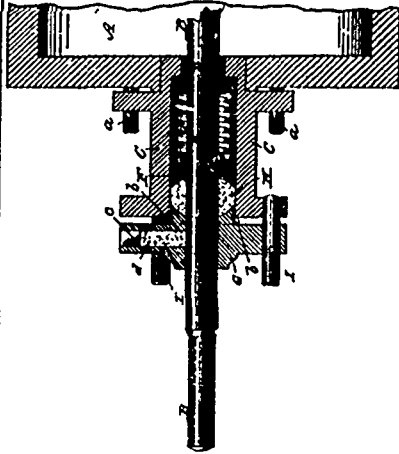
24153 Reid's Sofa Bed.



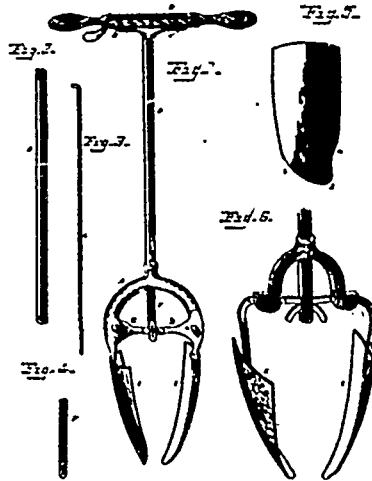
24154 Ertel's Baling Press.



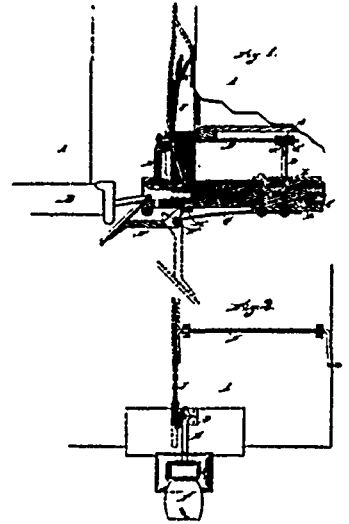
24155 Young's Eain-Holder.



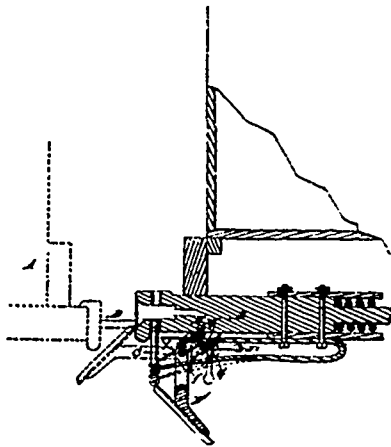
24156 Brownell's Packing for Valve Stems and Piston Rods.



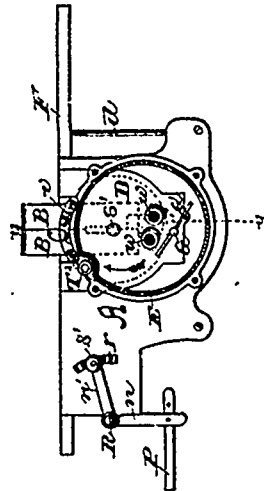
24157 Smith's Post Hole Auger.



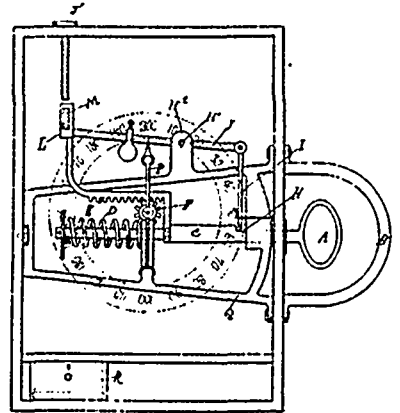
24158 Pettot & Noxon's Car Coupling.



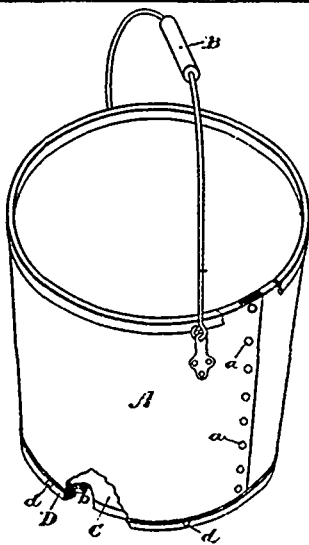
24159 Pettot & Noxon's Car-Coupling.



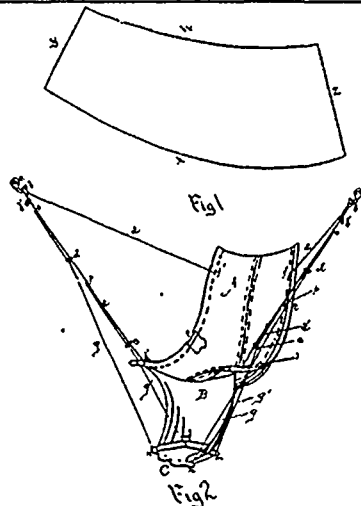
24160 Freeman's Broadcast Seed Sower.



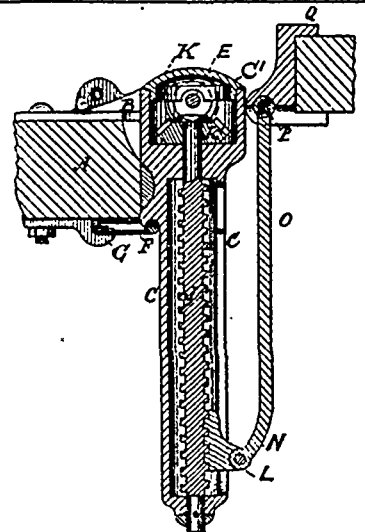
24161 Martel's Machine for Testing the Muscular Strength of the Hand and Arm.



24162 Brake's Fall, Tub, etc.

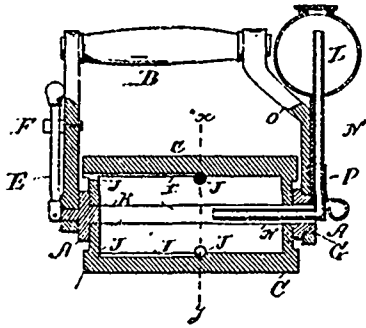


24163 Hook's Hammock Chair.

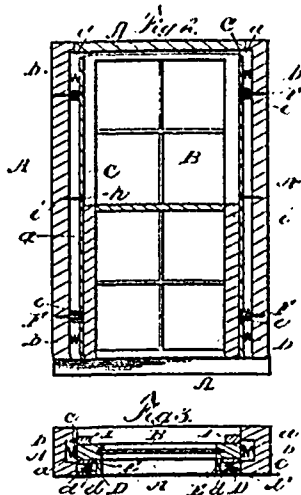


24164 Sargeant's Tipping and Balancing Attachment for Carts and other Vehicles.

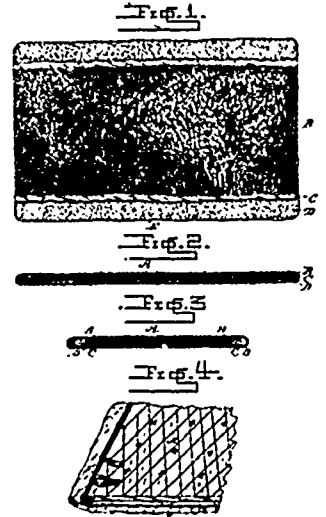
Fig. 4



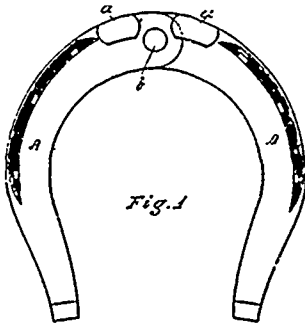
24165 Smaltig's Sad Iron.



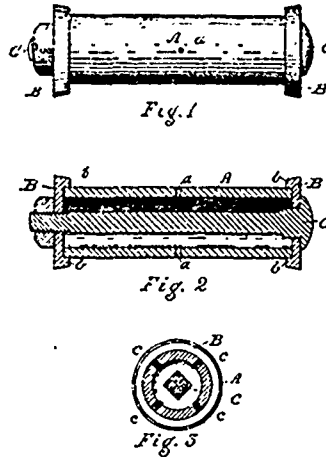
24166 Wilkinson's Sash Holder.



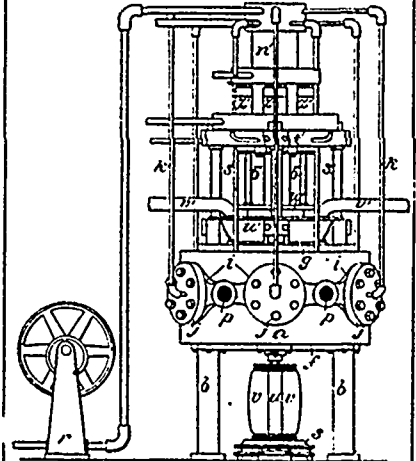
24167 Nelson's Construction of Mattresses.



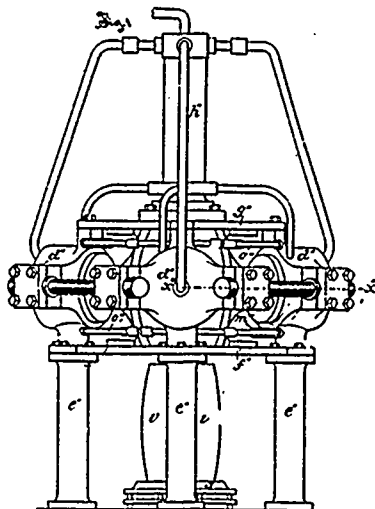
24168 Gordon's Horse Shoe.



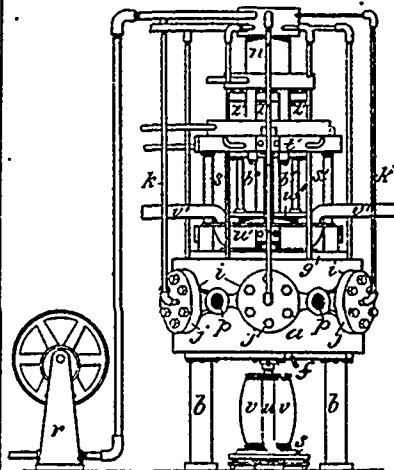
24169 Browne's Self-Lubricating Pulley Pin.



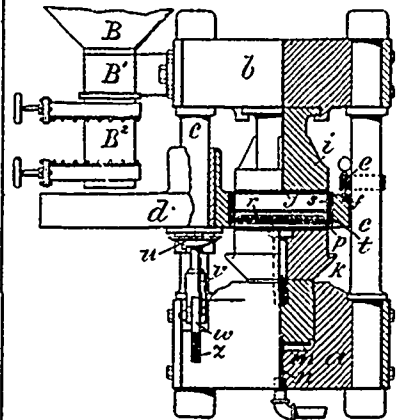
24170 Hotchkiss' Manufacture of Barrel-bodies and the like.



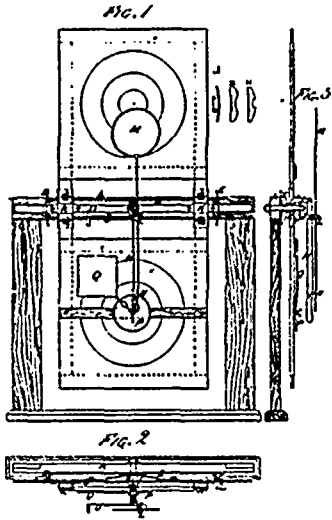
24171 Mason's Machine for Drying and Pressing Pulp Barrel-bodies.



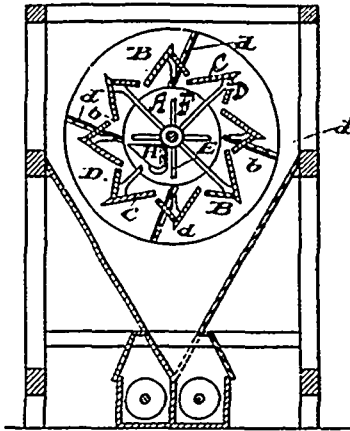
24172 Mason's Manufacture of Barrel-bodies from Pulp.



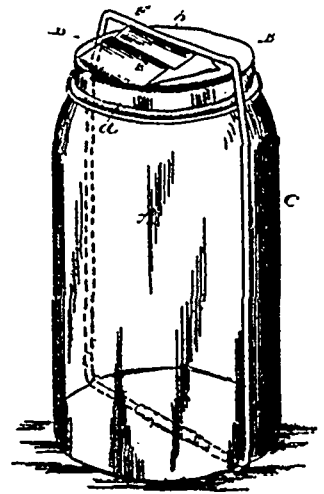
24173 Mason's Making Barrel-heads from Pulp.



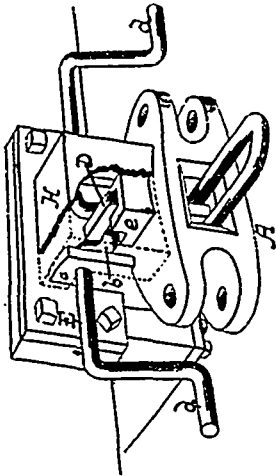
24174 Winsor's Target for Rifle Shooting.



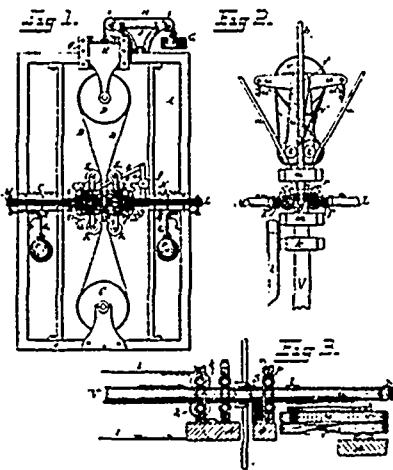
24175 Dobson's Machine for Dressing or Bolting Flour.



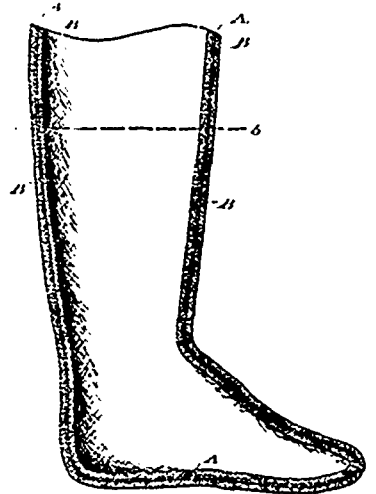
24176 Gilberd's Fruit Jar Cover.



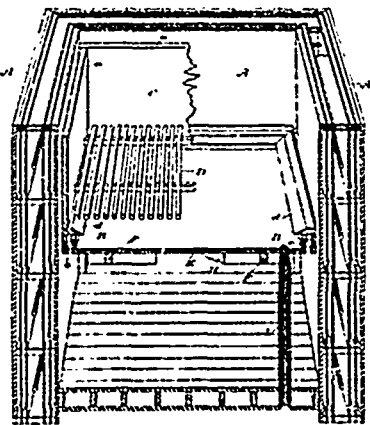
24177 Merrill's Car-Coupler.



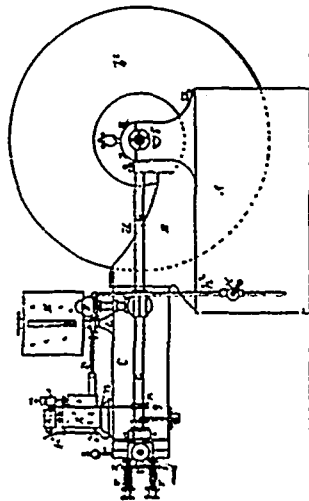
24178 Maxwell's Band Saw Mill



24179 Ross' Manufacture of Woolen or Felt Stockings, Socks, Slippers, Boots or Shoes.



24180 Hovey & Hannah's Refrigerator.



24181 Lancaster's Petroleum and Gas Engine.

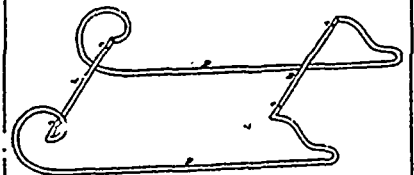


Fig. I

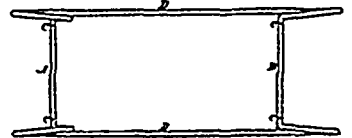


Fig. II.

24182 Brooks' Sleigh Gear to be fastened to Baby Carriages.