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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. 18,604. Elastic Sections, Gussets and Gores for Corsets, &c. (*Sections, Goussets et Pointes Elastiques pour les Corsets, &c.*)

William R. Hardy, Toronto, Ont., 30th January, 1884; 5 years.

Claim.—1st. Elastic section, gore or gusset, composed of a covering material having tubes in groups or regular series extending to the edges of the covering material, spirally-coiled wire springs extending through the tubes, the ends of the springs bent to alignment parallel to the side edges of the covering material, a wire or cord inserted through the bent ends of the springs, and one or more coils of the springs near the side edges of the covering material elongated or straightened, substantially as described and shown. 2nd. An elastic section, gore or gusset, composed of a covering material having parallel tubes, spirally-coiled wire springs inserted through the tubes, the ends of the springs projecting from the ends of the tubes and secured to or bent around a wire or cord parallel to the side edges of the covering material, substantially as described and shown. 3rd. An elastic section, gore or gusset, composed of a covering material having parallel rows of stitches separating spirally-coiled wire cords transversely to the length of the springs, and along the side edges of the covering material, substantially as described and shown.

No. 18,605. Grate. (*Grille.*)

James C. Jones, Chicago, Ill., U. S., 30th January, 1884; 5 years.

Claim.—1st. A grate composed of bars journalled or pivoted in different planes, substantially as shown. 2nd. A grate composed of a series of bars, a portion of which shall have a differential movement in relation to the other bars of the series, substantially as and for the purpose set forth.

No. 18,606. Cabinet for Watch Crystals. (*Buffet pour les Verres de Montres.*)

Creet H. Daugherty, Fremont, Ind., U. S., 4th February, 1884; 5 years.

Claim.—1st. The combination, in a cabinet, of a number of drawers, and each drawer provided with a wheel or revolving part which has recesses formed in its edge, for the purpose of holding watch glasses or crystals, substantially as shown. 2nd. The combination of a drawer provided with cross-pieces, with a revolving wheel having recesses in its edge to receive articles of different sizes, substantially as described. 3rd. The combination of a drawer provided with cross-pieces, with a revolving wheel provided with recesses in its edge, and a spring-snap for holding the wheel in position, substantially as set forth. 4th. The combination of a drawer with a revolving wheel having recesses of different sizes made in its edges, with a second smaller wheel which is placed in the middle of the larger wheel, the smaller wheel also having recesses formed in its edges, substantially as specified.

No. 18,607. Car-Coupling. (*Accouplage de Chars.*)

Michael J. Dougherty, Carbondale, Penn., U. S., 4th February, 1884; 5 years.

Claim.—In a car-coupling, the combination, with a pin-supporting bar E, of the lever C and standard D, slotted at D' and having shoulder E, as and for the purpose specified.

No. 18,608. Bush Box for Spindles.

(*Coussinet pour Broches de Filature.*)

Henry Heard, Greensborough, Ga., U. S., 4th February, 1884; 5 years.

Claim.—1st. In a bush-bearing, the combination of the outer box, the bushing sliding in the box and provided with a conical bearing-face, and the sleeve secured to the spindle and having a collar with a bearing-face coinciding with that of the bushing, as set forth. 2nd. The combination of the box K, bushing B having a bearing-face sleeve E secured to the spindle and provided with a collar f and flange e, and ring F secured within the bushing, substantially as set forth. 3rd. The combination, with the casing ring F, sleeve E having a flange e and bushing, of an adjusting sleeve I for temporarily holding the bushing, substantially as set forth. 4th. The improved bush box for spindles, constructed as and for the purpose herein set forth.

No. 18,609. Machine for Making Fences.

(*Machine pour faire les Clôtures.*)

Charles A. Everett, St. John, N. B., 4th February, 1884; 10 years.

Claim.—In a machine for manufacturing a woven fence, the combination of the driving wheel B with the gear wheels C, C, C, C giving motion to the wire twister, as shown and described. 2nd. In a machine for manufacturing woven fence, the stop V stopping the motion of the driving wheel B, as shown and described. 3rd. In the combination of the lever R with the spacing pins P and the guide frame S, for operating the spacing pins in the manner and for the purpose described. 4th. The combination of the spoke wheel Y with the cog wheel attached to the fence reel D, for operating the fence reel, as shown and described. 5th. The arrangement of the rubber springs with the tension plates H, for regulating the tension in the manner and for the purpose specified.

No. 18,610. Pump. (*Pompe.*)

Frank G. Cornell, Grand Rapids, Mich., U. S., 4th February, 1884; 5 years.

Claim.—The forcing chamber B having the tubular parts connecting to the discharge pipes, and the part 8 in line with the piston-rod, in combination with the said discharge pipes, the pipe extending into the well, with the piston-rod and with the aligning and sustaining rods f, f connected to the platform, substantially as described.

No. 18,611. Road Vehicle. (*Voiture routière.*)

John B. Armstrong, Guelph, Ont., 4th February, 1884; 5 years.

Claim.—1st. In road vehicles provided with shafts or pole, curved elastic steel draw-bars rigidly secured to the end of the shafts or pole, and hinged or otherwise flexibly connected to the front axle of the vehicle. 2nd. In road vehicles provided with shafts or pole, curved steel draw-bars rigidly secured to the end of the shafts or pole and tapered towards their rear ends, where they are hinged or otherwise flexibly connected to the front axle of the vehicle. 3rd. In road vehicles provided with shafts or pole, curved elastic steel bars rigidly secured to the end of the shafts or pole and having, at their other end, draw pins set at right angles to the bars and arranged to fit into draw-jacks attached to the front axle of the vehicle. 4th. In road vehicles provided with shafts or pole, curved elastic steel draw-bars rigidly secured to the end of the shafts or pole and having, at their other end, tapered draw-pins set at right angles to the bars, in combination with draw-jacks having tapered holes to receive the draw-pins, and rigidly secured to the front axle in such a position that the edges of the draw-bars will be close to either the inner or outer edges of the draw-jacks, when the draw-pins have been sprung into the holes through the draw-jacks, substantially as specified. 5th. In road vehicles provided with a metal front axle, a draw jack connected to the said axle by a pin and secured in position by screw bolts, one on either side of the axles, and passing through a plate situated on the side of the axle opposite to that upon which the draw-jack is situated. 6th. In road vehicles in which the shafts are connected to the front axle by curved elastic steel draw-bars, a metal cross-bar connecting the shafts at the point where the draw-bars are fastened, in combination with a semi-circle brace secured to the draw-bars and cross-bar by re-inforced holes, and forming a rigid brace at the jun-

tion between them, substantially as and for the purpose specified. 7th. In road vehicles in which the pole is connected to the front axle by curved elastic steel draw-bars, the combination of a semi-circular brace rigidly connected at either end to the draw-bars and centrally fastened to the end of the pole. 8th. A metal draw-jack E, having a tapered hole through it to receive the draw-pin, and extended ends to provide means for securing it in position on the axle.

No. 18,612. Block Presser for Wood Paper Pulp Machines. (*Presseur de buche pour machines à Pâte à Papier de Bois.*)

Norman H. Brokaw, Marinette, Wis., U. S., 4th February, 1884; 5 years.

Claim.—1st. A block-presser for paper pulp mills, consisting of a hydraulic press having the upper and lower ends of the cylinder connected with a pipe or pipes, which are provided with cocks for admitting the liquid into the upper or lower ends of the cylinder, substantially as described. 2nd. A block-presser for paper-pulp mills consisting of a hydraulic press, the cylinder of which has its upper and lower ends connected with a pipe or pipes; which are provided with cocks, for admitting the liquid into either end of the cylinder, said cocks being provided with devices for automatically adjusting them when the piston arrives at the end of its downward stroke, substantially as described. 3rd. A block-presser for pulp mills consisting of a hydraulic press provided with means for conducting the liquid into the upper end of the cylinder, to press the piston downward, and with means for admitting the liquid into the lower end of the cylinder, for the purpose of forcing the piston upward after it has completed its downward stroke, substantially as described. 4th. In a block-presser for pulp mills, the combination, with the cylinder A, of the tubes E, E', connecting the ends of the cylinder, the three-way cocks F, F', the piston B and the rod C, substantially as described. 5th. In a block-presser for pulp mills, the combination, with the cylinder A, of the tubes E, E', the three-way cocks F, F', the arms H, H', the rods I, I', the levers J, J', the weights K, K', the latch L, the piston B, the rod C, the head-block D and a device for connecting the piston rod or head-block with the latch, substantially as described.

No. 18,613. Mouse Trap. (*Souricière.*)

Edgar J. Jarvis, Toronto, Ont., 4th February, 1884; 5 years.

Claim.—1st. In a mouse trap, a perforated bait-box arranged to contain and protect the bait, in combination with a catching device located in front of the bait-box, substantially as and for the purpose specified. 2nd. In a mouse trap, in which the mouse is caught by a spring loop, the combination of a pivoted wire having one end bent to retain the spring, as specified, while the other end extends between the spring loop and bait, substantially as and for the purpose specified. 3rd. In a mouse trap, in which the mouse is caught by a loop actuated by a spring, the pivoted wire bar F, in combination with the pivoted wire C, having a bent end a to hook over the wire F, while its other end extends between the catching loop and bait. 4th. A perforated bait-box A located at the end of the passage way C, a loop D actuated upwardly by the coiled wire spring E, and held down within the passageway C by the pivoted wire F, in combination with the wire G having the bent end a to retain the wire F, and its other end arranged to extend within the passageway C, between the loop D and perforated bait box A.

No. 18,614. Riddle for Extracting Cockle and Wild Peas from Grain. (*Crible pour Séparer la Nielle et les Pois sauvages du grain.*)

William Atwell, Robert Floeter and Manson Campbell, Chatham, Ont., 4th February, 1884; 5 years.

Claim.—The combination of the frame D, screens A, B, C, close bottom E, shoot F, cross-bars G, G' and slide H, substantially as shown and described and for the purpose specified.

No. 18,615. Rowlock. (*Toletière.*)

Joseph Beaudreau and Thomas F. Criley, Ludington, Mich., U. S., 4th February, 1884; 5 years.

Claim.—1st. The combination of the clamp D having spring-catch d, and rock shafts C provided with circular nuts c, with the U-shaped frame B having slots H and circular recesses I at its ends, substantially as shown and set forth. 2nd. The ear-sleeve F having inwardly projecting pins f, securing screws f' and external annular flanges f², combined with the clamp d and U-frame, as set forth. 3rd. The combination of the bracket A, U-shaped frame B having slots H and recesses I, clamp D having rock-shaft C provided with nuts c, and ear sleeve F, as shown and set forth.

No. 18,616. Self-Closing Spigot.

(*Fausset Automatique.*)

Ferdinand Mayer and William F. Cox, Union Hill, N. J., U. S., 4th February, 1884; 5 years.

Claim.—1st. The self-closing spigot herein shown and described, consisting of the body A, plug B, arm D, weight f and bent rod E, substantially as and for the purposes described. 2nd. The combination, with the body A and plug B of the spigot, of the arm E having face or portion e inclined to the plane of motion of the weighted arm D, for automatically forcing plug B tightly to its seat, on the fall of the arm D, substantially as shown and described.

No. 18,617. Fastening for Gloves and Mitts.

(*Agrafe pour Gants et Mitaines.*)

Jean B. A. Lanctot and Francois X. Lanctot, Montreal, Que., 4th February, 1884; 5 years.

Claim.—A spring fastening for gloves made of a wire or strip of metal having suitable fastenings at or near the lower ends, and

twisted into a ring at the top, so that the side pieces B, B will always come together, all as and for the purposes set forth.

No. 18,618. Illuminating Gas Apparatus.

(*Appareil à Gaz d'Éclairage.*)

John E. Bioknell, Cleveland, Ohio, U. S., 7th February, 1884; 5 years.

Claim.—1st. The combination, with the retort A having the bottom aperture c, of the rotary shaft a carrying radial rakes b, adapted to spread the saw-dust and transfer the charcoal to the discharge c, as described. 2nd. The apparatus for making illuminating-gas consisting of wood-retort A, superheaters C, D, oil retort E and connections l, m, n, substantially as shown and described.

No. 18,619. Sash-Holder. (*Arrête-Croisée.*)

Martin Burke, Youngstown, Ohio, U. S., 7th February, 1884; 5 years.

Claim.—1st. In a sash-holder, a bottomless diagonally slotted housing, in combination with a longitudinal bolt formed in sections and detachably connected together, one of said bolt sections being provided with an operating lever, substantially as and for the purpose set forth. 2nd. In a sash-holder, the combination, with a bottomless diagonally slotted housing, of a longitudinal bolt formed in sections and detachably connected together by a slot and pin, one of said sections having an operating lever, substantially as and for the purpose specified. 3rd. The combination, in a sash-holder, of a bottomless diagonally slotted casing and a bolt consisting of two sections, one of said sections being provided with a lever and a shank carrying a pin, and the other section being formed hollow and having a T-shaped slot, by which means the two sections are detachably connected together, substantially as and for the purpose described. 4th. A sash-holder consisting of a bottomless diagonally slotted housing containing a horizontal bolt formed in sections, having a handle and a shank with pin upon one of said sections, and the other section having a T-shaped slot formed with an inclined shoulder to assist the pin in riding over, and preventing it from falling into the straight or horizontal portion of the slot, when the section is turned, substantially as and for the purpose specified. 5th. In a sash-holder, the combination, with a longitudinal bolt formed in sections, one of which has an operating lever, of a bottomless diagonally slotted housing provided with a longitudinal slot joining the diagonal slot to facilitate the insertion of the lever, substantially as and for the purpose described. 6th. In a sash-holder, the combination, with a bottomless diagonally slotted housing, of a longitudinal bolt formed in sections, one of said bolt sections having an operating lever, and the other section, at its outer end, having a flange or bearing plate to broaden the surface of the end of the bolt, substantially as and for the purpose set forth. 7th. In a sash-holder, a bottomless diagonally slotted housing, in combination with a longitudinal bolt formed in sections, one of said sections having an operating lever and cast hollow portion of its length, and the other bolt section having a reduced end to enter the hollow section and detachably connected thereto, substantially as and for the purpose specified. 8th. In a sash-holder, the combination, with a longitudinal bolt formed in sections, of a bottomless diagonally slotted housing cast with retaining shoulders upon its interior sides, to prevent the bolt from lateral movement, substantially as and for the purpose described. 9th. In a sash-holder and lock, a bottomless diagonally slotted housing containing a longitudinal bolt formed in sections, in combination with a flanged or socket plate adapted for attachment to the side of the window or casing, to receive the outer end of the bolt, substantially as and for the purpose set forth. 10th. In a sash-holder, a bottomless diagonally slotted housing cast with a spur and retaining shoulders upon its interior sides, in combination with a longitudinal bolt formed in sections, detachably connected together a slot and pin, substantially as and for the purpose specified.

No. 18,620. Drop Tubes for Boilers.

(*Tubes Inclinés pour Chaudières.*)

William H. Baldwin, Ottawa, Ont., 7th February, 1884; 5 years.

Claim.—1st. A drop tube for boilers consisting of an external tube B secured to the lower boiler plate, and a smaller internal tube B¹, passing through the tube A and through the upper boiler plate B², and secured to the same by jam nuts or other convenient means, and having the free ends of the two tubes connected and jointed by a reducing coupling c screwed to ends thereof. 2nd. The reducing coupling c having each end internally screw-threaded to fit over, and screw upon the larger tube A and the smaller tube B simultaneously, in combination with the tubes A and B forming an annular space. 3rd. A tube B inserted in a larger tube A of such a diameter as to leave an annular space between the walls of the tubes, and connected and jointed by a reducing coupling C fitting upon the ends of both tubes. 4th. A tubular flue A² B², in combination with the water legs D of a horizontal boiler E, all substantially as described and for the purpose set forth.

No. 18,621. Machine for Stretching Pants.

(*Machine pour Étirer les Pantalons.*)

Kenneth Allison, Toronto, Ont., 7th February, 1884; 5 years.

Claim.—1st. The spring D fitted to each of the cross-pieces B and C, and capable of being tightened by the screw e, as shown and for the purpose specified. 2nd. The combination of the hinged spring D with the cross-pieces B and C, working on the rod or staff A, as shown and for the purpose specified.

No. 18,622. Tool-Holder for Iron Planing Machines. (*Porte-Outil pour Machines à Raboter le Fer.*)

Robert Nield, Stratford, Ont., 7th February, 1884; 5 years.

Claim.—1st. The tool-holders D held within the tool-box C, in combination with mechanism arranged to simultaneously adjust both tool-holders, substantially as and for the purpose specified. 2nd. The

tool-holders D held within the tool-box C, in combination with the double cam G, spindle F, spur-wheel H and worm pinion J, connected to some reciprocating part of the machine, substantially as and for the purpose specified. 3rd. The tool-holders D held within the tool-box C, the double cam G connected to the spindle F, which is journaled in the tool-box C and has fixed to it the spur-wheel H, meshing with the worm pinion J fastened to the spindle J, the said spindle being journaled in the tool-box C and provided with the pulley K, in combination with the cord L wrapped around the pulley K, and passing around the pulleys H and N, the said pulleys deriving motion from the vertical reciprocating movement of the feed-rod B, which is provided with dogs Q, set so that they will come alternately in contact with the arm P, substantially as and for the purpose specified.

No. 18,623. Gas Apparatus. (Appareil à Gaz.)

Henry J. Rogers, Watford, England, 7th February, 1884; 5 years.

Claim.—1st. The combination of retorts with a boiler heated by gas or fuel for the manufacture of gas, substantially as and for the purpose set forth herein. 2nd. The tappet and lever arrangement for automatically shutting off and re-starting the supplies of oil, steam and gas, substantially as and for the purpose herein described. 3rd. The use of the residuals either separately or mixed with the original oil for the purpose of cheapening the production of gas, substantially as herein described.

No. 18,624. Duplicate Memorandum or Sale Slip. (Feuille d'Agenda ou de Vente Double.)

John H. Frink, Detroit, Mich., U.S., 7th February, 1884; 5 years.

Claim.—1st. A memorandum-book for salesmen composed of the flexible back piece A, a series of paper sheets provided with the lines of perforations b, b1 and having one end secured to one end of the back with the carbon sheet on top, the fly-leaves of the sheets from the line of perforations a outward, all lying in contact with each other, and all adapted to fold over the carbon sheet with one end of the flexible back, substantially as and for the purpose described. 2nd. A memorandum-book consisting of the series of sheets provided with the lines of perforations b, b1 and a carbon sheet on top, and a flexible back extending the full length of the sheets and having one end turned round in the form of a fly A1, which is confined down upon the paper and carbon sheets by an elastic band, the fly-leaves of the sheets from the line of perforations b outward, all resting directly against each other, and with one end of the flexible back adapted to fold over the carbon leaf, substantially as described. 3rd. The combination, with a block of memorandum paper perforated along the lines a and b1, of a cover A provided with a retaining fly A1, a carbon sheet secured with the memorandum-paper under the retaining fly, said cover also provided with flies A2 and A3, adapted to secure the memorandum leaf C in place, substantially as described. 4th. The combination, with a block of memorandum paper perforated along the lines a and b1, of a cover A provided with retaining flies A1, A2 and A3, a carbon sheet secured with said memorandum-paper under the retaining-fly A1, a memorandum-leaf secured under the flies A2 and A3 and in connection therewith, elastic bands wherewith said flies may be firmly held in place, substantially as described.

No. 18,625. Apparatus for Amalgamating Gold and other Metals and Separating the same from their Ores by means of Mercury. (Appareil pour Amalgamer l'Or et autres Métaux et les Séparer de leurs Minerais au Moyen du Mercure.)

Sylvanus L. Trippe, Chicago, Ill., U.S., 7th February, 1883; 5 years.

Claim.—1st. The combination of the vessel A, pipe B provided with openings a near its lower end, mechanism for rotating the said pipe, bottom of the vessel C having perforations and supported above the convex perforated, and ribbed diaphragm D fixed to the pipe B, immediately above the openings n, and one or more perforated diaphragms supported within the vessel A, above the diaphragm D, substantially as described. 2nd. The combination, with the vessel A for containing mercury, rotary pipe B having openings near its base, and base of the mercury, of the device for washing the foreign matter from the surface of the mercury comprising the vessel F for containing water surrounding, and fixed to the pipe B, whereby it revolves with said pipe, and provided with one or more laterally-branching tubes m closed at their outer ends and having perforations in their lower sides, substantially as described.

No. 18,626. Machine for Making Wire and other Solder. (Machine pour faire la Soudure du Fil de fer et autre.)

Edward L. Young and Lucius Dyer, Millbridge, Me., U.S., 7th February, 1884; 5 years.

Claim.—1st. In wire-solder machines, the combination, with a round melting chamber C, of a side chamber C1, tubes D, D1 and running solder, the regulating discharging tubes B, D1 for molten solder, or either of them, constructed of an outer straining tube k, retaining and discharge nozzle l, m, and a hollow screw-valve n, essentially as shown and described. 3rd. An apparatus for running solder or more upper exposed grooves in or around its rim, of one or more knives a1 and conductors H or H1, for picking up and passing off the solder from the mold, and one or more spring pressure rollers I, for bearing down on the wire in the mold in proximity to the knife or knives, substantially as specified. 4th. In combination with the horizontally rotating mold or fan A, having one or more upper ex-

posed grooves f in or around its rim, one or more conductors H or H1, each fitted with a knife or knives at its receiving end, and constructed to rise and fall at said end, and spring adjusting means for giving an easy contact of the knife or knives with the bottom of the groove or grooves in the mold, and for relieving the knife or knives from such contact when required, substantially as specified. 5th. The combination of the posts d1, the springs c1, the sleeve arms b1 and adjusting nut f1, with the raising and lowering conductor H or H1, having an attached knife or knives a1, and the horizontally rotating mold or pan A, having one or more upper exposed grooves in or around its rim, essentially as and for the purposes herein set forth. 6th. In apparatus for running solder wire, the horizontally rotating rim-flanged pan A adapted to hold water, having a central upwardly projecting boss on its bottom for reception of its shaft, an overflow pipe g and a series of upper exposed grooves f in its flanges e, substantially as specified. 7th. In apparatus for running solder wire, the combination, with a rotating mold and means for picking up and passing off the molded wire, of the rolls J, K, having attached knives or cutters m1, and means for throwing said knives in and out of actions during the rotation of the rolls for cutting the wire or wires into measured lengths essentially as described. 8th. The combination, with the wire delivering rolls J, K of the lever knives m', arranged within recesses in the sides of the lower rolls K, the springs n' and the rollers or stops o1, substantially as specified. 9th. In apparatus for making solder wire, the combination, with the rotating grooved mold or pan A, and devices for passing off the wire therefrom, of one or more take-up reels L or L1, and means for driving the same by friction, with provision for slipping as the roll of wire increases in diameter on the reels and whereby undue strain is taken off the solder wire, essentially as described. 10th. In take-up devices of apparatus for casting solder wire, the combination, in a take-up reel L or L1, of the sectionally constructed and concentrically arranged body parts d2, e2, having the reel heads respectively attached to them, and a fastening device for holding said sections in place, substantially as and for the purpose herein set forth. 11th. The combination, in a take-up reel for the wire in an apparatus for making solder wire, of the concentric body parts d2, e2, having the reel heads respectively attached to them, the spring catch f2, the friction producing spring b2 and adjusting nut c2, substantially as and for the purposes herein described.

No. 18,627. Grindstone. (Meule.)

Edward R. Mason, Des Moines, Iowa, U.S., 7th February, 1884; 5 years.

Claim.—An improved arbor for grindstones consisting of an axle having a fixed shoulder and clutch device, and a screw-threaded section, a sleeve adapted to be fixed in the eye of a stone and having the end of its bore shaped to engage the shoulder and clutch device on the axle, and a nut to engage the screw-threaded section of the axle and the end of the sleeve, for the purposes set forth. The axle a having a clutch device b c and a screw-threaded section d, the sleeve f having a fixed flange g at one end, and a screw-thread on its opposite end, and an enlargement h in the end of its bore, the disk k and the nut m arranged and combined relative to each other and a grindstone, substantially as shown and described for the purposes specified. The method of securing the sleeve centrally in the eye of a grindstone for the reception of a removable axle, which consists in the following steps: first, placing the stone over the sleeve with its flanges resting on a suitable base; second, placing the stone over the sleeve so that the sleeve will project through the centre of the eye of the stone; third, filling the eye around the sleeve with cement; fourth, screwing down the clamping-disk on the projecting portion of the sleeve to cover and confine the cement until it hardens, substantially as and for the purpose specified.

No. 18,628. Mattress Frame. (Chassis de Sommier.)

Walter S. Thatcher, Waverley, N.Y., U.S., 7th February, 1884; 5 years.

Claim.—A mattress-frame consisting of side bars provided with concave bearings e and perforated forward extensions, in combination with the oblique transverse rocking end bar d having its lower edge seated in the said bearings, its upper edge provided with means for receiving the wire mattress or other fabric, and the eyeballs passing respectively through the side bars, and rocking bar carrying adjusting-nuts, and a rigid cross-bar connecting the side bars at the opposite end, substantially as specified.

No. 18,629. Horse Shoe. (Fer à Cheval.)

Simkin W. Farnham, Canard, N.S., 7th February, 1884; 5 years.

Claim.—1st. The combination of a cross-bar having convergent shovel or hoe blades, a pole secured at its inner to the middle of the cross-bar, a curved eyed bar secured to the end of the pole and curved towards one side, and an eye for the attachment of a swivel tree secured upon the end of the cross-bar, at the side of a pole to which the eyed bar turns, as and for the purpose shown and set forth. 2nd. The combination of a pole having its rear end bifurcated, an eyed bar secured to the end of the pole and curved to one side, a pair of handles secured upon the rear end of the pole, a cross-bar secured upon the under-side of the bifurcated rear end of the pole and having two pairs of parallel longitudinal slots, two hoe blades secured upon the lower ends of two bars secured to the under-side of two plates having upright bolts sliding in the slots, and having perforated plates and fastening nuts at their upper ends, and an eye adapted to have a swivel tree attached to it and secured to the end of the cross-bar, at that side to which the eyed bar upon the pole is turned, as and for the purposes shown and set forth.

No. 18,630. Machine Knitted Stockings. (Bas de Tricot à la Machine.)

John Penman, (Assignee of Richard Schofield), Paris, Ont., 7th February, 1884; 5 years.

Claim.—As an improvement in the art of manufacturing machine knitted stockings, the transferring of a plain foot from the machine

it has been manufactured by on to the cylinder needles of a circular knitting machine having a ribbing attachment, by which machine a ribbed leg is added to the plain foot, the connection between the plain and ribbed work being perfected by single round stitches made by the cylinder needles alone, substantially as and for the purpose specified.

No. 18,631. Spring Wagon. (*Wagon à Ressorts.*)

Herman J. Kreinheder, Buffalo, N.Y., U.S., 7th February, 1884; 5 years.

Claim—1st. The combination, with the bolster E, front axle I and reach G provided with arms r, s , of a fifth-wheel composed of a lower semi-circular plate i secured to the axle, an upper plate m formed in one piece with the arm r of the reach and secured to the bolster, a semi-circular plate m_1 formed in one piece with the plate m , king-bolt k , constructed with a clip portion k_1 encircling the axle I, and plate X provided with a hub n , which fits in a bearing s at the end of the lower arm of the reach, as shown and described. 2nd. The combination, with the body A, of the transverse elliptic springs C, C₁, cross-pieces B, B₁, secured to the upper side thereof, body loops a , supporting the body A on the cross-pieces B, B₁, bolster E, side bars F connecting the bolster with the rear axle D, a reach G secured with its rear end to the rear axle and having a bifurcated front end r, s , the upper arm r of which connects with the upper half of the fifth-wheel, and the lower arm s with the plate N, on the under-side of the axle, and king-bolt k secured to the front axle I by a clip portion k_1 , substantially as set forth.

No. 18,632. Valve Gear for Steam Engines.

(*Distribution par Tiroir de Machine à Vapeur.*)

Hosea K. Kriebel, West Point, Pa., U.S., 7th February, 1884; 5 years.

Claim—1st. Variable cut-off mechanism for operating valves of steam engines, which consists of a valve crank carrying a crank pin and supported by the crank of the engine, in combination with means controlled by the varying speed of the engine, to automatically change the location of said valve operating crank, moving it at a radial line to, or from the centre of the crank shaft, to vary the time of cut-off in accordance with demand, substantially as and for the purpose specified. 2nd. Variable cut-off mechanism for steam engines, which consists of an engine crank and its pin, in combination with a valve crank pin supported by said engine crank pin, mechanism acting by centrifugal force to vary the position of said valve crank pin, by moving it radially to, or from the centre of the crank pin and connecting mechanism operating through said engine crank pin to transmit the effect of the centrifugal mechanism to the said valve crank pin, substantially as and for the purpose specified. 3rd. Variable cut-off mechanism for steam engines, which consists of an engine crank and its pin, in combination with a valve crank pin supported by said engine crank pin, mechanism acting by centrifugal force to move said valve crank pin radially toward the crank shaft centre, a spring or springs to move it radially in an opposite direction, connecting mechanism operating through said engine crank pin, to transmit the effect of the centrifugal mechanism and springs to the said valve crank pin, substantially as and for the purpose specified. 4th. Valve gear for steam engines which consists of crank wheel A, crank pin D supporting the lever H, carrying the valve crank pin I, shaft G having crank pin g , and mechanism acting by centrifugal force to turn said shaft G independent of its revolution, around the shaft of the crank wheel A, substantially as and for the purpose specified. 5th. The combination of a crank wheel A, crank pin D, shaft G, valve crank pin I, centrifugal mechanism and connecting mechanism, substantially as described, from said shaft G to said pin I, whereby the latter is moved radially over the face of the crank A to change its relative position with respect to the crank pin D, substantially as and for the purpose specified. 6th. The combination of crank wheel A, crank pin D, shaft G having crank pin g , lever H having valve crank pin I, arm K₁, weight k and spring N, substantially as and for the purpose specified. 7th. The combination of crank wheel A, crank pin D, shaft G having crank pin g , lever H having valve crank pin I, cranks K, arms K₁, weights k , rod or link M and springs N, substantially as and for the purpose specified.

No. 18,633. Hoisting Machine.

(*Monte-Charge.*)

James Boyd, St. Paul, Minn., U.S., 7th February, 1884; 5 years.

Claim—1st. The combination of the guide-rods, the platforms, the elevating chains and the pulleys E₁, E₂, as described, substantially as and for the purposes set forth. 2nd. The combination of the guide-rods, the platforms, pulleys E₁, E₂, set at the top of the supporting-horse pull-ys M₁, M₂, at the base of the structure, a snatch block P and cable F, secured to the top of one of the platforms, then passing above pulley E₁, thence downward and around pulley M₁, thence forward and around the snatch block, thence backward and around pulley M₂, thence upward and over pulley E₂, and thence downward and connected to the other platform, substantially as set forth. 3rd. The combination of the guide rods, the platforms, cable F, pulleys M₁, M₂ and guide pulleys M₃, M₄, for holding the cable to pulleys M₁, M₂, substantially as and for the purpose set forth. 4th. The combination of the guide rods, the platforms, the angularly set friction-rollers i , the stay-bolts with their heads fitting into the guide-rods and secured to suitable brace-pieces, and the elevating cable, substantially as set forth. 5th. The combination of the guide rods, the platforms, the elevating cable, friction-rollers on the platform bearing against the guide-rods, and stay-rods or bolts for bracing the rods between their ends, substantially as set forth. 6th. The combination of the guide-rods, the platforms, the elevating cable and the stay-bolts provided with the ferrules and connected to the rods, and suitable brace-pieces for bracing the rods, substantially as and for the purpose set forth. 7th. The combination of the guide-rods, the bolts r passed through the rods, and fastenings for securing the bolts to a base-piece, substantially as and for the purpose set forth. 8th. The combination of the guide-rods set into holes in a base piece, and stay-bolts or rods for bracing the guide-rods, substantially as

and for the purpose set forth. 9th. The combination of the guide-rods, the platforms, the elevating cable, the pulleys for the same to run over, the catches e, g and the rod T constructed, as shown and described, for operating the cables, the several parts operating substantially as and for the purposes set forth. 10th. The combination of the guide-rods, the platforms, the elevating cable, the pulleys for the same to run over, the catches e, g , the rod T₁, constructed and applied as set forth, and the spring for holding the arm of the rod, substantially as and for the purposes set forth.

No. 18,634. Stocking Heel. (*Talon de Bas.*)

Harry Lennard, Dundas, Ont., 7th February, 1884; 5 years.

Claim—1st. The combination of tubular knit stocking, Fig 1, having the leg and foot portions of ordinary form, and the back and sole parts of the heel a, b , of narrowed trapezoid-shaped continuations, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the tubular knit stocking and trapezoid-shaped pieces a, b , united as shown in Fig. 2, substantially as and for the purpose hereinbefore set forth.

No. 18,635. Implement to Lift Clothes out of the Wash Boiler. (*Instrument pour tirer le Linge des Chaudières de Buanderie.*)

William Addison, Hamilton, Ont., 7th February, 1884; 5 years.

Claim—A laundry tong made of wood to be formed with two arms D, D, half checked together, working on the pivot B, the points A, A, closing together, to grip the clothes by compressing the handles C, C, as described.

No. 18,636. Sole and Heel Plate.

(*Plaque de Semelle et de Talon.*)

Solomon Levy, Ware, Mass., U.S., 7th February, 1884; 5 years.

Claim—1st. The herein described plate for shoes formed of a single piece of metal, having the longitudinal slots a, a_1 , projecting portions e, c provided at their ends with lugs d , adapted to enter the sole of the shoe, to aid in retaining the plate thereon, and spuds or spurs C, C formed integral with said plate, substantially as set forth. 2nd. The combination, with a shoe, of a plate adapted to be secured thereto, formed of a single piece of metal having the longitudinal slots a, a_1 , projecting portions e, c provided at their ends with lugs d , adapted to enter the sole of the shoe, to aid in retaining the plate thereon, and spuds C, C formed integral with said plate, substantially as set forth.

No. 18,637. Millstone Driver.

(*Chasoir de Meule de Moulin.*)

Henry Heard, Greensborough, Ga., U.S., 7th February, 1884; 5 years.

Claim—1st. The combination of the spindle D, cross-piece B, having segmental lugs d, d , and a bearing for the end of the spindle, having segmental lugs f, f on the spindle, and the intermediate cylinder F having a recess y , and at the ends segmental clutch-pieces arranged alternately and fitting nicely between the lugs d, d, f, f , substantially as set forth. 2nd. The combination of the sleeve A, having sockets x, x , cross-piece B, spindle D and connections between the spindle and cross-piece, substantially as set forth. The combination, with the driver-spindle and part driven, of an intermediate connection F, having lugs and recesses adapted to corresponding parts on the spindle and driven piece, substantially as set forth.

No. 18,638. Tool-Holder for Grinding.

(*Porte-Outil pour Ré-mouler.*)

John R. Kennett, Geddes, N.Y., U.S., 7th February, 1884; 5 years.

Claim—In combination with the gripping jaw C, the plate a provided with the pivotal pin or screw f , and segmental slot g , the plate b pivoted on the pin f , the clamping screw i in slot a , and the stem h connected to the plate h , substantially as described and shown.

No. 18,639. Combination Tools for Sharpening Skates, &c. (*Outils Combinaison pour Ré-mouler les Patins, &c.*)

Harry N. Kistner, Bordentown, N.J., U.S., 7th February, 1884; 5 years.

Claim—1st. In a combination tool, the combination, with the handle A having files E₁ and K₁ located as specified, of the laterally and longitudinally adjustable jaw F and the clamp-screw therefor, all substantially as shown and described. 2nd. In a combination tool, the combination of the jaw F having the L-shaped slot I, with the handle A having the scissors-file E₁ and saw-file K₁, and the clamp-screw G, as set forth. 3rd. In a combination tool, the combination with the handle provided with a recess C, or the pivoted implement D, D₁, D₂ having squared inner ends, the adjustable jaw F and the thumb-screw G, substantially as described. 4th. In a combination tool, the combination, with the handle A provided with a jaw H, of the movable jaw J provided with a slot R₁, the thumb-screw R and the file K under the jaw H, as shown and described. 5th. The combination, with the handle A formed with a projection L, of a block M held on the end of the projection by a thumb-screw N and a glass-cutter P attached to said block, as shown and described, for the purpose set forth.

No. 18,640. Machine for Cutting Hoops.

(*Machine à tailler les Cercles.*)

John A. Grant, Fremont, Ohio, U.S., 7th February, 1884; 5 years.

Claim.—1st. In a machine for cutting hoops, the combination, of the roller B, adjustably secured between the arms C, C, pivoted bar P secured at one end to the roller B, lever I, sprocket wheel S, chain R, connecting lever I and pivoted bar P, and spring J adapted to hold the roller B in operative position, substantially as described, for the purpose set forth. 2nd. In a machine for cutting hoops of substantially the described construction, the combination, with the saw-armor A, having pulley U and circular saw T, of the adjustable cross-beam H, having longitudinally slotted arms C, C, within which the laterally adjustable rollers A, B, are secured, all constructed and arranged to operate, substantially in the manner and for the purpose shown and described.

No. 18,641. Hood or Guard for Circular Saw.
(*Garde-Scie Circulaire.*)
Joseph G. Groff, Connersville, Ind., U. S., 7th February, 1884; 5 years.

Claim.—1st. An automatic self-adjusting guard for circular saws consisting of a hood hung upon a pivot, which has a free vertical movement in its bearings and having a forward inclined projection, upon which the advancing material to be sawed acts to raise the forward end of the hood, and having also another inclined surface, upon which the said material acts to raise the rear end of the hood, and thus cause the hood to rest wholly on the material, substantially as described. 2nd. An automatic self-adjusting guard or hood hung upon a pivot, which has a free vertical movement in its bearing and having a forward inclined projection, upon which the advancing material to be sawed acts to raise its forward end, another incline upon which said material acts to raise its rear end, and a third incline acting upon the material to gradually lower its rear end to the table again, as described. 3rd. The herein described saw guard having the rearwardly extending arms, the forward inclined projection and the angular bottom, in combination with the vertical slotted blade or plate, the pivot adjustable in said slotted plate, substantially as described. 4th. The combination of the hood having the rearwardly extending arms, the vertical slotted plate embraced by said arms, the pivot adjustable in said slotted plate, and the adjusting screw combination of the lugs on the arms, substantially as described. 5th. The combination of the vertical plate having the angular backwardly inclined lower end, with the socket plate on the table having a socket corresponding to the lower end of the vertical plate, with a saw hood pivoted to the vertical plate and projecting to the front thereof, the whole arranged substantially as described. 6th. The combination of the hood having the rearwardly extending arms, the vertically adjustable pivot, the slotted plate having the angular lower end, the angular socket in which the lower end of said plate fits, substantially as described. 7th. The combination of the hood having the rearwardly extended arms, the adjustable pivot, the slotted plate and the means for limiting the descent of the rear end of the hood, substantially as described. 8th. The combination of the rearwardly extending arms of the hood embracing the vertical plate, the vertical plate having the vertical slot and the circular opening at the end of the hood, and the pivot bolt having the grooved shank, the whole arranged and operating substantially as described. 9th. The combination of the vertical plate, the hood having the rearwardly extending arms and the slot in its rear portion for receiving the vertical plate, substantially as described. 10th. The combination of the plate having the vertical slots, the hood having the rearwardly extending arms, and the rollers carried by the said arms working in the said vertical slots, substantially as described. 11th. The plate having the vertical slots, the lower arms having rearwardly extended arms embracing the plate, the rollers carried by said arms and working in the slots of the plate, substantially as described. 12th. The combination of the plate having the two vertical slots for the rollers, and the third slot for the adjusting set screw, with the hood having the rearwardly extending arms provided with the horizontal slots, the rollers carried by said arms and the adjusting set screw, substantially as described. 13th. The slotted frame A provided with the removable sides B, forward inclined projection C and rearward extending arms D, in combination with the vertical slotted and perforated blade F and detent E, substantially as shown and described. 14th. The vertical slotted and perforated blade F, in combination with the arms D, slotted frame A, the detent E, and forward inclined projection C, with or without the detent E, substantially as shown and described.

No. 18,642. Milk Can and Process for Cooling Milk and Purifying Cream.
(*Boîte à Lait et procédé pour rafraîchir le Lait et purifier la Crème.*)
William Morton and John H. Mayer, Wellesley, Ont., 7th February, 1884; 5 years.

Claim.—1st. The employment and use of a covering for a milk can, made of the materials and in the manner hereinbefore specified. 2nd. The process of cooling and purifying milk, by bringing the milk into almost direct contact with water, and thus procuring the absorption by the water of all gases and odours arising from the milk, and purifying the more rapid cooling of the milk and rising of the cream by the absorption of such gases and odours. 3rd. The employment and use for such purpose of such a can covered, as hereinbefore described, in the process of submergence of milk in water, thus effectually securing the process of cooling, purifying and absorption, as hereinbefore set forth.

No. 18,643. Improvements in Gloves and Mitts. (*Perfectionnements aux Gants et aux Mitaines.*)
Jean B. A. Lanctot and François X. Lanctot, Montreal, Que., 7th February, 1884; 5 years.

Claim.—A glove having its front, back and thumb all cut out of one piece, substantially as herein set forth.

No. 18,644. Feeding Reservoir for Stoves Consuming Saw-Dust and the like. (*Réservoir-Alimentateur pour Poêles brûlant le bran de Scie ou autre Combustible Semblable.*)

Bernard Lemay, Coaticook, Que., 7th February, 1884; 5 years.

Reclame.—1o. La combinaison, avec le tuyau réservoir A et des clefs B, C, tel que décrit. 2o. La combinaison, avec le tuyau réservoir A et les clefs B, C, des manches H, H, de la charnière E, de l'alarme J, de la corde F, de la poulie K et des barres flexibles D, tel que décrit et pour les fins indiquées. 3o. Le gril M, muni de dents relevées a, a, a, a, a, a, tel que décrit. 4o. La combinaison du gril M, muni de dents relevées a, a, a, a, a, avec le gril L, tel que ci-dessus décrit et pour les fins indiquées.

No. 18,645. Stock Car. (*Char à Bétail.*)
Marion H. Walker, White Hall, Ill., U. S., 7th February, 1884; 5 years.

Claim.—1st. In a stock car having an end doorway, the combination of the said car, a gangway platform hinged at the base of said doorway and turning outward, the post c journalled vertically at one side of the doorway, and the door supported on said post, substantially in the manner described, whereby it may be moved longitudinally along, and swung with said post and adjusted to close the car doorway, or serve as a side guard to the gang platform, as and for the purposes specified. 2nd. The combination of the car having end doorway, the door hinged at one side of said doorway and provided with a suitable latch at its outer end, the gangway platform hinged at one end in the base of said doorway and adapted to be turned vertically outward or up against the door, and locking bar pivoted at one end on the car and swung across in front of platform B, and secured at its other end by means of hasp and staple, substantially as described and for the purposes specified. 3rd. In a stock car, the combination, with the car having a doorway and staples a, arranged therein, of the platform B, and straps b having their upper ends pivoted to the sides of the platform, and their lower ends bent laterally and extended into the staples a, the said staples and straps serving as a hinge for the platform, and also to permit its elevation, substantially as described and for the purposes specified.

No. 18,646. Hydro-Carbon Furnace.
(*Calorifère à Hydrocarbure.*)
Orland D. Orvis, Chicago, Ill., U. S., 7th February, 1884; 5 years.

Claim.—1st. The method of utilizing hydro-carbon liquids for heating purposes, the same consisting in forcing said liquid, by means of steam, into a retort heated by the furnace, in which retort the hydro-carbons rise and escape only in vaporous form to the fire-chamber, as hereinbefore set forth. 2nd. The method of utilizing hydro-carbon liquids for heating purposes, the same consisting in forcing said liquid by, and in conjunction with steam and air into a retort heated by the furnace, in which retort the hydro-carbons are vaporised and rise in their escape to the fire chamber, substantially as described. 3rd. The method of utilizing hydro-carbon liquids for heating purposes, the same consisting in forcing said liquids by means of steam into a retort heated by the furnace, in which retort the hydro-carbon vapors rise and escape in a sheet-like form into the fire or combustion chamber, substantially as described. 4th. The combination, with a steam and air inlet pipe of a furnace, of a hydro-carbon retort secured to the inner end of said pipe and projecting below the plane of the same, said retort being provided toward its upper end with an outlet for the escape of the hydro-carbon vapors generated, substantially as described. 5th. The combination, with a steam and air inlet pipe of a furnace, of a hydro-carbon retort secured to the inner end thereof and projecting below the plane of said pipe, said retort being provided toward its upper end and in a plane above the centre of the inlet pipe, with an outlet for the escape of the hydro-carbon vapors, substantially as described. 6th. The combination, with the retort, the inlet pipe, the globe vacuum chamber and means, substantially as described, for supplying steam and air to the same, of an oil nozzle opening in the inlet pipe at a point between said retort and chamber, and means for supplying the oil, all substantially as described.

No. 18,647. Magazine Electric Lamp.
(*Lampe Electrique à charbons continus.*)

Nelson S. White, Canton, Walter N. Dole, Lynn, and Albert F. Upton, Newtonville, (assignees of Alenza T. Gifford, Hopedale,) Mass., U. S., 8th February, 1884; 5 years.

Claim.—1st. In an electric lamp, the combination, with the magazine provided with devices for discharging single pencils successively therefrom, of the endless chain provided with projections for striking the pencils discharged and forcing them toward the opposite electrode, and suitable devices for operating said chain automatically as the result of increased resistance in the lamp circuit, substantially as described. 2nd. The combination, with the magazine provided with the automatically closing doors and automatic means for discharging the pencils through the doorway, of the endless chain provided with means for opening said doors and driving the discharged pencil forward longitudinally, substantially as described. 3rd. The magazine provided with the automatically closing doors, means for automatically discharging the pencils, and a guide for a single pencil outside of said doors, substantially as described. 4th. The combination, with the magazine provided with a guide for single pencils and with automatically closing doors, of the travelling chain provided with means for driving the pencils longitudinally, and automatic devices for opening the doors to permit a fresh pencil to pass, substantially as described. 5th. In an electric arc lamp, the combination, with the electro-magnets for lifting a carbon pencil from an opposite electrode, to establish the arc, of an electro-magnet of higher resistance in a derived circuit around said magnets, a feed operating magnet in a shunt circuit, and shunting devices operated by said magnet of

higher resistance, for shunting the main current through said feed operating magnet, substantially as described. 6th. The combination, with the electro-magnets N1 arranged in a shunt circuit for operating the pencil feed, and the electro-magnet N of higher resistance arranged in a derived circuit, of the levers M and M1 carrying armatures for such magnets respectively, a circuit breaking or shunting device operated by the first named lever to direct the main current over the coil of magnet N1, and means for restoring said shunting device to its normal condition by the action of the lever Mt, substantially as described.

No. 18,648. Heating Furnace. (*Calorifère.*)

George R. Scates and William B. Melvin, Knoxville, Tenn., U. S., 8th February, 1884; 5 years.

Claim.—1st. In a furnace, the combination, with the water-heater arranged in the fire compartment, and the smoke drums having interior water cylinders, of the cold water pipe extending into the cylinder in one of said drums, and conveying the water from thence into one end of the heater, and the hot water pipe conveying the heated water from the heater to the cylinder in the other drum and from thence to its destination, as set forth. 2nd. In a furnace, the combination of the heater having a water heater arranged in its fire compartment, two smoke-drums in rear thereof having interior water cylinders, the cross-pipe connecting the drums at their bottom and having an upwardly-extending smoke-flue, the pipes or smoke-flues extending from the fire compartment to the drums, the smoke-flue extending direct from the fire compartment to the upwardly-extending final exit smoke-flue and having a deflecting damper, the cold water pipe and the hot water pipe, both leading from different ends of the water heater to the interior cylinders of the smoke-drums and also from said cylinders, as set forth.

No. 18,649. Stave Cutting Machine.

(*Machine à Tailler les Douelles.*)

Franz Witzmann and George D. Lambert, New Haven, Ct., U. S., 8th February, 1884; 5 years.

Claim.—1st. In a stave-cutting machine, the cross-head carrying a transverse curved cutter and a spring in rear of said cutter, to retain the last cut stave against the rear face of the knife while the next stave is being cut, as set forth. 2nd. The combination, with the cross-head having the removable blocks projecting from its front and formed with curved front edges, of the removable curled knife resting on the latter, and the adjustable spring secured to the cross-head and projecting up back of the knife, as set forth. 3rd. The combination, with the cross-head having the brackets projecting from the top of the curved-face front removable blocks, and the curved transverse knife secured to the latter and provided with screw-threaded shanks working up in said brackets, as set forth. 4th. The combination of the frame carrying the driving shaft, crank-wheels and pitmen, the longitudinally adjustable table, the rock arms journaled on a transverse shaft in rear of the table and provided with longitudinal slots, the cross-head adjustable by means of screws in these slots and carrying front blocks, and the knife secured to the latter, as set forth. 5th. The combination, with the cross-head having the front blocks and curved knife arranged thereon and with the table having a curved slot in rear of the knife base-block, of the adjustable curved guide arm arranged on the cross-head and extending down through the slot, as set forth. 6th. The combination of the base-bed having the inclined upwardly-projecting guides and front perforation, the upper bed having corresponding downwardly-projecting guides and front slot in which vertically slides a nut and the hand-screw for operating the beds, as set forth.

No. 18,650. Cinder-Sifting Machine.

(*Machine pour Cribler les Cendres.*)

Richard Ough (assignee of Louis Wisner), Toronto, Ont., 8th February, 1884; 5 years.

Claim.—1st. In a cinder-sifting machine constructed with an inclined and tapering cylinder, circular or otherwise, largest at the lower end and covered with wire-work, the combination of a lever handle for operating and giving to the cylinder a vibratory movement, as specified and described. 2nd. In combination with the cylinder B, the casing A, hopper G, delivery spout A, door I and hook J, the whole constructed and arranged as described, and operating substantially as and for the purposes set forth. 3rd. In combination with the cylinder B and casing A, the flanged ring L and hooks M, as and for the purposes set forth.

No. 18,651. Ornamenting Paper Hangings.

(*Ornementation des Tentures en Papier.*)

John B. Knoefflin, Lucien Baer, David Kraemer and Louis Beckhardt, New York, N. Y., U. S., 8th February, 1884; 5 years.

Claim.—As an improved article of manufacture, a fabric such as paper possessing the characteristic hereinbefore set forth, that is to say, one side of the paper having an attached covering or layer of flock such as powdered wool, and the outer surface of such covering or layer of flock having attached thereto disintegrated mica-seales or similar powdered mineral substance, substantially as described.

No. 18,652. Railway Velocipede.

(*Velocipède à Voie de fer.*)

Francis W. Randall, Tekowsha, and Horace G. Haines, Kalamazoo, Mich., U. S., 8th February, 1884; 5 years.

Claim.—1st. In a three-wheel velocipede, the revolvable axle having the central pinion, a drive-wheel secured at each end of said axle and means for co-acting with said pinion to propel the device, in combination with a brace-wheel located in the rear of one of said drive-wheels, all substantially as set forth. 2nd. A velocipede having two drive-wheels rigidly secured to a revolvable axle, and a brace-wheel located on a line with one of said drive-wheels and at right

angles to said axle, substantially as set forth. 3rd. The combination, with the frame, of a seat consisting of the base-board and the double seat revolvably pivoted thereon, substantially as set forth. 4th. The combination, with a revolvable axle provided with a drive-wheel at each end and having a central pinion of the gear having the side extension, and the brake device having a shoe adapted to engage the periphery of said extension, all substantially as described. 5th. The frame consisting of the two side bars and the forward truss and bridge frame constructed and arranged, substantially as set forth. 6th. In a velocipede, the side bars jointedly connected with the forward bar and detachably connected at the rear, whereby they may be swung around parallel with the axle closing the device, substantially as set forth. 7th. In a combined hand and foot treadle, the hand-lever and a foot-treadle pivoted together, said hand-lever being connected by a rod to the gear-crank and the rear end of the foot treadle suspended by a rod to the seat-board, substantially as set forth.

No. 18,653. Self-levelling Berth.

(*Lit de bord Suspensif.*)

Albion P. Bickmore and Edward B. Pendleton, Hyde Park, Mass., U. S., 8th February, 1884; 5 years.

Claim.—1st. The combination, with a fixed bracket and a universally-jointed support carried thereby, of a suspended frame carrying an upper and lower berth, said bracket being between the said upper and lower berths, substantially as described. 2nd. A supporting frame having upwardly and downwardly projecting arms, a berth pivoted upon the upper arms, and a second berth pivoted upon the lower arms, and a bracket intermediate between said berths fixed to the frame suitable support, and suitable flexible connections between the frame carrying the arms and said bracket, substantially as described. 3rd. The combination, with the cases or sockets containing the connected spherical segments and the ball bearings, of the frame attached to the lower socket and composed of upwardly elevated arms 5, 6, supporting a swinging upper berth, and downwardly projecting arms 7, 8, supporting a similar lower berth.

No. 18,654. Manufacture of Paper Pulp.

(*Fabrication de la Pâte à Papier.*)

David O. Francke, Korudal Måludal, Sweden, 8th February, 1884; Re-issue of Patent No. 13,695.

Claim.—1st. The herein described solution composed of sulphites of lime or other alkalis in water, along with an excess of sulphurous acid, substantially as herein specified. 2nd. The process of manufacturing paper pulp from wood and analogous vegetable fibre, by substituting the material in a finely divided state to the action of calcium sulphide under heat and pressure, without previous treatment. 3rd. As a new article of commerce, paper pulp made by the action under heat and pressure of acid calcium sulphite on wood, wheat, maize or other straw, or other suitable vegetable fibre, as herein described.

No. 18,655. Electric Current Regulator.

(*Régulateur de Courant Electrique.*)

Elihu Thomson, Lynn, Mass., U. S., 13th February, 1884; 5 years.

Claim.—1st. The combination, in a current regulator, of a single commutator cylinder, two pairs of oppositely and differentially moving brushes and an operating electro-magnet, substantially as and for the purpose described. 2nd. The combination, in a current regulator, of the armature lever A, separate pairs of commutator brushes connected to said lever at different points, and a revolving commutator upon which said brushes bear. 3rd. The combination of a separate set of ture lever A, rocker arms T, 2, each carrying a separate set of commutator brushes, a commutator cylinder K1, K2, K3, and connecting link I attached to the armature lever and to the rocker arms at opposite sides of their fulcrums, so as to move them in opposite directions. 4th. The combination, with the positive and negative collecting brushes for a dynamo-electric machine, of means for increasing their collecting extent simultaneously with their forward adjustment. 5th. The combination, with a compound positive or negative collecting brush for the commutator of a dynamo-electric machine, of means for increasing the collecting extent of said brush rearwardly, simultaneously with a forward movement of the forward portion thereof, substantially as and for the purpose described. 6th. In a compound commutator collecting brush, the combination, with a forward adjustable spring, of an auxiliary rear spring and means for moving the latter backward, simultaneously with the forward movement of the former. 7th. In an automatic current regulating apparatus, the combination of a derived circuit around the working resistances, a regulator magnet coil in said derived circuit, and mechanism operated thereby for adjusting the position of the commutator brushes of the machine supplying current to the working resistances.

No. 18,656. Tag. (*Etiquette.*)

Edward W. Thompson, Lowell, Mass., U. S., 13th February, 1884; 5 years.

Claim.—1st. The combination of a tag provided with a longitudinal slot, and one or more spring hooks or jaws attached to said tag and projecting across said slot, as and for the purpose specified. 2nd. The combination of a tag provided with a longitudinal slot and one or more transverse slots leading into said first named slot, and one or more spring hooks or jaws attached to said tag and projecting into the last named slots and across the first named slot, as and for the purpose specified. 3rd. The combination of the tag slotted longitudinally and transversely, and one or more spring hooks secured to said tag wholly within the surface of the same, and reaching into the transverse slots and through the longitudinal slot of said tag, as and for the purpose specified. 4th. The combination of a tag slotted longitudinally and transversely and provided with longitudinal grooves, and one or more spring hooks or jaws let into said grooves below the surface of said tag, as and for the purpose specified. 5th. The combination of a tag slotted longitudinally and transversely and provided with transverse

holes and one or more spring wires, each of said wires being bent near one end into a hook and, near the other end, bent at about right angles and driven through one of said transverse holes and headed, as and for the purpose specified. 6th. The combination of a tag slotted longitudinally and transversely, and provided with longitudinal grooves and transverse holes, and one or more spring wires, each of said wires being bent near one end into a hook and, near the other end, bent at about right angles and driven through one of said transverse holes and headed, as and for the purpose specified.

No. 18,657. Mail Bag Catcher and Deliverer. (*Appareil recevant et délivrant les Valises à lettres.*)

Edward W. Tompson and Albert M. Moore, Lowell, Mass., U.S., 13th February, 1884; 5 years.

Claim.—1st. The combination of the arm O, the finger P hinged thereto and provided with the pin P₂ and bent end P₂, and the spring Q, the whole adapted to be operated to hold a bag or pouch and to retract, as the same, upon said finger striking a post at the side of the bag, as described. 2nd. The frame R provided with sides which converge together in front, and with a network R₁ placed between and below said sides and connected to said sides, as and for the purpose specified. 3rd. The combination of the frame or lower arm R, the post C, the projection X rigidly secured to said frame R, and the catch V pivoted to said post C, as and for the purpose specified.

No. 18,658. Electrical Circuit. (*Circuit Electrique.*)

Charles E. Allen, Adams, Mass., U.S., 13th February, 1884; 5 years.

Claim.—1st. The main line circuit starting from one pole of a main line battery (the other pole being grounded) and running so as to take in several central offices, on going out and returning to same central office from which it started, in such a way that the portion of said circuit may be grounded at any of the central offices in such a way as to leave said battery circuit open until closed, by giving ground to the return portion of said circuit, as and for the purpose set forth. 2nd. A circuit starting at one pole of a battery (of which the other pole is grounded at the central office) and running through the controlling magnets of several subscriber's instruments, but in such a way that said return portion of circuit may be grounded at each subscriber's station, and the end at the central office terminating so as to leave the local circuit open until ground is given to the return wire through branches at subscriber's stations, or by grounding the terminating ends of the return wire at the central office, as and for the purpose specified. 3rd. The combination, with the main line circuit of several central offices, each having several local circuits branching therefrom and returning thereto (on which are situated several subscriber's instruments) arranged in such a manner that a circuit may be made up from ground at any one individual station of any local line and main line in which the telephone and transmitter of said local line may be thrown in for conversation, the lead portions in which are the controlling magnets of the signalling devices being temporarily cut-off from this return portions, thereby relieving the circuit to be talked through of much resistance. 4th. A battery or generator with one of its poles grounded, and the circuit from the other forming a loop (not grounded) upon which is situated several stations, each with its signalling or controlling magnets situated in the leading portion of the loop, and provided with suitable means for opening and closing said portion of loop and, with suitable devices for giving ground to the return portions of the loop either directly or through communicating instrument, as and for the purpose set forth. 5th. One or more generators and main line loop circuits, arranged as described, their stations being central offices at each of which are situated several other generators with loop circuits and stations extending therefrom, and means, at each central office and station, by which a circuit may be made up from parts of return portions of the main line loop circuit and any of the local loop circuits, substantially as set forth.

No. 18,659. Travelling Cap. (*Casquette de Voyage.*)

William E. Wood, Houston, Texas, U.S., 13th February, 1884; 5 years.

Claim.—A cap having an air-tight pillow secured to the top of the same, provided with a suitable nipple for inflating the pillow, in combination with flaps for covering said pillow and securing it in place when not inflated, substantially as shown and described.

No. 18,660. Method of, and means for Making Mole Ditches. (*Methode et Moyens pour faire les Drains.*)

Milton H. Eaton, Wilton Junction, Iowa, U.S., 13th February, 1884; 5 years.

Claim.—1st. The improved method of forming mole-ditches herein shown and described, consisting in lining the ditch proper a with a layer of cement c, supported while hardening on the earth, lining or shell b formed over the ditch a, substantially as specified. 2nd. The combination, with the mole-ditcher d e, of the cement-feed hopper or cutter j and a cutter j, for forming the cement-lining cavity, said cutter j being spaced from the ditcher-plow d, between the ditch proper and the cement cavity, substantially as shown and described. 3rd. The combination, with the mole-ditcher d e, of the hopper t and the cutter j, overlapping the rear end of the ditcher-plow d, and the cutter j, and plow d having reversely inclined opposite faces j₁, d₁, substantially as shown and described. 4th. The combination, with the mole-ditch plow d e, of the cement hopper t and cutter j, and substantially connected to the ditch standard e, substantially as shown and described.

No. 18,661. Vehicle Wheel. (*Roue de Voiture.*)

Christian Snyder, Elizabethville, Pa., U.S., 13th February, 1884; 5 years.

Claim.—A vehicle wheel formed by removing a portion of the felloes of an ordinary wheel, contracting its size, expanding a flanged tire by heat and passing it over the felloes while hot, immediately expanding the felloes to fit the entire space between the flanges of the tire and inserting expansion wedges or plugs between the ends of the felloes, substantially as set forth.

No. 18,662. Disintegrating Hopper for Dredges and Excavators. (*Trémie Désagrégante pour Dragueurs et Excavateurs.*)

John A. Ball, Oakland, Cal., U.S., 13th February, 1884; 5 years.

Claim.—1st. In a dredging and conveying apparatus, an elevated hopper dredging mechanism adapted to raise tenacious mud or other material and deliver it therein, a discharge-pipe for conveying the material from the hopper to the point of delivery lower than the hopper, and a pipe connected to a force pump and adapted to cause a stream of water to strike and cut up the mud or dredge material which falls in the hopper, and render it sufficiently liquid to flow through the said discharge-pipe by its own gravity, substantially as described. 2nd. In a dredging and conveying apparatus, an elevated hopper dredging mechanism adapted to raise tenacious mud or other material and deliver it therein, a discharge-pipe for conveying the material from the hopper to the point of delivery lower than the hopper, and a water supply pipe in connection with a force pump, the outlet of the said water supply pipe being located opposite the entrance of the discharge-pipe, said pipe being adapted to cause a stream of water to strike and cut up the material as it falls in the hopper and to carry the same into the discharge-pipe, substantially as shown and described, through which discharge-pipe it flows by its own weight or gravity, as set forth.

No. 18,663. Ore and Mineral Separator. (*Séparateur des Minerais et des Minéraux.*)

Robert H. Richards, Boston, Mass., and Frederick G. Coggin, Lake Linden, Mich., U.S., 13th February, 1884; 5 years.

Claim.—The separating box D, constructed substantially as shown, in combination with the shield C, clear water pipe A and spout B, arranged substantially as shown, whereby the tendency of the clear water is to shoot through the spout B, while the excess is caused to react around said pipe with a uniform pressure, substantially as described and for the purpose herein set forth.

No. 18,664. Cash Register. (*Compteur de Monnaie.*)

Francis M. Tague and Jesse T. Power, Indianapolis, Ind., U.S., 13th February, 1884; 5 years.

Claim.—1st. In a cash-register, the combination of the frame B, the carrying wheels or spools C, D, E, the paper G, the push rod H, retracting springs or weights therefor, a ratchet and pallet d₅ operated by said push-rod and weight or spring, and the puncturing wheel F, said several parts being arranged and operating, substantially as set forth. 2nd. The combination of the carrying wheels or spools, the strip of paper, the cylinder D, the rotary puncturing die and means of operating the same, substantially as set forth. 3rd. The combination of the cover having an orifice and a transparent portion, the carrying wheels or spools, the paper passing over said spools and under said cover, a rotary puncturing die and an alarm bell, substantially as shown and specified. 4th. In a cash-register, the combination of the frame B carrying wheels C, D, E, paper G, bell I, the right angular striking lever l₁, the spring e₄, the push-rod H, working in lugs o₄, the weighted lever h₂, the ratchet wheel d₁, pallet h₅, the pivoted rotating puncturing wheel F having tail-piece f₃ and adjusting screw f₄, substantially as shown and specified.

No. 18,665. Neck Yoke for Horses. (*Joug à Cheval.*)

John J. Magee, London, Ont., 13th February, 1884; 5 years.

Claim.—1st. The combination of the couplings C C₁, provided with flanges e₁ and e₂ respectively, said flanges e and e₂ being provided with bolt holes b₁, b₂, b₃, bolt K, bows B, B and hames J, J, for the purpose of adjusting the hames to collars of different sizes, thereby enabling the same draft-yoke to be used on horses with different sized necks, substantially as shown and described. 2nd. The tongue support L, in combination with a draft neck-yoke for horses, substantially as shown and described, and for the purpose specified. 3rd. The combination of the couplings C C₁, provided with flanges e₁, e₂ respectively, hames J, J and bows B, B, provided with line rings b₄ and connected to the bars A, A by hinge joint connections, draft bar D, tongue support L and clevis E, substantially as shown and described and for the purpose specified.

No. 18,666. Skylight Sash. (*Croisée de Lucarne.*)

Thomas Douglas, Toronto, Ont., 13th February, 1884; 5 years.

Claim.—1st. As an improved skylight sash, in which the glass lights are embedded in putty or other cement, the inverted triangular sash bars B, in combination with the draining troughs C fixed to the apex of the bar B and extending in either side thereof to a point within a vertical line extending from the base of the bar B, substantially as and for the purpose specified. 2nd. As an improved skylight sash, a series of inverted triangular sash-bars B into which the glass lights A are embedded in putty or other cement, the apex of each sash-bar B being provided with draining troughs C, in combination with the trough E extending across the bottom ends of the troughs C and forming a main draining pipe for the same, substantially as and for the purpose specified. 3rd. As an improved skylight sash, a series of

inverted triangular sash-bars into which the glass lights are embedded in putty or ether cement, the apex of each sash-bar being provided with draining troughs C leading into the main drain trough E closed at its ends, in combination with the main trough F having draining apertures G leading into it from the trough E, and draining aperture H leading out from the trough F, but arranged not to come opposite to the draining apertures G, substantially as and for the purpose specified.

No. 18,667. Sugar Bowl. (*Sucrier.*)

Hiram McCarthy, Mount Forest, Ont., 13th February, 1884; 5 years.

Claim.—1st. A bowl having a discharging tube in its bottom, in combination with two valves, one located at or near the top, and the other at or near the bottom of the tube, the said valves being so shaped and arranged that when one must be closed before the other commences to open, substantially as and for the purpose specified. 2nd. In a bowl having a tube extending from its interior, a valve F, shaped as shown and located at or near the top of the tube, a valve G similarly shaped and located at or near the bottom of the tube, in combination with a spindle H, arranged to connect and operate the two valves F and G, substantially as and for the purpose specified. 3rd. A bowl A having a tube E, extending from its interior and provided with valves F and G, located as described and connected together by the spindle H, in combination with the spring I arranged to act on the spindle H, substantially as and for the purpose specified. 4th. A bowl A, having a tube E extending from its interior and provided with valves F and G, located as described and connected together by the spindle H, provided with a handle J, in combination with the spring I arranged to act on the spindle H, and the stops K located on the opposite side of the valve F and arranged to limit its stroke, substantially as and for the purpose specified. 5th. A bowl A, supported by the standards C, fixed to the base plate D, a tube E extending downwardly from the interior of the tube, in combination with the valves F and G, connected together by the spindle H, having a handle J and operated by the spring I, arranged substantially as and for the purpose specified.

No. 18,668. Percentage Calculator.

(*Table de Calcul de Commission.*)

Sylvester J. Tucker, Richmond, Va., U. S., 13th January, 1884; 5 years.

Claim.—1st. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable marker, substantially as shown and described. 2nd. The combination of the stationary and the movable triangles having graduated scales and numbers, and the movable marking-cord and segmental guide for the same, substantially as shown and described. 3rd. The combination of the stationary and the moving triangles having graduated scales and numbers, as described, and the movable and the stationary markers, substantially as specified. 4th. The combination, with the triangles of the movable marking-cord, the loose collar and pin for securing it at one end, and the slide and segmental guide at the other end, substantially as shown and described. 5th. The combination of the stationary triangles, the movable triangle having a longitudinal slot in its base and the set screw for adjusting and holding said triangles in any desired relation to each other, substantially as shown and described. 6th. The combination of the stationary triangle having the percentage-scale B arranged along its hypotenuse, the movable triangle having the number bearing scale D arranged along its hypotenuse and the markers, substantially as specified.

No. 18,669. Door Spring. (*Ressort de Porte.*)

Ira W. Moore, New York, N. Y., U. S., 13th February, 1884; 5 years.

Claim.—1st. In a door spring, substantially as described, the attaching plates *h* constructed with the hub *a*z, projecting into the socket of the door, and having the flaring mouth H and an opening through said hub for the spring, substantially as described. 2nd. The spring *c* attached to the door, substantially as described, and connected by pivot *k* to the head *e* of the device that connects the spring with the jamb, which head projects outwardly from the face of the jamb, in combination with the door plate *b*, having flaring mouth H and spring *d*, substantially as described. 3rd. The combination, with a door spring, substantially as described, of a detachable connecting device consisting of a lever latch *n* and a notched head *e* of said spring, substantially as described. 4th. In a detachable connecting device for door springs, the spring head *e* having shoulders *a*1, bearing against ledges *b*1 of the mouth plate, substantially as described, to relieve the connecting latch *n* of the pressure of the spring when the door is closed, and retain the spring head in the connecting position, as set forth. 5th. The combination, in a door spring device, of the jump plate *p*, having the reversely arranged slots *u* in the flange *v*, and the latch *n*, reversible on a pivot *l*, located relatively to said slots and the hole *q*, for the spring head, substantially as described. 6th. The combination, with the latch *n* of a door spring device, of a flanged jamb plate *p*, having slot *u* for the latch, with a notch *z* in its wall, in which the latch is secured by the tension of the spring, substantially as described. 7th. In a door spring device having a ribbon spring or strip *c*, and a coiled spring *d*, the said ribbon spring doubled and looped around the pivot *k* of the spring head, together with solid or imperforate end fastenings *g*, substantially as described. 8th. The combination of an adjusting screw-threaded attachment *m* having slotted head *l*, with the ribbon spring *c* and coiled spring *d*, of a door spring device, said ribbon spring having solid or imperforate end fastenings *g*, substantially as described.

No. 18,670. Heating Apparatus.

(*Appareil de Chauffage.*)

Robert Johnson and John F. Buerkel, Boston, Mass., U. S., 13th February, 1884; 5 years.

Claim.—1st. The employment, in heaters, of a circulating fluid consisting of a mixture of glycerine and lime water, as set forth. 2nd.

A heater provided with circulating pipes, filled with a liquid consisting of a mixture of glycerine and lime water, substantially as and in the proportions set forth. 3rd. The combination of the stove radiators, outlet pipe *a* and inlet pipe *e*, and coil communicating at the inner end with the inlet, substantially as set forth. 4th. The combination of the radiators stove, two or more flat coils D and branched inlet and outlet pipes, substantially as set forth. 5th. The combination, in a car, of a stove at one end, and radiating pipes communicating with a boiler in the stove and arranged mainly at the end of the car, opposite that in which the stove is placed, substantially as set forth. 6th. The combination, in a car, of a boiler stove, a pipe extending from the stove to the opposite end of the car, back to the centre, to the same side and then to and from the end opposite the stove, to the opposite side as the stove, and back to the centre and then to the stove, boiler substantially as set forth. 7th. The combination of a stove, boiler therein, radiating circulating pipes and outlet and inlet connecting pipes, the former being smallest in diameter, for the purposes set forth. 8th. The combination, in the boiler, of the head, screw pipe, manganese packing and nut and washer, substantially as specified.

No. 18,671. Automatic Feed Water Regulator for Steam Boilers. (*Régulateur d'alimentation d'eau automatique pour Chaudières à Vapeur.*)

John Christman, Syracuse, N. Y., U. S., 13th February, 1884; 5 years.

Claim.—1st. The combination, with an upright cylinder communicating with the steam and water spaces of a boiler, and connected with the water-induction pipe, a float arranged within said cylinder and adapted to close the aforesaid pipe, as and for the purpose specified. 2nd. An automatic feed-water controller for steam boilers, consisting of an upright cylindrical chamber communicating with the steam and water spaces of the boiler, and having a steam education port communicating with the actuating-cylinder of the feed-water pump, a float arranged to control the egress of steam from said chamber, and a horizontal disk suspended from the float and spanning the chamber to receive a direct vertical water-pressure, and thereby overcome any suction that may be exerted on the float by the steam-education port, substantially as set forth. 3rd. The combination, with the cylinder A provided with the steam and water pipes *a* and *b*, of the steam-education port *c* arranged central of the axis of the cylinder, and provided with the valve-seat *d*, and the float F provided with the horizontal disk *f*, and the valve-stem *e* projecting upward from the centre of the float, substantially as shown and set forth. 4th. The combination, with the cylinder A provided with the steam and water pipes *a* and *b* and with the steam-education port *c*, and the float F provided with the valve-stem *e*, as shown, of the push-rod *i*, substantially as in the manner and for the purpose specified.

No. 18,672. Metrical Carburetter.

(*Carbureteur Métrique.*)

Walter M. Jackson, Providence, R. I., U. S., 13th February, 1884; 15 years.

Claim.—1st. The combination, with the metrically-governed mechanism for distributing hydro-carbon liquids to gas or air, of a device for automatically regulating the flow of liquid from a reservoir to a carburetter, a separate box containing such mechanism, a meter and an oil reservoir and connecting pipes, substantially as specified. 2nd. In combination with a meter for measuring gas or air, the metrically-governed mechanism for distributing hydro-carbon liquid to the gas or air, fixed within the meter case and consisting of a liquid receiving box, a distributing wheel therein mounted on a shaft having a cog wheel, connected by gearing with a cog wheel on the dial shaft of the air or gas meter, whereby the hydro-carbon liquid may be supplied to the gas or air in measured and properly proportioned quantities, substantially as described. 3rd. In combination with the liquid hydro-carbon distributing box and the metrically-governed liquid distributing and measuring device therein, a float and valve arranged, as described, for automatically regulating and controlling the admission of liquid to said box, whereby the liquid may be supplied to the gas or air in regulated and measured quantities, as specified. 4th. The liquid hydro-carbon receiving and distributing box having a supply pipe and a discharge opening, in combination with a float and valve properly connected therein for automatically controlling the flow of liquid to the box, and a distributing wheel provided with suitable gearing and the dial shaft of the meter, a liquid hydro-carbon reservoir and a connecting pipe, as and for the purpose specified. 5th. The liquid hydro-carbon receiving and distributing box having a liquid induction pipe provided with a valve seat and a float located in combination with a conical valve seated in the pipe, a float actuated and arranged said box and a connecting pivoted lever, all constructed and arranged as described. 6th. In a hydro-carbon liquid supply and distributing apparatus for metrical carburetters, the displacing chamber having its horizontal area, whereby it is quickly affected by the inflow or outflow of a small quantity of liquid, in combination with the liquid distributing mechanism, and a meter for the measurement of the quantity of gas or air delivered to the carburetter, substantially as described. 7th. In an apparatus for measuring and distributing hydro-carbon liquid to carburet gas or air, the displacement chamber having the valve liquid pipe and valve, and a pivoted displacer connected with the valve and provided with a counterbalancing weight, in combination with the measuring and distributing apparatus connecting and delivering hydro-carbon liquid to carburet gas or air, a displacing chamber having an inlet pipe and valve, and a displacer arranged therein, in combination with a measuring chamber having measuring and distributing devices arranged therein connected by gearing with the dial shaft of the meter and a pipe connecting the two chambers, substantially as described. 9th. The combination, with the displacing chamber and displacer of the induction tube and valve, the tube being provided with a foraminous cap wrapped closely with wire, substantially as and for the purposes specified. 10th. In an apparatus for metrical supplying fluid hydro-carbon to carburetters, a float or displacer

saturated and coated with a compound of glycerine and gelatine, substantially as and for the purpose specified. 11th. In a hydro-carbon liquid supply and distributing apparatus for metrical carbureter, a displacing chamber having a supply pipe, valve and displacer, in combination with the distributing chamber located in the meter case and having a contained measuring wheel, a liquid pipe connecting the two chambers, and a connecting equalizing pipe, the whole arranged and operating, substantially as described. 12th. In a hydro-carbon liquid supply and distributing apparatus for metrical carbureters, a displacing chamber having a supply pipe valve and displacer, in combination with the distributing chamber having a contained measuring wheel, a liquid pipe, connecting equalizing pipe, the whole arranged to operate, substantially as described. 13th. In a hydro-carbon liquid supply and distributing apparatus for metrical carbureters, the tray D₂ being open above the line of fluid, for the purpose of receiving and dispensing the measured fluid to the gas or air to be carburetted, in combination with the distributing chamber having a contained measuring device suitably connected with, and actuated by the meter, and connected to a displacing chamber containing a displacer and a valve by a liquid pipe, substantially as and for the purpose described.

No. 18,673. Car-Coupler. (*Accouplage de Chars.*)

William V. Brown and Thomas S. Poole, Arcadia, N. S., 13th February, 1884; 5 years.

Claim.—1st. In a car-coupler having a pin setting and tripping device and being arranged to hold the coupling link or bar up level for self-coupling, the draw-bar having the joint *a* and the spring *d*, to allow vertical play of the link and to hold the part *b* of the draw-bar level, substantially as described. 2nd. In a car-coupling having the pin-setting block *g* and the spring *f* for setting the pin, the said block and the spring, and the spring holding block *j*, in combination with a draw-bar having a joint *a*, and the part *b* of the draw-bar having the link socket extended through it, to receive said spring and block from behind and being provided with the shoulders *i*, substantially as described.

No. 18,674. Car-Coupling. (*Accouplage de Chars.*)

Dorsey P. Kahl, Lineville, Pa., U. S., 13th February, 1884; 5 years.

Claim.—1st. The combination, with the draw-head A, of the solid guard C₁, the stud *h* secured therein, and one or more linked-shaped guards C₂, &c. below it, each guard being provided with independent spring to thrust it forward, and adapted to draw against the draw-head, substantially as specified. 2nd. The combination, with the draw-head A and the guards C having shoulders *e*, of the keys *f* inserted in the draw-head, as and for the purpose specified. 3rd. The combination, with the draw-head A and the guards C, of the rods *h*, springs *c* and the block D, as shown and described.

No. 18,675. Fire-Escape. (*Sauveteur d'Incendie.*)

Thomas Macdonough, Chebeygan, Mich., U. S., 13th February, 1884; 5 years.

Claim.—1st. A collapsible basket F made in sections, as described, the sections being secured together by light chains, in combination with two lift wires or cables C C, adapted to pass through the handle of the basket, and suitable mechanism to retain said cables in position for a fire-escape, substantially as described. 2nd. A fire-escape consisting of two spools or reels connected together, substantially as described, so as to be readily separated, a lift cable wound on each reel, a basket or cage through the handle of which the cables pass, and mechanism, substantially as described, for securing the cables to a window, the whole constructed and adapted to operate in combination, substantially as set forth. 3rd. The combination of the cable B, supported on its hooks, as described, the cables C C secured to the cables C C pass and the spools E E secured to the cables and having mechanism, substantially as described, whereby said spools may be readily attached together or taken apart, all constructed and operating, substantially as and for the purpose set forth.

No. 18,676. Apparatus for Crimping the ends upon Circular Cans and Preparing them for Soldering. (*Appareil pour Cambrier le bout des Boites Metalliques Circulaires et les Preparer pour le Soudage.*)

William West, Keene, Ont., 14th February, 1884; 5 years.

Claim.—1st. In a machine for crimping the ends upon circular cans, the disk D, mounted upon the end of a rotating shaft B, in combination with the disk O, mounted upon the shaft P, said shaft being moved to and from the disk D by the lever S and spring R, or equivalent devices, substantially as and for the purpose herein described. 2nd. In a can-crimping machine having the stationary and the movable can-holding disks D and O, as shown, the adjusting and holding nuts E, E₁, to regulate the position of the disk D, substantially as herein described. 3rd. The can-holding disks D and O, mounted respectively upon the shaft B having a rotary motion, and the shaft P having an end motion, in combination with the cramping box or boxes, whereby the flange N may be made to approach to, or recede from, the disk D, substantially as and for the purpose herein described. 4th. The can-holding and crimping machine consisting of the holding disks D and O, and the movable crimping flange N, in combination with the lever L and spring K, by which the flange may be moved towards, or retracted from the flange D, substantially as crimping described. 5th. The combination, with the holding and elongated acid trough *c* through which the crimped joint may pass, substantially as herein described. 6th. The combination, with the holding and crimping disks, as shown, of the inclined way or track U,

the endless carrying chain V, and the elongated acid bath *c*, substantially as and for the purpose herein described. 7th. In combination with the way or track U, and the endless chain moving above the track, upon pulleys W, the boxes *a* of the shaft Z, having the vertically movable elastic supports *b*, substantially as and for the purpose herein described. 8th. The elongated acid trough *c* placed at one side of the way or track U, in combination with the cup or trough *e*, and the tank *d* closed at the top and having an opening at the side near the bottom, whereby the level of the acid in the trough *c* is maintained, substantially as herein described.

No. 18,677. Traction Attachment for Road Engines. (*Appareil de Traction pour Locomotives Routieres.*)

Albert S. Hanscom, Moorhead, Minn., U. S., 16th February, 1884; 5 years.

Claim.—1st. In a traction attachment for road engines, the combination of the driving-wheels A, A, frames B, B, track-chains C, C and tension springs E, E, substantially as shown and described. 2nd. In a traction attachment for road engine, the combination of the cylinders K, K, piston rods H, H and I, I, and springs G, G, for raising the guide-wheel and throwing the entire weight of the machine on the driving-wheels, substantially as described. 3rd. In a traction attachment for road engines, the combination of driving-wheels A, A, connected by a track chain C, the frames *s*, B and M, axles T and X, the sliding blocks D, D, bars F, F and springs E, E for regulating the tension of the track chain, the guiding-wheels N carried by the forward end of the frame M, and means for raising said frame and guiding-wheels, whereby the entire weight of the machine is thrown on the driving-wheels, substantially as shown and described.

No. 18,678. Fire-Escape. (*Sauveteur d'Incendie.*)

Daniel R. Clymer, Reading, Penn., U. S., 16th February, 1884; 5 years.

Claim.—1st. In combination with a building to which they may be adapted, and with the floors, joists, trimmers and ceilings thereof, a series of well holes F provided with removable floor doors G, and ceiling doors H hung on hinges I and secured by hooks K and staples J, or their equivalents, and concealed within the well holes thus arranged, a flexible ladder L permanently hung therein, the whole constructed, arranged and adapted to be used, substantially as and for the purpose described. 2nd. In a building, a series of well holes F piercing through floor and ceiling, as described, and provided with floor doors G, ceiling doors H and a flexible ladder L permanently secured therein, the said wells being placed two or more feet horizontally on floor plan to one side of the well opening above or beneath the same, whereby the descent is made from story to story on an unbroken landing, substantially as and for the purpose set forth. 3rd. In combination with the landing floor of a fire-escape well and its ladder, as described, the openings V, or caps V₁, bar R₁ or staples T, the chains O, loops or rings P, and swivel buttons S, whereby the ladder is steadied between floors, as and for the purpose set forth. 4th. In combination with a fire-escape well provided with door G, the door H connected by the hinges I to the rear trimmer C₁, said door being extended rearward into a space provided therefor, whereby said door, when released, will drop into a vertical position without crushing the ceiling, substantially as shown and for the purpose set forth. 5th. In combination with a fire-escape well provided with doors and ladder, as described, an alarm device Q connected to the floor door G, so that a movement of the latter will give an alarm to guard against unwarranted intrusion, substantially as and for the purpose set forth.

No. 18,679. Device for Manufacturing Car Wheel Tires. (*Appareil pour la Fabrication des Bandages de Roues des Chars.*)

James A. Facer and Adolph Schawb, Philadelphia, Penn., U. S., 16th February, 1884; 5 years.

Claim.—1st. The combination of the hammer-die A comprising the main portion *m* with central projection *a* in front, and the anvil die B having a projection *b* and flat face *n*, the projection *a* being above the projection *b*, and the face *n* of the anvil die being of substantially the same dimensions as the portion *m* of the hammer die, as set forth. 2nd. The combination of the anvil die B with the hammer die A having a projection *a*, the lower face of which is some distance above the face *m* of the said die, as set forth. 3rd. The combination of the anvil die B and its projection *b*, with the hammer die A having the projection *a* formed with a groove *w*, as set forth.

No. 18,680. Sewing Machine. (*Machins à Coudre.*)

William Redett, Fredericksburg, Ohio, U. S., 16th February, 1884; 5 years.

Claim.—1st. In a sewing machine, the combination of a crank, a pivoted pitman, shuttle-driving lever connected at one end to said pitman by a universal joint and having the shuttle-carrier secured at its opposite end, and feed-driving levers connected by universal joints to said shuttle lever and connected to the feed-bar, as set forth. 2nd. In a sewing machine, the combination of the levers G and H, said levers having a circular motion, substantially as described, with the feed-bar I provided with a longitudinal slot *k*, and a vertical slot *i*, by means of which the ends of the levers are adapted to operate the said feed bar, as set forth. 3rd. In a sewing machine, the combination, with the slotted feed-bar, of the levers G, H and adjustable fulcrums *g*, *h*, said levers being connected to and operated by the shuttle lever, as set forth. 4th. In a sewing machine, the combination of the needle plate P with the piece *w*, hole *u* and recess *v*, with the shuttle provided with a spring point, as set forth. 5th. In a sewing machine, a shuttle carrier adapted to embrace the shuttle and carry it free and clear of any bearing or supporting surface, and provided at one end with a spring retainer, and at its opposite end with a locking stitch, as set forth.

No. 18,681. Steam Actuated Valve.*(Soupape Mue par la Vapeur.)*

Henry Kessler, San Francisco, Cal., U. S., 16th February, 1884; 5 years.

Claim.—In a steam-actuated valve, the combination of the cylinder A having a piston B provided with piston rod Br, the steam chest C having ports C₁, C₂, D, and exhaust spout J, J₁, the plunger E having heads E₁, E₂ and rod E₃, said rods B₁, E₃ being connected by means of adjustable collars and links, as shown, the rabbeted valve G having ports G₁, G₂, G₃, and the reversing valve H having ports H₁, H₂, H₃, all substantially as described.

No. 18,682. Vehicle Spring. (Ressort de Voiture.)

Harry B. Cornish and Samuel E. Hall, Hampton, Iowa, U. S., 16th February, 1884; 5 years.

Claim.—The combination, with the framing B and vehicle-bed, of the shafts C journalled on the underside of the said bed bars c₂ extended outward from said shafts and connected with the framing B. Bars c extended inward from said shafts and having a series of notches c₁ formed on their outer edges, and the springs having one end made fast to the vehicle-bed, and their outer ends provided with a loop slipped over the bars c and engaging the notches c₁, whereby the said springs are capable of adjustment to support the bed A in a level position, with the load unequally disposed thereon, substantially as and for the purposes set forth.

No. 18,683. Bicycle. (Bicycle.)

De Lancy Kennedy, New York, N. Y., U. S., 16th February, 1884; 5 years.

Claim.—1st. The combination, in a bicycle, of a fixed or non-pivoted main fork, a main wheel mounted therein, a pair of cranks and a system of frictional gear for communicating power from the cranks to the main wheel, substantially as set forth. 2nd. The combination, in a bicycle, of a fixed or non-pivoted main fork, a main wheel mounted therein and having friction gear wheels revolving therewith, with an upper system of friction gears mounted in sliding bearings in the main fork, and with cranks for revolving said gears and main wheel, substantially as set forth. 3rd. The combination, in a bicycle, of a fixed or non-pivoted main fork, a main wheel mounted therein, and having friction wheels revolving therewith, with an upper system of frictional gear, a perch or back bone attached to, and having vertical movement with the shaft of the upper wheels of the system or crank shaft, substantially as set forth. 4th. The combination, in a bicycle, of a fixed or non-pivoted main fork, a main wheel mounted therein, a rear steering wheel mounted in a vertically pivoted fork, treadles mounted on the main wheel shaft, and connections between said treadles and the steering wheel, substantially as set forth. 5th. The combination, in a bicycle, of a fixed or non-pivoted main fork, a system of frictional gear in sliding bearings, a perch connected with the shaft of the upper wheels of the system treadles mounted upon the main wheel shaft, a rear steering wheel mounted in a vertically pivoted fork, and rods connecting the treadles with the shaft of the steering wheel, substantially as set forth. 6th. The combination, in a bicycle, of a main wheel and a system of grooved and elastic tired friction gears, substantially as set forth. 7th. The combination, in a bicycle, of the treadles having arms, the main fork and springs connected thereto bearing on the arm of the treadles, substantially as set forth. 8th. Combined with a bicycle of the character described, cranks capable of adjustment, substantially as set forth. 9th. Combined with a bicycle of the character described, cranks having a ratchet and pawl attachment, substantially as set forth. 10th. The combination, in a bicycle, of a main fork perch and a rigid rod connection between the fork and perch, substantially as set forth. 11th. In a bicycle, a main fork having slots combined with gearing whose shafts have vertical movement in said slots, substantially as set forth. 12th. In a bicycle, a main fork having a slot combined with a perch connecting with said slot and having vertical movement therein, substantially as set forth. 13th. The combination, in a bicycle, of a fixed or non-pivoted main fork, a main wheel mounted therein, a rear steering wheel mounted in a vertically pivoted fork and treadles, and connections for operating the steering wheel, substantially as set forth.

No. 18,684. Process for Making Felt Boots, Shoes and Stockings. (Procédé pour Confectionner les Chaussures et les Bas de Feutre.)

James Brandy, Lawrence, Mass., U. S., 16th February, 1884; 5 years.

Claim.—1st. The improved process for making a felt boot, shoe or stocking, herein described, the same consisting essentially in winding the sliver of felt or felting material, as it comes from the card, directly onto a revolving cone or former, having a foot-piece or foot-pieces which conform somewhat to the shape of the foot of a finished boot, shoe or stocking, said sliver being delivered to, and wound upon the cone or former in such a manner as to cover the bottom and all other parts of said foot-piece as well as the leg portion of the cone, then removing the bat thus formed and hardening, fulling and treeing the same, substantially as set forth. 2nd. The improved process of making a felt boot, shoe or stocking, herein described, the same consisting essentially in winding the sliver of felt or felting material as it comes from the card directly onto the cone or former, having a foot-piece or foot-pieces, the cone or former being revolved and also moved backward and forward in the arc of a circle, while receiving the sliver, and the leg and foot portion including the sole produced at one operation, the boot, shoe or stocking being subsequently hardened, fulled and treed, substantially as specified. 3rd. Forming the foot-portion including the sole and the leg of a felt boot, shoe or stocking at one operation, from a sliver of felt or felting material delivered directly from the card onto a revolving cone or former having a foot-piece, substantially as and for the purpose set forth. 4th. As an improved article of manufacture, a seamless felt boot, shoe or stocking, the leg and foot portions of which, including the

sole, are formed from a sliver of felt or felting material wound upon the cone, substantially as described and subsequently hardened, fulled and treed, substantially as specified.

No. 18,685. Stump Machine. (Arrache-Souche.)

Aza A. Howe, Ulysses, Penn., U. S., 16th February, 1884; 5 years.

Claim.—1st. In a stump-puller, the hook i having the pulley j in its loop, and the depressions s and u near its point, for the reception of the adjacent links of the chain, substantially as set forth. 2nd. In a stump-puller, the combination, with the long hook i having pulley l and link depressions s, u, of the short link K having link depressions s, u, and supported upon the same lever as the hook i and working above, substantially as specified. 3rd. In a stump-puller, the combination, with the wooden lever a having the cap plate b secured thereon, substantially as specified. 4th. In a stump-puller, the combination, with the clips c, c and provided with the journals d, d, bail f, notches h, h and ring g, of the long grappling hook i having pulley j, the short grappling hook K, the springs n, n connecting said hook and the chain m, substantially as specified.

No. 18,686. Mechanical Movement. (Mouvement Mécanique.)

Emanuel M. George, Three Rivers, Mich., U. S., 16th January, 1884; 5 years.

Claim.—1st. The combination, with a crank or its equivalent and its operating device, of mechanism, substantially as described, connected to, and carried by the operating means and travelling in an orbit, the centre of which is the centre of the cranks, motion and construction to overcome the dead centre of said crank, as set forth. 2nd. In a device for the purposes described, and in combination with a case A and crank pin B moving in a circular orbit, the slide C and springs D constructed to hold the slide centrally, the parts being arranged and operating, substantially as and for the purposes set forth. 3rd. In a device for the purposes described, and in combination with the case A, crank pin B and slide C and springs D, the ratchet E, pins b, b₁ and pawls c, d, the parts being constructed and arranged to operate, substantially as and for the purposes set forth.

No. 18,687. Apparatus for Cultivating Soil. (Appareil pour Cultiver la Terre.)

John Cooke, Richmond, Eng., 16th February, 1884; 5 years.

Claim.—Apparatus for cultivating soil consisting of cutting discs, fixed in combination with forwardly curved cutting blades on a shaft caused to revolve rapidly while it advances, substantially as and for the purposes herein set forth.

No. 18,688. Draw-Bar for Connecting Locomotive and Tender. (Barre & Attelage de Locomotive.)

Thomas B. Purves and Thomas C. Craven, Greenbush, N. Y., U. S., 16th February, 1884; 5 years.

Claim.—1st. A draw-bar for locomotives composed of two parts, one part for connections with the locomotive sustained by a support between its extremities, and the other for connection with the tender of other vehicle, the parts being united with each other by a movable joint, substantially as and for the purposes set forth. 2nd. In combination with a draw-bar for locomotives, the strut jointed thereon, and a supporting piece or block, substantially as and for the purposes set forth. 3rd. In combination with a draw-bar for locomotives, the draw-link jointed thereon, and a supporting piece or block, substantially as and for the purposes set forth. 4th. In combination with a draw-bar for locomotives, the strut and the draw-link jointed thereon, movable independently of each other and arranged to operate as explained, and a supporting piece or block combined, substantially as and for the purposes set forth. 5th. The saddle provided with rollers and arranged to support and carry the rear end of the herein described jointed draw-bar, substantially as shown and described. 6th. The pendants suspended from the locomotive and provided with means, substantially as described, for adjusting the support for the rear end of the bar, substantially as and for the purposes explained. 7th. In combination with the travelling saddle, the supporting-yoke and the pendants secured to the locomotive, said yoke being made adjustable upon the pendants, substantially as and for the purposes set forth. 8th. In combination with the draw-bar, the tender, for thereon and arranged, substantially as explained, so that the front end of said link is free to vibrate horizontally with the tender, for the purposes and objects set forth. 9th. In combination with the buffer draw-bar having the strut and draw-link jointed thereon, to be applied upon the tender and arranged, substantially as shown, to receive and transmit the thrust upon the strut on the adjustable link for the purpose and objects set forth. 10th. In an attachment for locomotives, a draw-bar supported at its rear end in an adjustable travelling saddle and carrying a strut and draw-link, each jointed independently to said bar, and the whole combined and arranged to operate upon the tender, in the manner and for the purposes set forth.

No. 18,689. Brick Machine. (Machine à Briques.)

John H. Konefes, Quincy, Ill., U. S., 16th February, 1883; 5 years.

Claim.—1st. In a brick-machine, the stationary table C, in combination with the revolving mold-table B and the plungers E, said mold-table and plungers being connected to mechanism, substantially as and set forth, whereby the two are operated jointly, the stationary table for the purpose set forth. 2nd. In a brick-machine with the plungers E, G, H, constructed to operate substantially as and for the purpose specified. 3rd. In a brick-machine, the stationary table C having circular or curved arms a connected to the centre post b, in combination with the mold-table B, jointed plungers Y₃, lever Y₄, the cam W and lever T, substantially as and for the purpose set forth. 4th. In a brick-machine, the stationary table C and the revolving plunger O, plungers E, in combination with the plungers G, H, forked plunger O, rods F, eccentrics I, slotted cams K, N and lever O, substantially as

and for the purpose set forth. 5th. In a brick-machine, the stationary table C, curved arms a, jointed plunger Y3, bolt Tr, cam W, spring U, in combination with the revolving mold-table B, bolt Y4, latch Y5 and springs c, substantially as and for the purpose specified. 6th. In a brick-machine, the combination, with the revolving table B, of the plungers E carrying the three-cornered bevelled dies i, substantially as and for the purpose specified. 7th. In a brick-machine, the revolving table B having the loose bottoms l arranged within the molds D, in combination with the adjustable carriers m, substantially as described. 8th. In a brick-machine, the mold-table B having loose bottoms l resting upon the adjustable carriers m, in combination with the plungers R, slotted cam K and lever Q, for pushing down the loose bottoms of the moulds, substantially as and for the purpose set forth. In a brick-machine, the combination, with the plungers E carrying the three-cornered bevel-dies i, of the revolving table B with loose bottoms l, arranged within the molds D and resting upon adjustable carriers m, substantially as and for the purpose described. 10th. In a brick-machine, the combination, with the tables B, C, plungers E, G, H and the forked plunger O, of the several cams, eccentrics, shafts and gearing for operating them, substantially as and for the purpose set forth.

No. 18,690. Bit Brace. (*Vilbrequin*)

John Watson, Buffalo, N. Y., U. S., 16th February, 1884; 5 years.
Claim.—1st. A bit brace consisting of the slotted barrel a1, provided with the curved portions b3, in combination with the jaws provided with the pins d, the head a, the follower and the screw-sleeve, substantially as and for the purposes described. 2nd. In a bit brace, the combination of the follower a4, guideways b and the screw sleeve a3, substantially as and for the purposes described.

No. 18,691. Truck for Moving Reapers.
(Charriot pour Moissonneuses.)

Robert Chestnut, Richmond, Ind., U. S., 16th February, 1884; 5 years.
Claim.—1st. The curved arms E, E, when inclined upward and forward, in the manner and for the purpose, as herein set forth. 2nd. The arrangement and combinations of the wheels A, A, axle F, arms R, E, stay rod N and tongue D, substantially as described. 3rd. The pedestal L, in combination with the axle F, connected and operating as described. 4th. In carriage or truck, the rods H, H and I joined at their front ends, in combination with the hooked plate G, in the manner and for the purposes set forth.

No. 18,692. Machine for Making Twine, Cordage, &c. (*Machine pour Fabriquer la Ficelle, le Cordage, &c.*)

George L. Brownell, Worcester, Mass., U. S., 16th February, 1884; 5 years.
Claim.—1st. The revolving frame A, divided into two compartments B, B and provided with the vertical shafts F, F having scored cones G, G, gear wheels E, E and H, H, in combination with the central tube C having scored pulley D and cog gearing B, and the gear I and plate P, substantially as and for the purpose specified. 2nd. The revolving frame journaled in the main frame A of the machine, and divided into an upper and lower compartment B, B, in combination with the mechanism for drawing off and stretching the cord located in the lower compartment B, and the device for winding for the same located in the upper compartment B, substantially as and for the purpose specified. 3rd. The tube C provided with the cog spindle L and the mechanism for drawing off, stretching and winding the cord, substantially as and for the purpose specified. 4th. The revolving frame divided into two compartments B, B and having its main frame A, tube C, spindle L and compressor M, substantially as shown and for the purpose specified. 5th. The central spindle L provided with the disk d and laying block f, and arranged within the tube C having score pulley D and cog gear E, in combination with the cog gears F, E, H, H and I, I, shafts J, J, compressor M, cones K, K, cog wheels O, O, plate P having cogs q, reel N and frame A, substantially as and for the purpose specified. 6th. The combination of M provided with the holes i, i, screws h, h and pin i, in combination with the studs G, G, laying block f and mechanism for drawing off, stretching and winding the cord, substantially as and for the purpose set forth. 7th. The plate P provided with the cogs q and reel A, in combination with the shafts J, J, having the surfaces l, l, the cog wheels O, O, leather washers m, m and s, s, steel washers n, n and clamping nuts p, p, substantially as and for the purpose specified. 8th. The plate P provided with the cog q and the reel N, in combination with the revolving frame divided into two compartments B, B, shafts J, J, cog wheels O, O, main frame A and mechanism for revolving said shafts J, J, to effect the drawing off and stretching the cord, substantially as specified. 9th. The hollow spindle L provided with holes c of a number to suit the number of thread mechanism, in combination with the tube C, compressor M and the mechanism for drawing off, stretching and winding the cord, substantially as and for the purpose specified. 10th. The hollow spindle L arranged within the tube C and provided with holes c, and circular laying block f, all substantially for the purpose specified. 11th. The shafts J, J provided with the scored cones K, K, in combination with the mechanism for drawing off and winding the cord, substantially as and for the purpose specified.

No. 18,693. Railway Car Axle Journal Lubricator and Journal Box Case. (*Graisneur de Fusée d'Essieu de Char de Chemin de Fer et Boîte à Graisse.*)

Giles F. Gear, Cleveland, Ohio, U. S., 16th February, 1884; 5 years.
Claim.—1st. In journals for railway car axles, the ring E secured to the end of the journal of said axle bar A, angular boss interposed between the said bar and ring, slotted arms secured between the ring

and bar by pins inserted in the slots of the arms that they may have a free radial movement, and said arms having one end G pointed and the opposite end provided with a brush, in combination with the journal and journal box, substantially as described and for the purpose set forth. 2nd. In journal brasses or boxes for railway car axles, a journal box having along the inner sides thereof a groove m and oil passages leading from the outside of the box to the said grooves respectively, for conducting the oil to the journal, in combination with the revolving radial arms and brushes attached to the said arms, substantially as herein described and for the purpose specified. 3rd. The semi-circular guard 1 and guard 2 arranged in relation to, and in combination with the revolving radial movable arms and their terminal brushes, substantially as described and for the purpose set forth. 4th. In railway car axle journal and axle boxes, the combination therewith of the ring F, bar H and angular boss interposed between the said bar and ring, slotted revolving radial movable arms with their terminal brushes and pointed ends, guard rings, oil reservoir and journal box provided with a groove along each of its inner edges, and oil passage extending from the outer side of the said journal box to the said grooves respectively, and case inclosing the lubricating mechanism, constructed and arranged to operate in the manner substantially as described and for the purpose specified. 6th. In combination with a railway car axle journal, a journal box or brass having, along in its two inner longitudinal edges, a groove and oil passages extending from the outside of the journal box to the said grooves respectively, for conducting oil thereto, in the manner substantially as described and for the purpose specified. 6th. In combination with the journal B and journal box case, the dust guard consisting of the plates q and q1, interposed between which is a packing of asbestos, or other suitable material, and springs l, l, whereby the said guard is retained in place, substantially as described and for the purpose specified. 7th. In journal box cases for railway car axles, the door P having in the lower edge a groove adapted to fit the lower edge of the doorway of the case, and along the inner edge of the said door, cleats arranged to fit in between the sides of the doorway and provided with hinge ears C1, C1, and an intermediate cam D1, in combination with the axial bolt passing through said ears and through the slotted holes a1, in the ears R and S, substantially as herein described and for the purpose set forth. 8th. In journal box cases for railway car axles, a cam secured to the axial bolt A11 and provided with a supporting arm and a lifting arm c1, a check and locking arm d1 constructed and arranged between the hinge ears of the door of the case, in combination with said door and journal box case, substantially as described and for the purpose set forth. 9th. In journal box cases, the combination of the door P, constructed as herein described and hinged to the case by an axial bolt passing through the hinge ears of the door, and through the slotted ears R, S, and having secured thereon a cam provided with a supporting arm, a lifting arm and check locking arm d1, case and handle B1, substantially as described and for the purpose specified. 10th. In a case for enclosing the journal and journal box of a railway car axle, a case having the door thereof provided with a groove along its lower edge, and adapted to fit so as to embrace transversely the lower edge of the doorway of the case, forming a tongue and groove connection of the two parts, substantially as herein described and for the purpose set forth. 11th. In combination with the handle B1 provided with a boss, a button R1 adapted to engage said boss, in the manner as set forth and for the purpose specified.

No. 18,694. Process for Bleaching and Apparatus Therefor, part of such Process being also Applicable to Finishing. (*Procédé de Blanchiment en parti applicable à l'appret, et appareil pour cet objet.*)

Jacob B. Thompson, New Cross, Eng., 16th February, 1884; 5 years.
Claim.—1st. The herein described process for bleaching vegetable fibre, threads and fabrics, the same consisting in, first, boiling them in a solution of cyanide of potassium or sodium, then subjecting them to alternate baths of a solution of chloride of lime and of carbonic acid in a closed vessel, and lastly passing them through a solution of triethyroseaniline and oxalic acid with suitable washings, all substantially as described. 2nd. An apparatus for bleaching linen and cotton, or other vegetable fibres or fabrics, composed of the tanks A and B for the bleaching liquor, the bleaching vessel C, the gas holder D, the pipe a connecting vessels A and C, the pipe c connecting vessel C and holder D, discharge pipes c and k from the vessel C, and a pump j, for transferring the liquid from vessel B to vessel A, substantially as shown and described. 3rd. In the process of "Finishing," the use of a solution composed of triethyroseaniline and oxalic acid, for the purpose of tinting the starch.

No. 18,695. Universal Lubricator. (*Graisneur Universel.*)

James Potter, Chicago, Ill., U. S., 16th February, 1884; 5 years.
Claim.—1st. A universal lubricator, in combination with a wick or its equivalent, to convey the required amount of lubricant from a supply chamber to the surface to be lubricated, all for the purpose described and set forth. 2nd. In a lubricator, the combination of the reservoir a, the receiver b, the blanks d provided with flanges d1 and shoulders d2 and d3, the feed slide e provided with teeth e1, the thumb piece e2, the springs f, with a wick o, all for the purpose described and set forth. 3rd. In a lubricator, the combination of the reservoir a, the receiver b, the blanks d provided with flanges d1, the springs h, the rod i, the cams j, the clamp k, the cover l, arranged as specified, with clamps m provided lip m2, all for the purpose described and set forth. 4th. In a lubricator, the reservoir a, the receiver b provided with a handle q, the indenture n, in combination with clamps m and flange m1, the openings n4 and wick o, the whole operated as described and set forth. 5th. In a lubricator, the wick o provided with loop p, the points p1, in combination with clamps m provided with indenture m3, all for the purpose described and set forth. 6th. In a lubricator, the clamps m provided with V-shaped passages arranged as specified, and openings m5, in combination with a wick o, all for the purpose described and set forth.

No. 18,696. Draw-Bridge Alarm.*(Sonnerie de Pont-Lévis.)*

Ernest F. Meyer, Lake Charles, La., U. S., 16th February, 1884; 5 years.

Claim.—1st. The combination of a longitudinal sliding rod, a bell-crank lever acting against one end of the same, a spring forcing the rod against the said lever, the block or projection on the bridge for operating the lever, and a transverse rock-shaft having the upwardly-projecting arms, which are adapted to be acted upon by the wheels of the passing train, and provided with an arm arranged to be engaged by the end of the sliding rod, this said rock-shaft being adapted to operate an alarm, as set forth. 2nd. The combination of the operating rock-shaft, having the actuating-spring, the end arms adapted to be depressed by the wheels of the passing train, the downwardly-projecting arm and the arm for actuating the hammer of an alarm mechanism with a longitudinally-sliding rod, arranged to engage this said downwardly-projecting arm to throw the mechanism out of operation, and means for operating this sliding rod, as set forth. 3rd. The combination of the bell-crank lever, the longitudinal beams on which the track is built, having the brackets, the longitudinal rod sliding in these brackets and acted upon by one end of the bell-crank lever, the spring arranged on the rod and abutting against one of the brackets and a transverse rock-shaft carrying arms by which it can be depressed, and provided with an arm against which the end of the sliding rod operates, the said rock-shaft being adapted to operate an alarm as it is depressed, as set forth. 4th. The combination of a transverse rock-shaft adapted to be actuated by the wheels of the passing train and provided with a projecting arm, another transverse rock-shaft carrying a bell-hammer, at the end of which hammer is arranged a spring-actuated latch that is hinged on rear end of the hammer, and is engaged by the protecting arm on its downward movement to raise the hammer, and is thrown over on its hinges by the upward movement of the arm to permit the passage of the same, substantially as and for the purpose set forth. 5th. The combination of the transverse rock-shaft having the end arms that are acted upon by the wheels of the passing train, and provided with the projecting alarm-operating arm, the spring for actuating this shaft, the transverse rock-shaft carrying the bell-hammer, the spring for actuating this shaft, the latch-block hinged to the rear end of the hammer and having the springs secured to the shaft and the bell or gong, as set forth. 6th. The combination of the bell-crank lever, the projection for operating this lever, the longitudinally-sliding rod having the actuating-spring, the spring-actuated rock-shaft having the end arms, the downwardly-projecting arm and the alarm-operating arm, the transverse rock-shaft carrying the bell-hammer and having the actuating spring, the spring-actuated latch block hinged to the rear end of the hammer and the bell or gong, as and for the purpose set forth.

No. 18,697. Cash Conveying Apparatus.*(Appareil de Transmission de la Monnaie.)*

Joseph W. Flagg, Worcester, Mass., U. S., 17th February, 1884; 5 years.

Claim.—1st. The combination, with the inward inclined track A A, of the rigid receiving track C, said track C being elevated above and directly over the track A A, so the carriers on the track A A may pass beneath it, the rails of the track C being in the same vertical plane as the corresponding rails of the track A A, as shown and described and for the purpose set forth. 2nd. The combination, with the inward inclined track A A, of the rigid receiving track C, said track C being elevated above and directly over the track A A, so the carriers on the track A A may pass beneath it, the rails of the track C being at its lower end in the same vertical plane as the corresponding rails of the track A A and at its upper end curved so as to receive the carrier from the side, as shown and described, and for the purpose set forth. 3rd. The combination of the inward inclined track A A having a tripping bar, and an elevator having a tilting shelf E and a vertical back G, said shelf and back forming an acute angle in which the carrier rests, as and for the purpose set forth. 4th. The elevator consisting of a platform with back G, tilting shelf E pivoted and forming with the back G, an acute angle to hold the carrier, and means for elevating the same, in combination with track A A and suitable tripping mechanism, as and for the purpose herein set forth. 5th. In an automatic cash carrying system, the combination, with an inward inclined track A, of an outward inclined track B having one or more circular openings J, J1 of varying diameters, and having the portions of the rails on one side of said openings tangent to the curved sides of the openings, as and for the purpose hereinbefore set forth. 6th. In an automatic cash-carrying system having rolling cash-carriers of varying diameters, an outward distributing track B having one or more circular openings J, J1, J11, of varying widths, and having the portions of the rails on one side of said openings tangent to the curved sides of the openings, as and for the purpose hereinbefore set forth. 7th. The carrier consisting of the hemispheres S and T with an interior cavity and provided with suitable means of attachment and having elastic cushion M between the meeting edges of the hemispheres, as and for the purpose hereinbefore set forth. 8th. A cash-carrier consisting of a hollow receptacle made in halves, each half having a diaphragm n or n1 of sheet rubber, or other suitable elastic material, and arranged to hold the cash in the centre of the carrier, as and for the purpose hereinbefore set forth. 9th. A cash carrier consisting of the hollow hemispheres S and T, each having an elastic diaphragm n or n1, as and for the purpose hereinbefore set forth. 10th. In a cash carrier, the two elastic diaphragms drawn over the ends of metallic tubes and passing down the outside of said tubes and being fastened at or near the opposite ends of the tubes so that different portions of the diaphragm may be brought in contact with the edge of the tube, as and for the purpose hereinbefore set forth. 11th. In a cash carrier, the locking device consisting of the spring catches i, i, and rim k k, the catches having bevelled faces, and the rim having openings r, r and notches r1, r1, as and for the purpose hereinbefore set forth. 12th. The rail forming an angle in its cross section, whose lower side supports the carrier and forms the rail proper, and whose upright sides U serves as a guard, in combination with the elastic cushion V consisting of strips of elastic material laid upon, and secured to the upper face of the side forming the rail

proper, as and for the purpose hereinbefore set forth. 13th. In a way or track, the rails having an elastic cushion V, the upright sides U U and the metallic strips W, as and for the purpose hereinbefore set forth. 14th. The combination, with the main inward track A and elevating receiving track C, of the guards H, as and for the purpose hereinbefore set forth. 15th. The combination, in a cash system, with an outward track having suitable means of distribution, of the carriers and receiving baskets or other receptacles, of a winding device attached to said baskets and consisting of a drum b, gears p and g1, inner drum or shell d with an internal gear e, spring h and fixed spindle, as and for the purpose hereinbefore set forth. 16th. The combination of drum pinions f and g1, arm g, drum or shell d and internal gear e, spring h attached to the drum d, and to the fixed spindle a, as and for the purpose hereinbefore set forth. 17th. The combination, with an outward distributing track having a series of graduated openings, and a series of graduated carriers adapted thereto, of means for adjusting or varying the width between the rails at will, as and for the purpose hereinbefore set forth. 18th. In combination with tracks B having openings J, J1, the adjusting rod M with a right and left hand screw-thread, lugs O, O1 and check nut N, as and for the purpose hereinbefore set forth. 19th. In a cash system, the combination, with two or more outward distributing tracks, of a series of cash carriers having a designating band of color around the centre, and arranged in about equal spaces on either side of the dividing line of the carriers, as and for the purpose hereinbefore set forth. 20th. The combination, with the outward track of a cash carrier, of a ball Y or body attached to one end of the outward track and presenting the similitude in form and colour of one of the cash carriers belonging to said track, as and for the purpose hereinbefore set forth. 21st. In a cash system, the combination, with a distributing track and receiving baskets, of the winding drums L and their springs h, said springs being attached to the drums so that their tension will sustain the basket against the tracks, as and for the purpose hereinbefore set forth. 22nd. In a cash carrying system having outward tracks designated by different colours, the hollow rolling carriers, each having a designating mark consisting of a band of colour passing around the carrier, as and for the purpose hereinbefore set forth. 23rd. The carrier consisting of two hemispheres S and T having an interior cavity and suitable means of attachment, and having a covering of leather, rubber or other similar material, as and for the purpose hereinbefore set forth.

No. 18,698. Pulley for the Transmission of Power by Belt. *(Poulie de Transmission de la Force par Courroie.)*

Julius E. Waterous and James N. Peel, Brantford, Ont., 16th February, 1884; 5 years.

Claim.—1st. The combination of cast-iron hub F, wrought iron or steel arms B, adjustable arm head A and wrought iron or steel rim C, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the arm head A with inner adjustable nut h, or outer adjustable nut P, with jam nuts J, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of rim C and arm head A, to form the balancing pockets D, substantially as and for the purposes hereinbefore set forth.

No. 18,699. Car-Coupling. *(Accouplage de Chars.)*

Thomas Gates, Robert L. Adams and John W. Adams, Belfast, Tenn., U. S., 16th February, 1884; 5 years.

Claim.—1st. In a car-coupler, the combination of the lower half or draw-head section A1, having link-mortise a1, and provided with mortise a2, made narrower than the mortise a1, extended down therefrom midway its walls and below the mouth of the draw-head, the upper section A having its mortise A3 flared down to mortise a1, and provided with mortise a, corresponding in width to, and arranged above the mortise a2, and the pin-support corresponding in width with mortises a, a2, and provided with a pin-supporting shoulder, all arranged and operating substantially as set forth, of the car-coupler, the combination, substantially as set forth, of the draw-head having pin-opening A4, and the pin-support D, pivoted in the draw-head and provided with shoulder d, having an extension above formed thereon, and constructed with jaws d3, and an extension above its pivotal point adapted to project slightly under the pin-opening when the support is pushed back, substantially as described and shown and for the purpose specified. 3rd. The car-coupling, substantially as described and shown, composed of the draw-head having pin-opening A4, and provided in its lower half or section with mortise a2 extended down below the mouth of the draw-head, and having the link-opening a1, in which are formed the link-seats a, and having its upper half or section constructed with the mortise a2, and above, and corresponding in width with the lower mortise a1, narrower than the mortise a1, the link-support D made of a having equal to the mortises a, a2, and constructed with shoulder d having concave link-seat d1, and having the jaws d, d3, projected forward on opposite sides of said concave seat and pivoted in the upper mortise a1, with its lower end extended into the mortise a2 below the draw-head, of the draw-head, the spring F secured at one end to the draw-head in rear of the link-support, and having its forward end rested in against the said support, and the pin having its lower end rested in concave seat d1, all substantially as described and shown and for the purposes specified.

No. 18,700. Bee-Hive. *(Ruche.)*

Alexander Fraley and William D. Malone, Grayson, Ky., 16th February, 1884; 5 years.

Claim.—1st. In a bee-hive, the combination, with the brood chamber A1 and the bottom board of the feed chamber, of the box proper B, and the hinged lid c d provided with the flanges l, m, substantially as herein shown and described. 2nd. In a bee-hive, the combination, with the brood-chamber A1, having an opening in its bottom covered by wire gauze B, and the downwardly opening door E of the box X, and the honey-board P provided with an opening covered by wire gauze Q, and the door R opening upwardly, substantially as herein shown and described. 3rd. In a bee-hive, the feed trough f, divided into three compartments and having the

end compartments connected with the chamber A¹ by passages *h*, and the central compartment connected with the box X by a passage *t*, whereby three colonies of bees can be fed separately, as set forth.

No. 18,701. Cinder Sifter. (*Crible à Cendres.*)

John Cameron, Toronto, Ont., 18th February, 1884; 5 years.

Claim.—1st. A cinder sifter constructed without any moving parts therein, having an upright casing in which are placed two stationary screens of wire work and sloping in different directions, and provided with ash channels which, when the ashes are separated from the cinders, convey the same to an ash chamber, and also provided with a cinder channel which delivers the cinders on one side of the sifter, and a spout from the ash chamber delivers the ashes on the opposite side of the sifter, as specified and shown. 2nd. In a cinder sifter constructed as described, the sloping screens D, E, in combination with the direction plate c, ash channels F, G, cinder channel G, ash chamber H, with spout I, the whole arranged and operating, substantially as specified. 3rd. I claim the option of constructing my sifter without the ash spout I when so required.

No. 18,702. Metal Shingle. (*Bardeau Métallique.*)

John C. West, Levi H. Montross and James Peachey, Simcoe, Ont., 18th February, 1884; 5 years.

Claim.—1st. A square metallic shingle having its body A provided with a central plain portion B enclosed by a rib *b*, and ribs C and D extending downwardly and upwardly from the lower and upward corners of the body A, substantially as set forth for the purpose specified. 2nd. A metallic shingle having its body A provided with a central plain portion B enclosed by a rib *b*, and ribs C and D extending downwardly and upwardly from the lower and upward corners of the body A, to the lower and upward corners of the body A, and upright ribs E, E and F, F, arranged on opposite sides of central ribs b, C and D, substantially as set forth for the purpose specified. 3rd. A metallic shingle having its body provided with a central plain portion B enclosed by a rib *b*, a rib D extending upwardly from the upper corner of the rib *b*, a rib C extending downwardly from the lower corner of the rib *b*, and provided with a lip *a*, and outer ribs F having openings *h*, *h*, *h*, substantially as set forth for the purpose specified. 4th. A metallic shingle having its body provided with a central plain portion B enclosed by ribs *b*, a rib D extending upwardly from the upper corner of ribs *b*, a rib C extending downwardly from the lower corner of the rib *b*, and provided with a lip *a*, and outer ribs F having openings *h*, *h*, and ears *g* outside of ribs F, with nail holes *o* and *j*, substantially as set forth for the purpose specified.

No. 18,703. Saw Buck. (*Chevalet.*)

Thomas Beard and Alfred B. Walker, Kakomo, Ind., U.S., 18th February, 1884; 5 years.

Claim.—The combination, with a metallic toothed plate fixed to the horn of one brace of a saw buck, of a crooked lever pivoted to the same brace at a point below the juncture of two crossing braces, and having a toothed arm opposing said tooth plate, a treadle fixed to said lever, and a spring to act thereon, substantially as and for the purpose specified.

No. 18,704. Machine for Converting Hay and Straw into Stove Fuel. (*Machine pour Convertir le Foin et la Paille en Combustible pour Poêle.*)

William Dwyte and William P. Johnston, Winnipeg, Man., 18th February, 1884; 5 years.

Claim.—The spindle F, substantially as and for the purpose hereinbefore set forth.

No. 18,705. Machine for Calculating Interest and Finding Days and Dates. (*Machine pour Calculer l'Intérêt et trouver les Jours et les Dates.*)

John R. Nicholson, Newcastle, N.B., 18th February, 1884; 5 years.

Claim.—The combination in an interest calculator, of the wheels B and C rotating in the standard F fitted to the base A having table G and indicator standard D provided with slot E, the whole arranged as shown and described and for the purposes set forth.

No. 18,706. Telephone Signalling Apparatus. (*Appareil à Signal de Téléphone.*)

F. Benedict Herzog, New York, U.S., 18th February, 1884; 5 years.

Claim.—1st. The combination, with an electric circuit, of an automatic signalling mechanism constructed to transmit one or more signals over the circuit, means for setting the signal mechanism so current through its signal, and a device arranged to be operated by released or caused to operate and transmit its signal automatically over the circuit. 2nd. The combination, with a telephonic or telegraphic circuit, of an automatic signalling mechanism located at one office and arranged to transmit two or more different signals over the circuit as desired, means for setting the signalling mechanism so as to transmit the desired signal, and a device operated from another office on the said circuit, whereby the said signalling mechanism may be released or caused to operate and transmit automatically the desired signal over the circuit. 3rd. The combination, with a telephonic or telegraphic circuit, of an automatic signalling mechanism arranged to transmit different signals over the circuit according to the position in which it is set, means for setting the signal mechanism so as to transmit the desired signal, a device operated by an electric current on the said circuit, whereby the signal mechanism may be released or caused to operate and transmit its signal over the circuit, and a recording or indicating apparatus in the said circuit arranged to record or indicate the signal transmitted, substantially as described. 4th. The combination, with a telephonic or telegraphic

circuit and signalling apparatus operated from one office for calling a second office thereon, of an automatic signalling mechanism located at the said second office and arranged automatically to transmit different signals over the circuit according to the position at which it is set, means for setting the said signal mechanism and a device operated from the first office on the said circuit, whereby the signal mechanism may be released or caused to operate and transmit its signal, the whole being so arranged that the operation of the calling apparatus automatically releases the signal mechanism or causes it to transmit its signal over the circuit, substantially as described. 5th. The combination, with a telephonic or telegraphic circuit and signalling apparatus operated from one office for calling a second office thereon, of an automatic signalling mechanism located at the said second office and arranged automatically to transmit different signals over the circuit according to the position at which it is set, means for setting the said signal mechanism and a device operated from the first office on the said circuit, whereby the signal mechanism may be released or caused to operate and transmit its signal, the whole being so arranged that the calling apparatus may be operated without affecting the automatic signalling mechanism, substantially as described. 6th. The combination, with a telephonic or telegraphic circuit, of an automatic signalling mechanism constructed to transmit different signals, pre-arranged to indicate specified times of day or other desired fact or facts, according to the position at which it is set, means for setting the said signal mechanism and a device operated from another office for releasing the signal mechanism or causing it to operate and transmit its signal, whereby the operator at the calling-office is automatically informed of the desired fact or facts when the individual called is absent from the office, substantially as described. 7th. The combination, with a spring-actuated spindle or clock-work and suitable escapement mechanism, of a signal transmitting contrivance constructed to transmit one set of signals or impulses before it reaches a fixed point in its revolution and another set of signals or impulses after passing the said point, means for setting the transmitting contrivance at different positions so as to alter the first set of signals, and means for limiting the revolution of the spindle at any desired point so as to alter the second set of signals, substantially as described. 8th. The combination of the spindle F, spring J and clock-work escapement I, with the transmitting-disk M, the adjustable stop or hand D limiting the revolution of the said disk, substantially as described.

No. 18,707. Suspenders. (*Bretelles.*)

Alva M. Freeman, Chicago, Ill., U.S., 18th February, 1884; 5 years.

Claim.—1st. A suspender brace plate A having the angular slots, as described, and a hook interfit therewith, the hook being provided with a prolonged end adapted to be embraced by the crossed webbing when passed through the angular slots, as set forth. 2nd. The combination of the crossed straps B, the plate A, having the angular slots and integral hook with prolonged end adapted to be embraced by the webbing and the cast-off straps C attached to a similar plate and provided with suitable connecting means, as set forth. 3rd. The combination of the plate A having the angular slots, integral hook with prolonged end and the fenders, as described, with the webbing B, as set forth. 4th. A suspender buckle or clasp consisting of the socket case or frame D provided with the slot *d*, and a wedge provided with teeth adapted to slide within the socket or frame and retain the suspender web, as set forth. 5th. A suspender clasp or buckle consisting of the socket or frame D provided with a slot *d*, and a hook *h*, and a toothed wedged block E provided with a pin or stud *b* adapted to fit in the slot *d* and to limit the movement of the said wedge-block, as set forth. 6th. A suspender buckle consisting of the socket case or frame, and a wedge adapted to slide within the socket or frame to retain the suspender web, as set forth. 7th. The combination, with the crossed straps B, of the plate A having the angular slots as described, and the cast-off straps attached to a similar plate and connected thereto, as set forth.

No. 18,708. Automatic Car Brake. (*Frein de Char Automatique.*)

Anson S. Webster, Glensdale, N.Y., U.S., 18th February, 1884; 5 years.

Claim.—1st. The chain drum movable from side to side upon its axle by suitable levers, the friction disks upon the car wheels and chain-drum axles, the intervening spring latches and the adjustable side rods or bars connected with the draw-bar and arranged to move or swing the chain-drum axle upon its hangings, as explained, so as to bring the disks thereon into contact with those upon the car-wheel axle, these parts being combined and operated, substantially in the manner and for the purposes set forth. 2nd. In an automatically-operating car-brake, the draw-bar mounted upon the car body and combined with adjustable side bars and levers mounted upon the truck and connected with the axle carrying the adjustable chain drum, and the friction disks having the spring latches in their sides, said axle being arranged to swing, as explained, so as to bring the disks thereon into contact with those upon the car-wheel axle, substantially as and for the purposes set forth. 3rd. In combination with the draw-bar and connected adjustable side levers, the chain-drum mounted upon a swinging axle between two friction disks carrying spring-latches arranged to be turned, in the manner specified, the forked bar and the connecting levers mounted upon the car body pivoted as explained, extending to the outside thereof and arranged to shift the drum on its axle so as to cause it to revolve in either direction, after being brought into contact with one of the friction disks, substantially as and for the purpose set forth. 4th. In an automatic brake of the character herein set forth, the chain-drum adjustable by suitable levers from side to side upon its axle, the same being combined with the spring latches mounted in the sides of the friction disks applied upon said axle, the said disks being turned in either direction by contact with suitable disks mounted upon the car-wheel axle, substantially as and for the purposes set forth. 5th. In an automatic-brake, mechanism having the shifting chain-drum and friction-disks mounted upon the same, swinging axle arranged to be operated through the medium of the draw-bar, the herein described forked links connecting the adjustable operating levers with the draw-bar and arranged, as set forth, so that, if the

draw-bar be pulled out, the remainder of the brake setting and operating mechanism will remain intact, substantially as shown and described. 6th. The combination, with the levers pivoted to the trucks, of the side bars running back to the swinging axle of the chain-drum to move the same, said axle being provided with friction disks carrying spring-latches, arranged to engage with said drum, the levers being connected with the draw-bar by a suitable link, and the side-bars being made adjustable to correspond with limit of movement of the draw-bar, substantially as shown and described. 7th. In a brake mechanism of the character herein set forth, the combination of the levers and forked bar for shifting the chain-drum upon its axle between the two disks, provided with spring-latches and mounted upon the same axle, the bar being pivoted to its adjacent lever at a point at right angles with the longitudinal axis of the truck and opposite the position of the king-bolt, and engaging with the drum, substantially as and for the purposes explained. 8th. In a brake mechanism, the combination, with the shifting chain-drum mounted upon a swinging axle connected with the draw bar by adjustable side levers, of the friction disks mounted upon the same axle, said disks being revolved by contact with suitable disks upon the car-wheel axle and carrying the spring latches in their sides, the drum and its shifting and operating mechanism being arranged, substantially as set forth, so that said drum may be set at a point midway between the disks, and thus allowed to remain stationary, as and for the purposes explained. 9th. In a brake mechanism of the character herein set forth, the friction disks applied upon the axle of the chain-drum and provided with the loose bands or tires, substantially as and for the purposes set forth.

No. 18,709. Potat-Digger and Scuffer.
(Appareil pour Arracher et Secouer les Patates.)

Michael Peterman, West York, Ont., 18th February, 1884; 5 years.

Claim.—1st. In combination with a plow beam, arranged to be drawn by a horse and provided with ordinary guiding handles, a pointed spade C slightly inclined upwardly from its point and having guards on each side of it, as specified. 2nd. A pointed spade C provided with guards G and suspended from the plow beam A, in combination with a plow-shaped divider set on the top surface of the spade, substantially as and for the purpose specified. 3rd. A spade C provided with guards G suspended from the plow-beam, in combination with an adjustable caster-wheel attached to the plow-beam in front of the spade, and a plow-shaped divider set on the top surface of the spade, substantially as and for the purpose specified.

No. 18,710. Combined Pole Tip and Neck Yoke Clamp. (Embout de Timon et Croche de Volée Combinés.)

Jesse M. Emerson, jr., (Assignee of Francis W. Sibert and Stephen P. Hurd,) San Antonio, Texas, U.S., 19th February, 1884; 5 years.

Claim.—1st. The tip or socket A formed with the tongue b, in combination with the hinged plates c, c pivoted to the tongue b by the bolt E, substantially as and for the purposes set forth. 2nd. The tip or socket A formed with the groove f and slot e, in combination with the pole D provided with the pin or stud g, substantially as and for the purposes set forth. 3rd. The tip A formed with the groove f and slot e, and perforated tongue b, in combination with the hinged semi-cylindrical plates c, c, bolted to the tongue b, substantially as described.

No. 18,711. Pick. (Pic.)

Warren Cook, Allegheny, and Lenox Simpson, Pittsburg, Penn., U.S., 19th February, 1884; 5 years.

Claim.—1st. In a pick, the plate A having wings B provided with recesses C, having enlargements at the inner ends, and with transverse grooves having bevelled sides, and which are tapered from the ends towards the middle, substantially as and for the purposes hereinbefore set forth. 2nd. In a pick, the combination, with the handle D, of the plate A provided with recessed wings B and transverse grooves F, and of the bolts or rivets G for uniting the plate when folded, substantially as and for the purposes hereinbefore set forth. 3rd. In a pick, the combination, with the handles D, of the plate A, provided with recessed wings B, and transverse grooves F, the bolts or rivets G and the collar or ring E, substantially as and for the purposes hereinbefore set forth. 4th. In a pick, the combination, with the handle D, of the plate A provided with recessed wings B and transverse grooves F forming sockets H, and of implements such as picks, mattocks, hammers, &c., having one end squared and bevelled, substantially as and for the purposes set forth.

No. 18,712. Button-Hole Attachment to Sewing Machines. (Machine à Coudre faisant les Boutonnères.)

The Schott Button Hole Attachment Company, (Assignee of William Schott,) New York, N. Y., U. S., 19th February, 1884; 5 years.

Claim.—1st. A button-hole attachment to sewing machines containing the following elements: a carrier plate for supporting and guiding a reciprocating foot, a reciprocating foot supporting the mechanism for moving the button-hole form plate and cloth clamp, a worm for transmitting motion to the button-hole form plate, means for reciprocating the reciprocating foot and regulating the bite of the stitches comprising a reciprocator lever operated by the needle bar, a vertically-moving gate provided with a horizontal rod, a latch having oppositely inclined planes and an adjustable reciprocating lever, a ratchet adapted to be automatically thrown out of gear with the wheel through which motion is transmitted to revolve the form plate, a lever operated by the moving form plate to regulate the speed of the latter and the distance between the stitches. A device embracing an eccentric lever and an arm, and an adjusting lever for stopping the feed of the form plate, and the mechanism for trans-

mitting motion thereto for the purpose of bearing a button-hole, a combined thread-holder guide and revolving presser-foot, a combined cloth clamp and permanently fixed open-ended button-hole form plate, and a button-hole form plate having irregularities in its face for automatically operating a speed regulating lever, all combined and operating, substantially as herein shown and described. 2nd. In the button-hole attachment to sewing machines, the combination, with the carrier plate provided with grooved frame K and reciprocating arm K², of gate K¹ provided with rod h₁, reciprocating foot B, yoke h₂, adjustable reciprocating lever L, stud k, nut k¹, spring $\frac{1}{2}$ and latch L¹, all constructed, arranged and operated substantially as set forth. 3rd. In a button-hole attachment to sewing machines, as a means for transmitting motion from the needle bar operated lever to the mechanism operating the reciprocating foot, the vertically-movable gate K¹ provided with suitable attachment h₁, substantially as herein shown and described. 4th. In a button-hole attachment to a sewing machine, the combination, with the ratchet wheel designed to transmit motion through suitable mechanism to the form plate, of a lever adapted to be connected with the needle bar and provided with ratchet and ratchet spring fixed thereon, substantially as described, said ratchet being normally held by the spring in gear with the ratchet wheel, as set forth. 5th. In a button-hole attachment to sewing machines, as a means for holding down the edges of a button-hole that is being stitched, the combination, with the said attachment, of a roller g and support g¹, arranged and operating, substantially as herein shown and described. 6th. In a button-hole attachment to sewing machine, as a means for holding and guiding a thread or cord for cording a button-hole, the combination of a grooved roller g, support g¹, guides g² and perforated plate g³, all arranged substantially as herein shown and described. 7th. In a button-hole attachment to sewing machines, as a means for arresting the feed of the form plate, a lever having one end arranged and adapted to rest on the face of the form plate, and the other end adapted and arranged to break the connection between the needle bar and the form plate, substantially as herein shown and described. 8th. In a button-hole attachment to sewing machines, a form plate provided with alternate face depression and elevations, substantially as and for the purpose set forth. 9th. In a button-hole attachment to sewing machines, the combination, with a cloth clamp constructed with slotted leaves m, m², m³, pins m⁴, lug m⁵ and eccentric lever m⁵, of an open and closed form plate M permanently fixed thereto, substantially as herein shown and described. 10th. In a button-hole attachment to sewing machines, means, substantially as herein shown and described, for arresting the feed of the form plate when barring the end of a button-hole. 11th. In a button-hole attachment to sewing machines, the combination, with the ratchet transmitting motion from the needle bar to the mechanism for moving the form plate, of an adjustable finger, as and for the purposes set forth. 12th. In a button-hole attachment to sewing machines, the combination, with a button-hole sub-form plate and cloth clamp, of the cloth stretcher P, constructed substantially as herein shown and described. 13th. In a button-hole attachment to sewing machines, as a means for centring a button-hole form plate in respect to the button-hole to be worked, the cloth stretcher P provided with depending vertical blade, substantially as herein shown and described. 14th. In a button-hole attachment to a sewing machine provided with a reciprocating foot and a form-plate, as a means for turning the form-plate, the combination, with said form-plate, of a worm supported on the reciprocating foot and actuated by suitable mechanism, substantially as herein shown and described.

No. 18,713. Cross-cut Saw. (Scie de Travers.)

James Robertson, Montreal, Que., (Assignee of Daniel Hall, St. John, N. B.), 19th February, 1884; 5 years.

Claim.—The combination of the teeth facing in opposite directions on each side of the transverse centre line, with the peculiar form of tooth shown and described, and having the single-pointed cleaner teeth arranged in the manner and form, as specified and shown.

No. 18,714. Grain Seeding Machine.

(Semoir en ligne.)

The Hoosier Drill Company, (Assignee of John Westcott,) Richmond, Ind., U.S., 19th February, 1884; 5 years.

Claim.—1st. In a seeding machine, the combination, substantially as herein described, of a vertically adjustable-bar extending transversely across the forward portion of the machine with a series of drag-bars, the latter being under control of the attendant, whereby the front ends of all the drag-bars can be simultaneously and uniformly raised or lowered at any stage of the seeding operation. 2nd. In a seeding machine, the combination, substantially as hereinbefore described, of a vertically-movable bar or bars extending transversely across the forward portion of the machine, a series of drag-bars having their front ends attached to said bar or bars, and mechanism also connected with said bar or bars and under control of the operator, whereby the front ends of the drag-bars can be simultaneously and uniformly raised or lowered at any stage of the seeding operation.

No. 18,715. Composition of Matter to be used in Coating and Covering all Kinds of Heated Surfaces, &c. (Composition de Matières pour servir à Enduire et Couvrir toutes sortes de Surfaces Chauffées, &c.)

John F. Torrance, Ottawa, Ont., 20th February, 1884; 15 years.

Claim.—A fire-proof non-conducting compound composed of seventy-eight to ninety-eight per cent of infusorial earth, one to fifteen per cent of asbestos and one to seven per cent of gluten, the whole compounded as described and about in the proportions set forth, for use as a fire-proof non-conducting material to prevent the heat and loss of heat, and to prevent the penetration of sold or heat and as a protection against fire.

No. 18,716. Heating Apparatus. (Calorifère.)

Zephyrin Manny, Beauharnois, Que., 20th February, 1884; 5 years.
Claim.—1st. In a heating apparatus, the circular or ring-shaped base A connected by the pipes B with the circular or ring-shaped head C and the casing D, substantially as shown and described and for the purpose set forth. 2nd. In a heating apparatus, the relieving pipes *b, b*, for the purpose of allowing the water to flow between the base A and head C, when the house circulation is shut off. 3rd. The combination, in a heating apparatus, of a boiler composed of the base A, pipes B, head C and relieving pipes *b, b*, with the feed pipe *a*, casing D, heating pipes *c* having the valves *d*, and the furnace E, substantially as shown and described.

No. 18,717. Car-Coupling. (Accouplage de Chars.)

Félix St. Coeur, Bathurst, N. B., 20th February, 1884; 5 years.
Claim.—1st. The combination of the coupling pin P having a solid weighted head P₁ and stem *p*, and downward and inward sloping or curved hook, the bell-mouthed draw-head H having inward and downward sloping recess *h*, mortised to receive the head P₁, and perforated to guide the stem *p* and receive the hook P when dropping in the link L. 2nd. The coupling pin P having downward and inward sloping front adapted to be lifted by the sliding motion of the link, the solid weighted head P₁ having eye or staple *pi* and the guide stem *p* working and guided in the draw-head. 3rd. The recess *h* in the lower portion of the throat of the draw-head, in combination with the link L and the pin P having head P₁ and stem *p*, all substantially as shown and described and for the purpose set forth.

No. 18,718. Hydro-Carbon Vapour Burner. (Lampe à Gaz d'Hydrocarburé.)

Bruno Martin, East Saginaw, Mich., U. S., 20th February, 1884; 5 years.
Claim.—1st. An attachment to a hydro-carbon vapor burner adapted to extinguish the flame of said burner by withdrawing from it any unconsumed vapor within it, substantially as described. 2nd. An attachment to a hydro-carbon vapor-burner adapted to extinguish the flame of said burner by withdrawing from it any unconsumed vapor within it, and to return said unconsumed vapor to said burner when desired, with a hydro-carbon vapor burner and its feed pipe, of the exhaust cylinder J provided with a piston, substantially as and for the purposes set forth. 4th. The combination, with a hydro-carbon vapor burner and its feed pipe of the branch H, valve F I and cylindrical J provided with a piston and rod, the parts being constructed, arranged and operating substantially as and for the purposes described.

No. 18,719. Method and Means for Testing Fabrics. (Méthode et Moyens pour Epruver les Tissus.)

Ebenezer Morrison and James P. Herron, Washington, D. C., U. S., 20th February, 1884; 5 years.
Claim.—1st. The method of testing fabrics which consists in rupturing or breaking the same, at a confined portion wholly within the edges of the fabric, and measuring the force employed. 2nd. The combination of a rigidly clamping or confining mechanism, means for applying force and means for measuring the force applied, substantially as specified. 3rd. The combination of a rigidly clamping or confining mechanism, a plunger and means for measuring force for testing fabrics, substantially as specified. 4th. In a machine weighing apparatus, an annular clamp, a concentric plunger and a for the purpose set forth. 5th. The combination of the annular collar D, annular head B₁, the cylinder C and the plunger G arranged concentric with each other. 6th. The combination of the plunger G, cylinder C, collar D, shaft E, cam E₁, lever E₂ with the standard B provided with the annular head B₁ substantially as described. 7th. The combination of the standard B having head B₁, the plunger G and scale F, substantially as described.

No. 18,720. Fire-Escape. (Sauveteur d'Incendie.)

Samuel J. Stofer, North Liberty, Ind., U. S., 20th January, 1884; 5 years.
Claim.—In a fire-escape, the combination, with the metallic casing having partitions, and the shaft having the coil-spring secured thereon to and to the casing and the main cog-wheel, of the shaft having the guiding pulleys and the flanged rope-drum, the travelling rope-being journaled in the casing and its partitions, substantially as described.

No. 18,721. Paper-Cutting Machine. (Machine à Trancher le Papier.)

Wilber F. Hill, North Manchester, Ct., U. S., 20th February, 1884; 5 years.
Claim.—1st. The combination of the gear wheel N on the shaft of the feeding roll B, the double gear wheel P connected with N by interior gearing, the adjustable band Q having interior and exterior teeth, as described, and the gear wheel S which drives the cutting mechanism, substantially as set forth. 2nd. The band Q provided with gear teeth all around its entire side, and exterior teeth upon a portion of its exterior side, in combination with the gear wheel P which drives the said band continuously, and the wheel S, which receives an intermittent motion from the exterior teeth, substantially as described. 3rd. The band Q composed of a series of removable links by which its length is adjustable, said links being all provided with interior teeth, and part of which are provided with exterior teeth, as a means for communicating an adjustable intermittent movement from one gear wheel to another, substantially as described.

No. 18,722. Bustle. (Tournure.)

Charles W. Higby, Jackson, Mich., U. S., 20th February, 1884; 5 years.
Claim.—As a new article of manufacture, a bustle formed of the plaited fabric A, the fabric C, the band B, such fabrics forming a lateral pocket and enclosing the double conical coil spring D, substantially as described.

No. 18,723. Rotary Steam Engine. (Machine à Vapeur Rotatoire.)

Lauchlin L. Kephail and Henry McIntosh, Emerson, Man., 22nd February, 1884; 5 years.

Claim.—1st. In a rotary engine, a rotary disc permanently fitted to a shaft E and provided with radial sliding pistons *c*, the outward movement of which are produced by live steam and provided with cushions, as set forth and for the purpose described. 2nd. In a disc for a rotary engine, such as described, end plates B, one or other of which have air ports F, as shown and described for the purpose set forth. 3rd. In a rotary engine such as described, one of the outer main plates *c* provided with a curved groove F₁, opposite and in communication with the air ports F, and provided with an air port F₂, for the purpose described and set forth. 4th. In a rotary engine such as described, a cylindrical valve M having exhaust ports *m, m*, and *m₂, m₂*, in combination with the feed ports *x, x₁*, and *x₂, x₂*, and fitted to the circular valve casing D₁ which rests on the resistance block V, shown and described, substantially as set forth. 5th. The combination, in a rotary engine, of revolving disc provided with cushioned pistons *c* and end plates B, with air ports F and a circular groove in one of the walls of the casing G having an air port F₂, as shown and described. 6th. The curved bars *y, y*, in combination with the rotary disc A, as shown and described, substantially as set forth. 7th. In a rotary engine such as described, the radial pistons C provided with spiral springs *a* and rods D₁, and acting, combinedly with, and in the steam chamber D, as shown and described, for the purpose set forth.

No. 18,724. Cartridge Implement. (Outil à Cartouche.)

Edmund R. Darling, Woonsocket, R. I., U. S., 22nd February, 1884; 5 years.

Claim.—1st. A cartridge instrument consisting of the arm A, carrying the end pin and block i, the handle B pivoted to a right-angled projection of arm A, and carrying the anvil *e* near its fulcrum, and the arm C pivoted to said handle B, and having the perforated and grooved end flange *g*, whereby it may be used for loading, capping, uncapping and extracting the cartridge, as described. 2nd. The arm provided with a flange to engage the rim of the shell, the pivoted handle and a rod connected therewith and provided with the uncapping device, combined with the reversible loading device applied to the said rod, and chambered at its end to cover the uncapping device, substantially as described.

No. 18,725. Hydro-Carbon Burner. (Foyer à Hydrocarburé.)

Bruno Martin, East Saginaw, Mich., U. S., 22nd February, 1884; 5 years.

Claim.—1st. In a hydro-carbon vapor burner, horizontal deflectors overlapping each other in vertical series, in combination with shells and cup, substantially as and for the purposes described. 2nd. In a hydro-carbon burner, a vaporizing cup in which the hydro-carbon is spiral or disseminated through a body of granulated refractory material, in combination with supply and exit pipes, substantially as specified. 3rd. In a hydro-carbon burner, a cup provided with supply and exit pipes, in combination with a perforated passage through such cup connecting such supply and exit pipes, substantially as set forth. 4th. In a hydro-carbon burner, horizontal deflectors in vertical series with inclined deflectors interposed between them, in combination with a vaporizing cup, substantially as and for the purposes described. 5th. In a hydro-carbon burner, a vaporizing cup provided with a plug secured therein, and holding the plates M and N between the projecting flange of said plug and top of the cup, substantially as specified. 6th. In a hydro-carbon burner and in combination with a vaporizing cup and its plug, the plates secured to the top of said plug by means of a set screw, substantially as set forth. 7th. In a hydro-carbon burner, the combination of a vertical series of horizontal deflectors with vertical annular ducts forming air passages to the flame in its passage around said deflectors, substantially as described. 8th. In a hydro-carbon burner, a vaporizing cup formed with a concave bottom and sides, in combination with an enclosing shell, substantially as and for the purposes specified. 9th. In a hydro-carbon burner and as a means for producing an undulating or tortuous flame, the combination of the horizontal deflectors in vertical series with the deflecting flanges of the air ducts, substantially as set forth. 10th. The combination, with a vaporizing cup and hydro-carbon burner, of the inner conical shell or ring duct provided with a deflecting flange for the purpose of guiding and deflecting the flame against the bottom and side walls of such cup, substantially as described. 11th. In a hydro-carbon burner, a vaporizing chamber filled with granulated refractory material, such chamber being situated immediately over the burner and communicating therewith by a pipe and adapted to receive the hydro carbon from any suitable source, substantially as specified. 12th. In a hydro-carbon burner, a series of annular air ducts of graduated size concentrically surrounding the burner, and each provided at top with an inwardly projecting deflecting flange, for the purpose of supplying oxygen at succeeding intervals to a flame, substantially as set forth. 13th. A hydro-carbon burner consisting of the shells A, B, C, with their flanges *a, b, c*, vaporizing cup D, plug E, pipes F, H, I, J, burner X, rings M, N and plates O, P, Q, the parts being constructed, arranged and operating substantially as and for the purpose described.

No. 18,736. Vice. (Etau.)

Daniel Davis, Elmira, N. Y., U. S., and Harford Ashley, Belleville, Ont., 22nd February, 1884; 5 years.

Claim.—1st. In a vice, the ratchet and slotted and threaded sliding bar C, ratchet H and screw D, in combination with the slide E, lugs or braces F and jaw A, substantially as and for the purpose hereinbefore set forth. 2nd. In a vice the jaw A, formed with the recess α and angular shoulders h , in combination with the braces F, the ratchet and slotted sliding bar C, slide E and nut e , substantially as and for the purpose hereinbefore set forth.

No. 18,727. Machine for Cutting Stones.

(Machine à Tailler les Pierres.)

Marvin S. Otis, Rochester, N.Y., U.S., 22nd January, 1884; 5 years.

Claim.—1st. In combination, the bed-plate A, standards D and cross-bar E, the latter provided with cross-heads O, O and cutters K, K, and systems of gearing H, H, to drive said respective cross-heads with supporting rods F passing through perforations in the cross-bar E, said rods having their lower ends secured in the base of the frame, their upper ends screw-threaded and provided with clamping nuts g , g , formed to clamp said cross-bar in place, as and for the purpose set forth. 2nd. A machine for cutting or dressing the surface of stone having non-rotating cutters secured in a suitable cross-bar supported on standards, said cross-bar carrying a system of driving gear adapted to force the cutters across the face of the stone independently of each other, the cross-bar being vertically adjustable by means of rods and standards, substantially as shown and specified. 3rd. In a stone cutting machine, the table B mounted on rollers and formed with apertures or spaces i between the bed A and said table, in which to insert stiffening blocks α , substantially as shown and specified. 4th. The combination, in a stone-cutting machine of the cross-bar E held upon standards D, D, D above and away from the stone, said cross-bar being provided with opposing cross-heads O, O carrying cutters and independent sets of parallel non-rotating driving screws L, L, L, L connected with the respective cross-heads, and sleeve-nuts R, R, R, R for said screws, and means to rotate the sleeve-nuts by means of which the said cross-heads with their attached cutters are moved in the same, or in opposite directions over the surface of the stone when in the act of cutting the same. 5th. The combination, with the cross-bar E, of a cross-head O, parallel non-rotating screws L, L having their inner ends secured within said cross-head, and means to give said screws endwise motion, substantially as shown and described and for the purpose set forth. 6th. The combination, with the cross-bar E, of a cross-head O provided with chambers t , and the screws L, L entering said respective chambers, and the sleeve-nuts R, R, substantially as set forth and shown. 7th. In combination, the cross-bar E, sleeve-nuts R, R, gears S, S, gear T, pinion e , pendulum D1, studs A1 and C1, and pinion e , with means to rotate the latter by means of which a pendulum the pinion e may be caused to directly turn either gear S, S. 8th. The cross-head O of a stone-cutting machine, in combination with the cutter-block N attached to said cross-head, for the purpose of holding the cutter K, and roughing cutter F1 secured directly to the cross-head on either side of the cutter K, substantially as and for the purpose set forth. 9th. In combination, the bed A, standards D, D, D and cross-bar E, the latter being provided with cross-heads O, O and cutters K, K, and systems of gearing H, H to operate said respective cross-heads and non-rotating supporting bolts F, F, F, F for the cross-bar passing through projections from the latter and having their respective lower ends resting respectively in the bases of the standards and screw-nuts g , g provided for the supporting bolts, to secure the same rigidly to the cross-bar, substantially as set forth.

No. 18,728. Saw Tab. (Porte-Lame de Scierie.)

John D. Ryan, Detroit, and Paul F. Lane, Saginaw, Mich., U.S., 22nd February, 1884; 5 years.

Claim.—1st. A saw-tab consisting of two plates, one of which is provided with lugs for entering apertures of a saw and between which plates the saw is to be secured, substantially as shown and described. 2nd. The combination, with a saw having apertures b , of the plate B provided with the lugs a , and the plate B1, the said plates being placed on opposite sides of the saw and secured together by a screw, substantially as herein shown and described. 3rd. The combination, with a saw having apertures b , of the plate B provided with the lugs a having undercut edges, the plate B1 and the screw c , substantially as herein shown and described.

No. 18,729. Office Ruler and Blotter.

(Règle-Buward.)

William Lough, Hull, Que., and Benjamin Batson, Ottawa, Ont., 22nd February, 1884; 5 years.

Claim.—1st. The top A provided with knob B, end frames C having spurs C1 and pivot screws M, substantially as and for the purpose set forth. 2nd. The blotting roller F provided with tube G having slots G1, end plates N, pistons I provided with catches J, spiral spring K, piston rods H, trunnions L, end caps L1, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a blotting pad, of ruler D pivoted to the top A by the swinging arms E, substantially as and for the purpose hereinbefore set forth.

No. 18,730. Machine for Tying Packages with Wire. (Machine pour attacher les Paquets avec du Fil de fer.)

Henry Mereweather and John H. Wright, Hull, Que., 23rd February, 1884; 5 years.

Claim.—1st. The combination of a bench B, supporting a stool or cradle C holding a package to be tied, a laterally extending portion B1 having journaled upon it a wire reel R provided with crank, and a headstock H having disc or chuck bodily journaled therein, said chuck having two perforations, one at each side of the centre for the wire to pass through, and having, eccentrically pivoted upon its face, the nippers N provided with nipping jaws and cutting edge sweeping said perforation and serving as a crank, to turn the said chuck in one direction for twisting the wire, and to cut off the same when turned in the opposite direction, the chuck being held stationary by a catch $h2$ engaging a suitable notch. 2nd. The bench or bed

B provided with the runners b and supporting slidably or otherwise the cradle C, said bench having a lateral extension B supporting a crank-handled wire reel R journaled at the extremity thereof. 3rd. The bench or bed B having lateral extension B1, and a headstock H secured at the side thereof and at the junction of the extension B1. 4th. The headstock H having a disk or chuck D bodily journaled therein in such a manner as to prevent axial displacement, said chuck provided with crank-handled nippers N, eccentrically pivoted thereon and provided with notch $d1$ engaging a catch $h2$, to prevent rotation in the direction opposite that to which the wire is twisted. 5th. The combination of the chuck D having two perforations d , $d1$, one at each side of the centre, and the nippers N pivoted thereon eccentrically and provided with nipping jaw n and cutting point $n1$, the latter sweeping across the perforation d , the rotation of the nippers upon the chuck in the direction of the face rotation of the chuck limited by a pin $d4$ placed eccentrically thereon, and the nippers provided with cranked handles $n2$, to serve as a crank to the chuck and for operating the nippers. 6th. The nippers N having nipping jaw n , cutting point $n1$ and cranked handles $n2$ pivoted eccentrically upon the face of a chuck D, serving as a crank for turning the same while gripping and holding the wire, all substantially as shown and described and for the purpose set forth.

No. 18,731. Steam Boiler. (Chaudière à Vapeur.)

Aaron H. Euple, (Assignee of Harry H. Lindemuth.) Mount Joy, Penn., U.S., 23rd February, 1884; 5 years.

Claim.—1st. In a steam boiler, the combination of the outer wall or casing A, the dome surmounting the wall and having a suitable smoke-flue, the horizontal top-plate G, the bottom D, the cylindrical wall J depending from the edge of the top G down nearly to the bottom D, the inner wall N extending from the inner edge of the bottom D up nearly to the top G, the top and bottom plates P and Q, the annular series of flues opening through the plate P at the top into the space fire chamber, and through the plate Q at the bottom into the space between the walls A, J, and the fuel-feed opening m , the top G having a cap or cover so that the fire chamber will be closed, to force the smoke and products of combustion through the flues, as set forth. 2nd. The combination, with the grate F sliding vertically in a lever chamber x x x x x x of the standard B2 to which is pivoted a lever C2 for operating the grate, for the purpose set forth. 3rd. In a steam-boiler, the combination of the cylindrical outer wall or casing A, having a suitable smoke-exit flue, with the fire chamber E formed by the inner wall N, the intermediate wall J, the horizontal top plate G, the water chamber formed by the space between the walls J, N, the annular series of longitudinal flues arranged in the water chamber, the cold air tube M2 and the space M, said parts operating to distribute the smoke and products of combustion first up against the inner wall of the water chamber, then down through the latter by means of the flues S, and then up again in the space M against the outer wall of the water-chamber, as shown, whereby steam can be more quickly obtained and the heat thus entirely utilized for the purpose described.

No. 18,732. Reel for Harvester.

(Râteau de Moissonneuse.)

George G. Hunt, Bristol, and The Plano Manufacturing Company, Plano, Ill., U.S., 23rd February, 1884; 5 years.

Claim.—1st. The bracket or standard F, in combination with a foot releasing lever G, rack or member H and vibrating frame L, for the purpose and in the manner described. 2nd. Combined with the adjustable frame M and the bar N, the swivel V and the locking device, substantially as described. 3rd. The standard N, in combination with a swivelling piece V, sliding bolt w and frame M, for the purpose and in the manner specified. 4th. Combined with the seat-plank A and with the reel-shaft of a harvester, a counter-shaft I2 and connected gearing placed on that side of the seat-plank next the grain-elevator, substantially as set forth.

No. 18,733. Reciprocating Saw-Mill.

(Scierie à Scies Verticales.)

John H. Berkshire, Muscatine, Iowa, and The Marinette Iron Works Company, Marinette, Wis., U.S., 23rd February, 1884; 5 years.

Claim.—1st. Reciprocating saws adjusted to ascend and descend in straight lines and vibrated, while reversing their vertical movements, by devices connected with, and actuated by the piston of a direct-acting or reciprocating engine, the cut-off valve of which is reversed by devices connecting the valve with, and actuated by the gang-shaft, substantially as and for the purposes described. 2nd. Reciprocating saws adjusted to ascend and descend in straight lines and vibrated, while reversing their vertical movements by the means herein set forth, consisting of the rock shafts C, C1, having cams c , connected with the guides b and the pistons D of a reciprocating engine, the cut-off valve of which is reversed by devices connecting the valve with, and actuated by the gang-shaft, substantially as and for the purposes described.

No. 18,734. Feeding Bottle. (Biberon.)

John Thomas, Beckenham, Eng., 28th February, 1884; 5 years.

Claim.—In a feeding bottle, the flute D or its equivalent, or a flute, or its equivalent, in the cork or stopper thereof, so that the suction tube may be supported between the neck of the bottle and the cork or stopper thereof, substantially as and for the purposes described.

No. 18,735. Direct-Acting Duplex Engine.

(Machine à Double Cylindres à Effet Direct.)

Charles C. Worthington, Irvington, N.Y., U.S., 23rd February, 1884; 5 years.

Claim.—1st. The combination, with a duplex pumping engine provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side of means, substantially as described, whereby power is stored up at one, and utilized at another period of the stroke of each side of said engine.

without preventing the variable pause at the end of each stroke peculiar to this engine. 2nd. The combination, with the main cylinders and pistons forming the two sides of a duplex pumping engine, provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side, of a compensating cylinder or cylinders at each side of said engine, each provided with a piston and rod, and supplied with a suitable motor fluid, and acting in opposition to the main cylinders and pistons to which they are connected, during the first part of the stroke of said main pistons, and in conjunction therewith during the last part of their stroke, substantially as described. 3rd. The combination, with the main cylinders and pistons forming the two sides of a duplex pumping engine provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side, of a compensating cylinder or cylinders at each side of said engine, each provided with a piston and rod, and supplied with a suitable motor fluid, and acting in opposition to the main cylinders and pistons to which they are connected, during the first part of the stroke of said main pistons, and in conjunction therewith during the last part of their stroke, and a cut-off mechanism, substantially as described. 4th. The combination, with a main cylinder and piston, of one or more compensating cylinders and pistons, and means for regulating the pressure of the fluid admitted to said compensating cylinder or cylinders, substantially as described. 5th. The combination, with a main cylinder and piston, of one or more compensating cylinders and pistons, a tank 4, means for regulating the pressure of the fluid in said tank and connections, substantially as described. 6th. The combination, with a cylinder 18 provided with a piston, and means for maintaining a constant pressure upon one side of said piston, of means for permitting the ingress and egress of a fluid from the opposite side of said piston, in such manner as to cushion said piston when it exceeds its normal speed, substantially as described.

No. 18,736. Polisher and Cleaner for Metal and other Surfaces. (*Polisseur et Nettoyeur des Surfaces Métalliques et autres.*)

William Heard, Paterson, N. J., U. S., 28th February, 1884; 5 years.
Claim.—The reservoir A, having spring *d* and cap *f*, in combination with the percolator B held in the reservoir A, so as to form the space *c* for holding the polishing or cleaning material, substantially as described.

No. 18,737. Fire-Escape. (*Sauveteur d'Incendie.*)

William H. H. Doane, Morganville, Ks., U. S., 28th February, 1884; 5 years.

Claim. 1st. A flexible ladder consisting of a rope forming the sides of the ladder, and a series of rounds secured to the ropes by a ferrule having a spur and clamping arms, substantially as set forth. 2nd. A device for securing ladder-rounds to the sides of a ladder consisting of a ferrule having a spur and clamping arms, substantially as set forth.

No. 18,738. Ventilator. (*Ventilateur.*)

John M. Ayer, Chicago, Ill., U. S., 28th February, 1884; 5 years.

Claim.—1st. In a ventilator, the combination of two hollow cylinders, one open at both ends to serve as the air passage and to fit within an opening in a window-sash, wall, or the like, and the other closed at one end and provided with side perforations, said cylinders being each provided with screw-threads and fitting one in the other, whereby the turning of the perforated cylinder carries it back and forth with relation to the other and opens and closes the perforations, substantially as described. 2nd. In a ventilator, the combination of a cylinder A, screw-threaded on its outer surface and open at both ends, and a cylinder B, closed at one end and screw-threaded on its interior surface, and adapted to fit over the said cylinder A, and provided with aperture *a*, substantially as described. 3rd. In a ventilator, the combination, with a cylinder A, screw-threaded on its outer surfaces and provided with a flange *r*, screen C and mechanism for securing the cylinder in position, of the cap B, A, and screw-threaded upon its interior surface, and closed at one end and provided with a handle, to permit it to be turned upon the window-sash, of the cylinder A, substantially as described. 4th. The combination, with the mechanism for securing the cylinder in position, cylinder B provided with apertures *a*, flanged cover *o* and handle *p* attached to the cap B and projecting outward from the sash, substantially as described and for the purpose set forth.

No. 18,739. Machine for Forming Ditches in Railroad Cuttings. (*Machine à faire les Fossés dans les Coupes des Chemins de fer.*)

Charles W. Case, Joseph O. Pattee and Archibald M. Long, Minneapolis, Minn., U. S., 28th February, 1884; 5 years.

Claim.—1st. The combination of a car A, the swinging derricks E1, E2 and their windlasses, a boom or beam G2, adapted to be projected from the car and moved back, and a bucket H1 connected to the two derricks by chains *b*, and to the projecting beam by draft chain *g*, whereby the several parts will operate, as set forth. 2nd. The car A, derricks E1, E2, E3, E4, booms G1, G2, G3, G4, and buckets H1, H2, in combination with the mud-drag I, substantially as and for the purposes set forth. 3rd. The mud-drag consisting of the hollow-disk shaped part L, wings *i1*, *i2*, and auxiliary wings *m1*, *m2*, substantially as and for the purpose set forth.

No. 18,740. Ironing Stand. (*Table à Repasser.*)

Nicholas Scholl, Chillicothe, Ohio, U. S., 28th February, 1884; 5 years.

Claim.—1st. In an adjustable ironing stand, the combination of the upright or standard, the bar or brace hinged to the same and

provided with a series of perforations, the block sliding upon said hinged bar and having a pin forced downwardly by a spring, so as to engage said perforations, and a bail pivoted in a transverse perforation in said sliding block and having the ends of its arms hinged to the upright or standard, as set forth. 2nd. In an adjustable ironing stand, the herein described frame consisting of an upright, a hinged brace, a block sliding upon said brace and connected with the standard by a pivoted bail, and a frame hinged to the upper end of the standard and having hinged segmental brackets provided with notches, engaging hooks upon the sides of the standard, in combination with a detachable ironing board, as set forth. 3rd. The combination, with the stand having hinged frame K, of the ironing board S having transverse cleat T provided with recesses U, and the bolt V having swivelled clamp W and thumb-nut X, as set forth. 4th. The combination, with the ironing board S having a loop or staple projecting therefrom, and a supporting block in front of said loop, of the herein described sleeve board having eccentrically-curved sides and provided with a shank at one end, and sleeve board being adapted to be either adjusted parallel with the ironing board or set on edge, for the purposes described. 5th. The combination, with the ironing board S having loop or staple O2 and supporting block P2, of the herein described sleeve board having eccentrically-curved sides and provided with a shank at one end formed with notches Q2 and grooves K2, and notch S2 in the said supporting block, for the purpose set forth. 6th. In an ironing stand, the combination of the upright or standard, the hinged frame K, bar C, segmental brackets O, hooks R and suitable adjustable and bracing means for connecting the parts together with the detachable board S, and the detachable and reversible sleeve board M2, as set forth.

No. 18,741. Steam Boiler Furnace.

(*Fourneau de Chaudière à Vapeur.*)

Edward Clark, New York, N.Y., U. S., 28th February, 1884; 5 years.

Claim.—The combination, in a furnace, of the vacuum chamber B arranged on the interior of the furnace above the fire-grate, and consisting of a hollow cast iron chamber having inclined outlet orifices C, C at one end, and a hollow stem E at the other, and provided with a bridge H near its middle, said bridge being cast in one piece with the chamber B, said chamber being supported in place by the hollow stem E passing through the front wall of the furnace and secured thereto and opening into the external air, and provided with a valve E1, formed substantially as shown, for regulating the supply of air, of the steam-pipe F, passing through the hollow stem E and terminating in two or more separate and distinct nozzle-pipes opposite the orifices C, C, said nozzle-pipes being securely supported in place by the bridge H, all constructed and operating substantially in the manner described.

No. 18,742. Thrashing Machine.

(*Machine à Battre.*)

William H. Thuresson, Brantford, Ont., 28th February, 1884; 5 years.

Claim.—In a thrashing machine, the combination of case F attached to the under side of shoe A and having riddles 1, 2 and 3, or any number of riddles required, also the application of fan K attached to side of thrashing machine, substantially as and for the purpose hereinbefore set forth.

No. 18,743. Car Wheel Chill.

(*Coquille pour Roue de Char.*)

William Wilmington, Toledo, Ohio, U. S., 28th February, 1884; 5 years.

Claim.—A car-wheel chill having in its flange face a peripheral receptacle for sand, or other non-conducting material, an annular opening *c* communicating therewith, and an annular reservoir of greater capacity than the opening *c* with radial outlets therefrom, as described.

No. 18,744. Shaft and Tongue Support.

(*Tuteur de Lmihonier*)

James McConnell and Edward H. Taylor, Vassar, Mich., U. S., 28th February, 1884; 5 years.

Claim.—In a shaft-support consisting of the arm B, having the lower L-shaped horizontal portion provided with a block 1a, to which is secured the thill-iron 2, the U-shaped middle portion *b*, laterally-enlarged upper extremity *b1*, having a shoulder *b3* interposed between the under faces of the laterally-extended portion and the support, the holding spring D, formed of a U-shaped portion *d*, semi-circular portion *d1*, and the outwardly flaring portion *d2*, the said spring being held in position by a plate B1, and secured by a bolt passing through eyes *b2*, *b3*, the whole being secured to the underside of the axle A, by the lower horizontal portion 1 and clip C, substantially as shown and described and for the purpose set forth.

No. 18,745. Fanning Mill. (*Turarc-Cribleur.*)

Samuel McClure and George Strangway, Watford, Ont., 28th February, 1884; 5 years.

Claim.—1st. The combination of the bolt or deck A A, the supports C C and the metallic spring D, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the bolt or deck A A and the shoe K K, substantially as and for the purpose hereinbefore set forth.

No. 18,746. Harrow. (*Herse.*)

Anthony O'B. Stiveson, Pomeroy, Ohio, U. S., 28th February, 1884; 5 years.

Claim.—A harrow consisting of the medium bars *c*, *c*, hinged together, the parallel bars *a*, *b*, attached at an acute angle thereto, and the two diverging sets of spike rollers *g*, journalled at right angles to, and between the said bars *a*, *b*, as shown and described.

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

- | | |
|---|---|
| <p>163. T. SAUNDERS and R. BAIN, Assignees, 2nd 5 years of No. 9650, from the 12th day of February, 1884. Improvements on safes, 2nd February, 1884.</p> <p>164. F. L. WILSON, 2nd 5 years of No. 10,361, from the 14th day of August, 1884. Improvements in wash boards, 2nd February, 1884.</p> <p>165. A. HARRIS, SON & COMPANY, 2nd 5 years of No. 9645, from the 11th February, 1884. Improvements in cutter bar guards for reaping and mowing machine, 9th February, 1884.</p> <p>166. J. L. BLAIN, Assignee, 2nd 5 years of No. 9647, from the 11th day of February, 1884. Improvements on the art of process of manufacturing twist drills, 9th February, 1884.</p> <p>167. G. BOURDEAU and C. E. COLSON, 2nd 5 years of No. 9642, from the 11th day of February, 1884. Compound for the manufacture of artificial stone, 11th February, 1884.</p> <p>168. J. H. GORDON, 2nd 5 years of No. 9676, from the 18th day of February, 1884. Improvements on grain binding machines, 15th February, 1884.</p> | <p>169. J. M. PARKER, W. BANCROFT and E. E. RAND, 2nd 5 years of No. 9772, from the 26th March, 1884. Improvements on gage lathes, 15th February, 1884.</p> <p>170. J. B. JONES, 2nd and 3rd 5 years of No. 17,575, from the 1st day of September, 1888. Improvements on compound metal or alloy for deoxidizing and coating metals, 15th February, 1884.</p> <p>171. I. BEST, 2nd and 3rd 5 years of No. 11,110, from the 7th day of April, 1885. Improvements on iron harrows, 16th February, 1884.</p> <p>172. W. McDONALD, 2nd 5 years of No. 9738, from the 11th day of March, 1884. Improvements on circular gang saws and edging machines, 23rd February, 1884.</p> <p>173. L. J. HERARD, 2nd 5 years of No. 9729, from the 10th day of March, 1884. Improvements on machines for making stove-pipe elbows, 26th February, 1884.</p> |
|---|---|

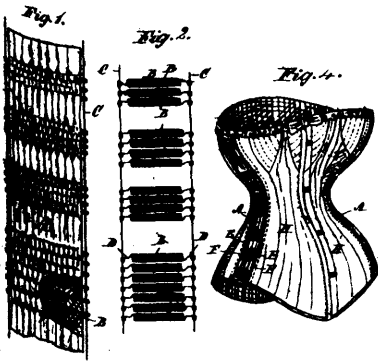
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CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

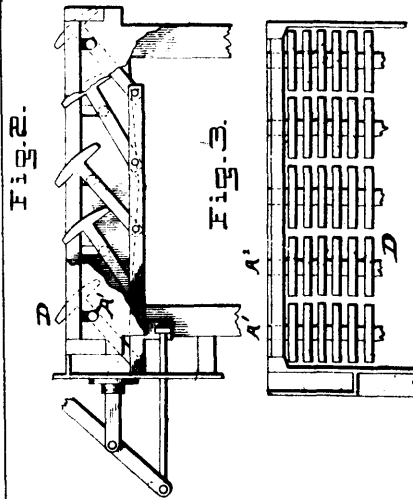
Vol. XII.

MARCH, 1884.

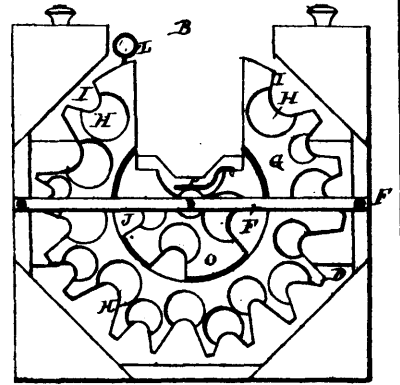
No. 3.



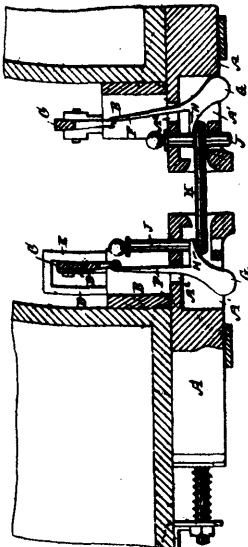
18604 Hardy's Elastic Sections, Gussets and Gores for Corsets, &c.



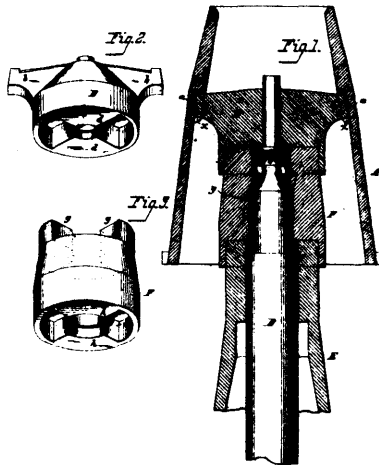
18605 Jones' Grate.



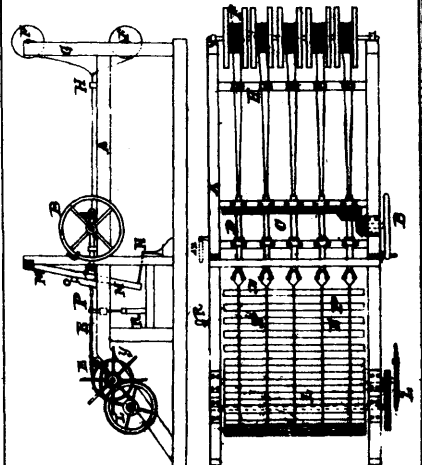
18606 Daugherty's Cabinet for Watch Crystals.



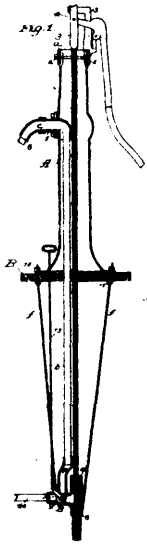
18607 Dougherty's Car-Coupling.



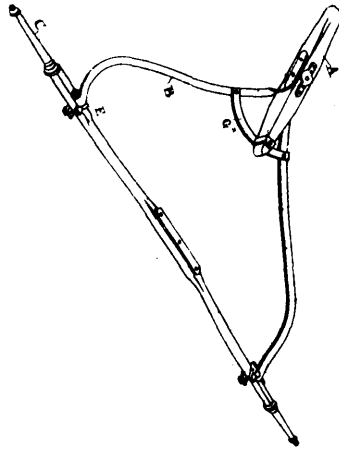
18608 Heard's Bush Box for Spindles.



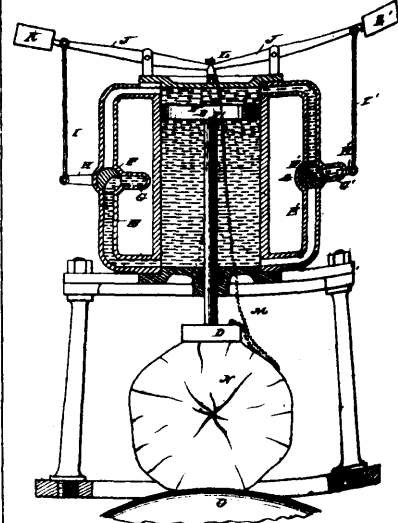
18609 Everett's Machine for making Fences.



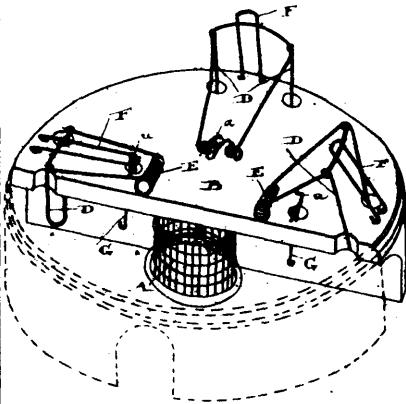
18610 Cornell's Pump.



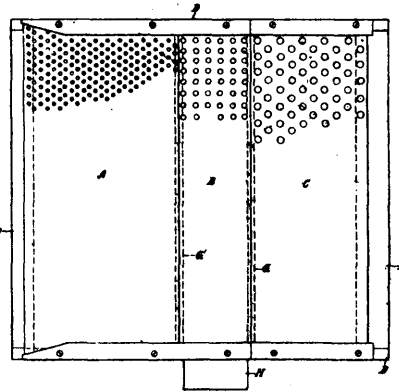
18611 Armstrong's Vehicle.



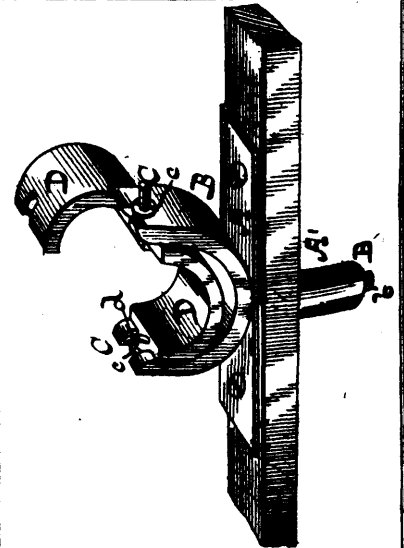
18612 Brokaw's Block Pressers for Wood Paper Pulp Machines.



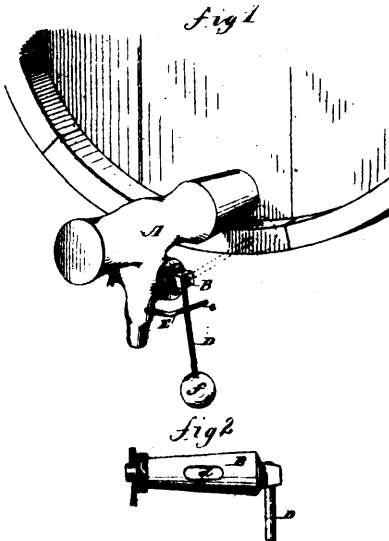
18613 Jarvis' Mouse Trap.



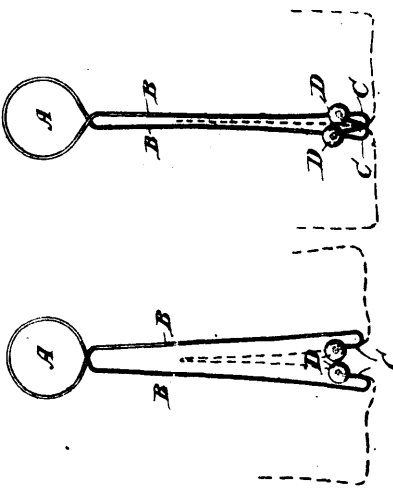
18614 Atwell & Floster's Riddle for Extracting Cockle and Wild Peas from Grain.



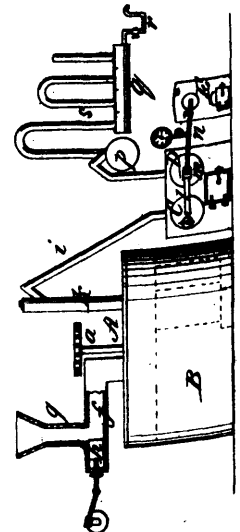
18615 Beaudreau's Rowlock.



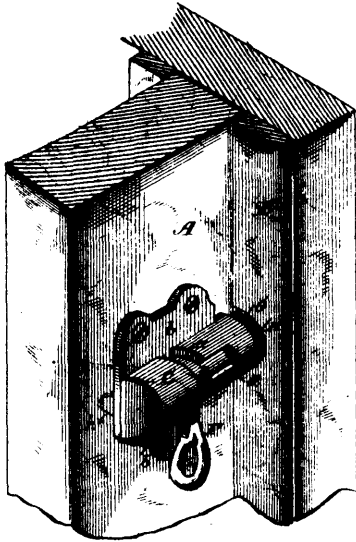
18616 Mayer's Self-Closing Spigot.



18617 Lancot's Fastening for Gloves and Mitts.



18618 Bicknell's Illuminating Gas Apparatus.



18619 Bourke's Sash-Holder.

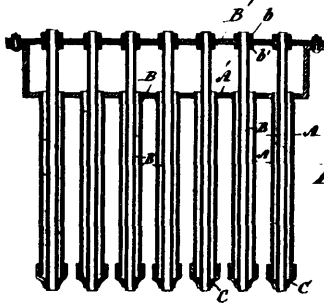


Fig. 1.

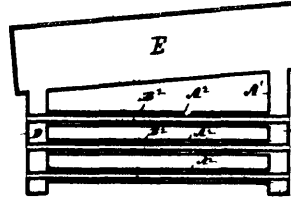
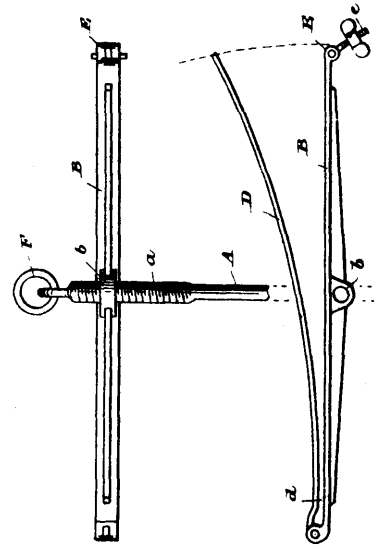
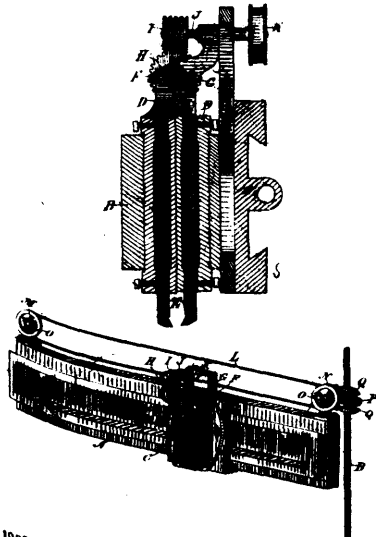


Fig. 4.

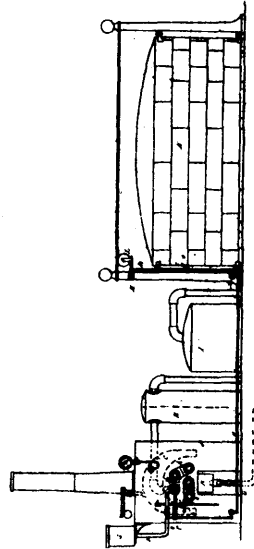
18620 Baldwin's Drop Tube for Boilers



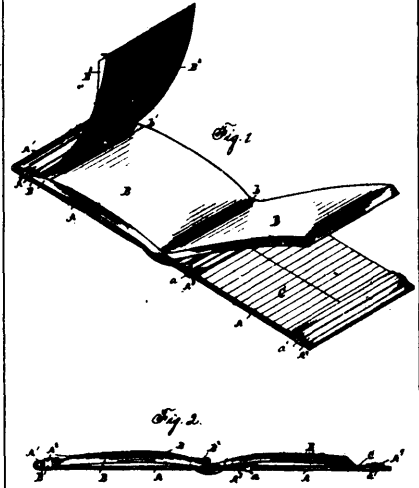
18621 Allison's Machine for Stretching Pants.



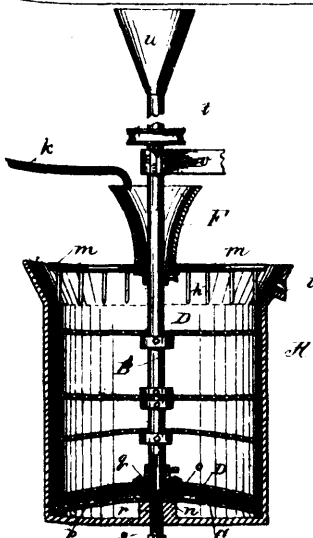
18622 Neild's Tool-Holder for Iron Planing machines.



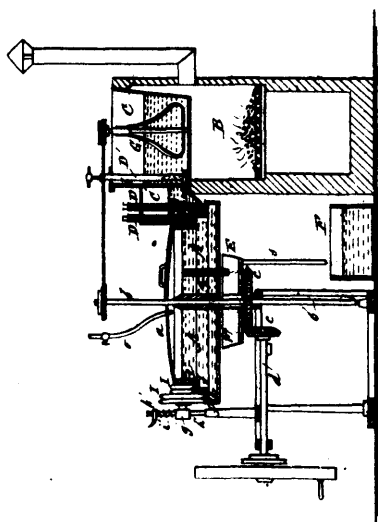
18623 Rogers' Gas apparatus.



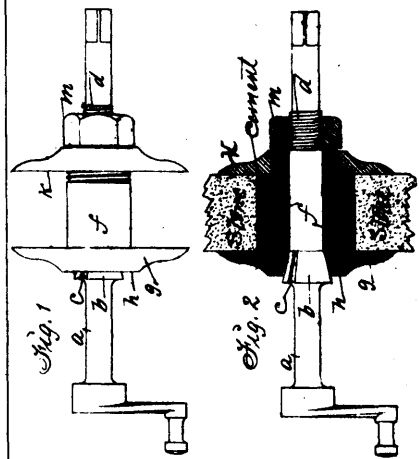
18624 Frink's Duplicate Memorandum or Sale Slip.



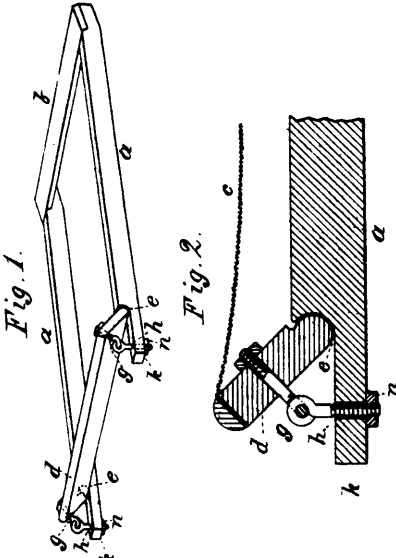
18625 Trippe's Apparatus for Amalgamating Gold and other metals and Separating the same from their Ores by means of Mercury.



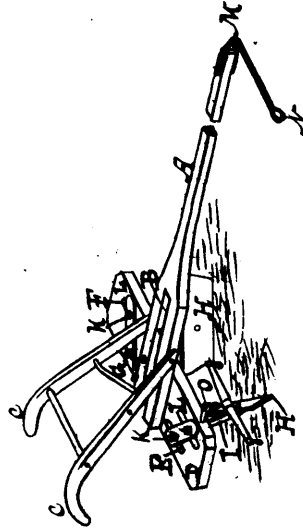
18626 Young & Dyer's Machine for Making Wire and other Solder.



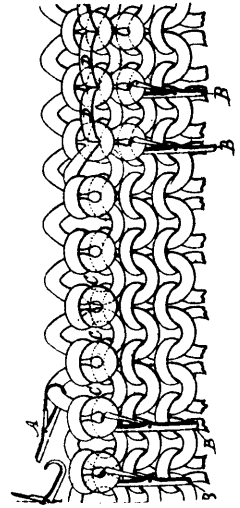
18627 Mason's Grindstone.



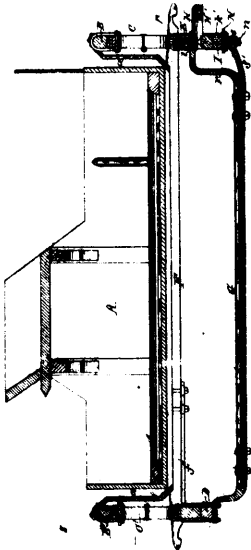
18628 Thatcher's Mattress Frame.



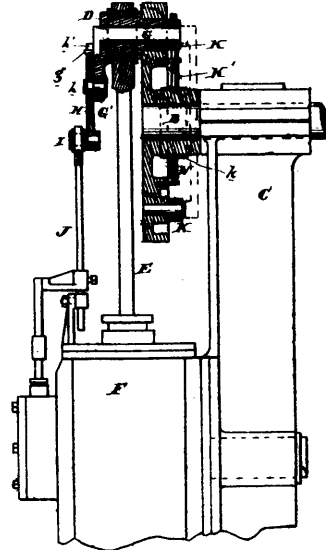
18629 Farnham's Horse Shoe.



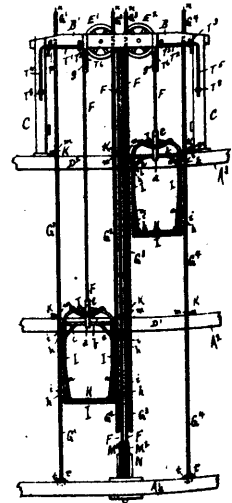
18630 Penman's Machine-Knitted Stocking.



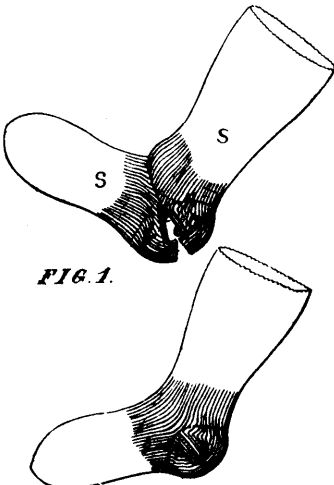
18631 Kreinheder's Spring Waggon.



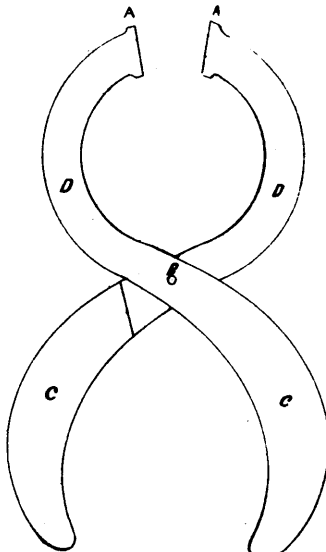
18632 Kriebel's Valve Gear for Steam Engine.



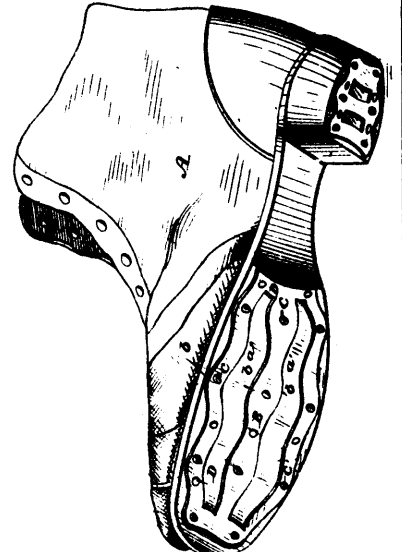
18633 Boyd's Hoisting Machine.



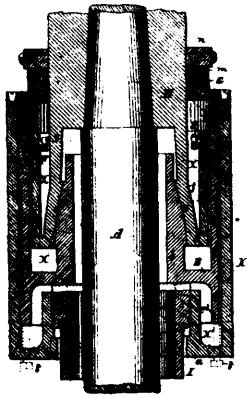
18634 Lennard's Stocking Heel.



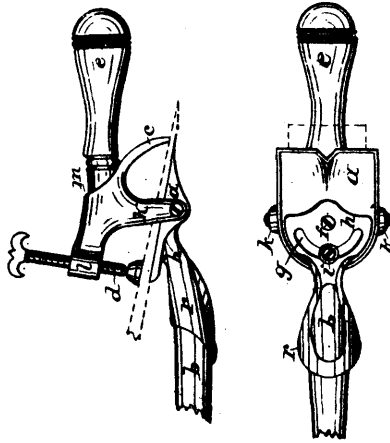
18635 Addison's Implement to Lift Clothes out of the Wash Boiler.



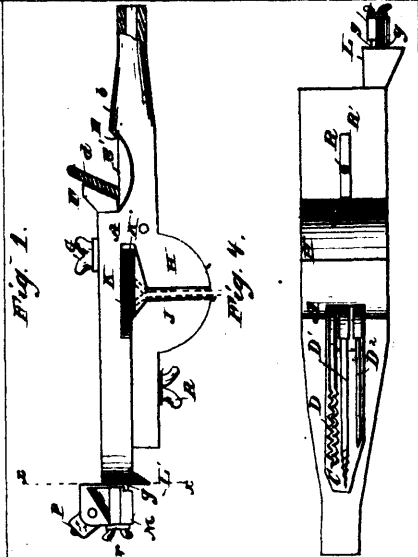
18636 Levy's Sole and Heel Plate.



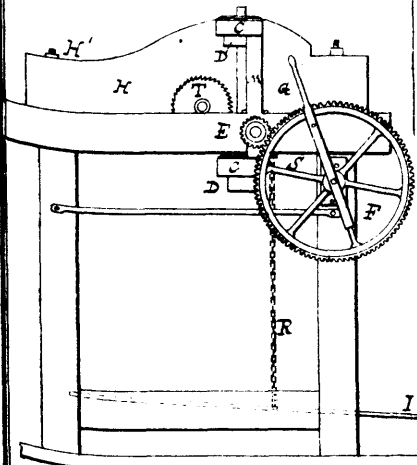
18637 Heard's Millstone Driver.



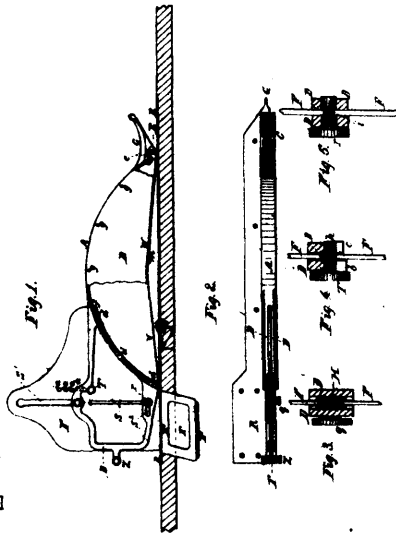
18638 Kennett's Tool-Holder for Grinding.



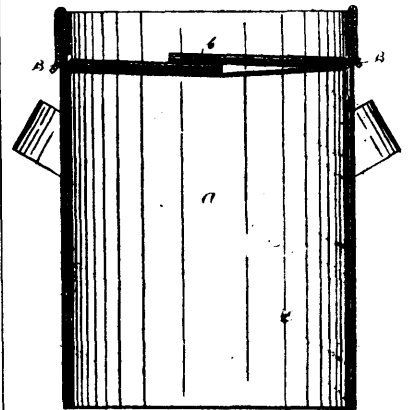
18639 Kistner's Combination Tools for Sharpening Skates.



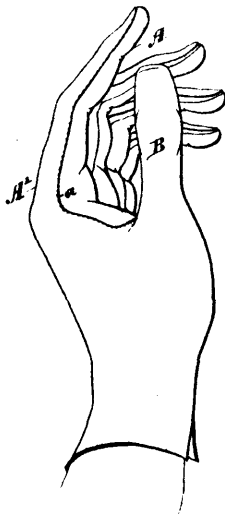
18640 Grant's Machine for Cutting Hoops.



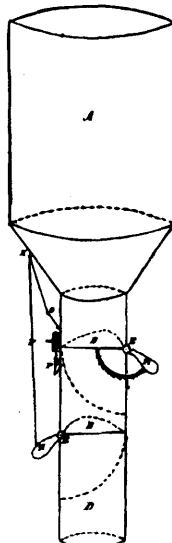
18641 Groff's Hood or Guard for Circular Saws.



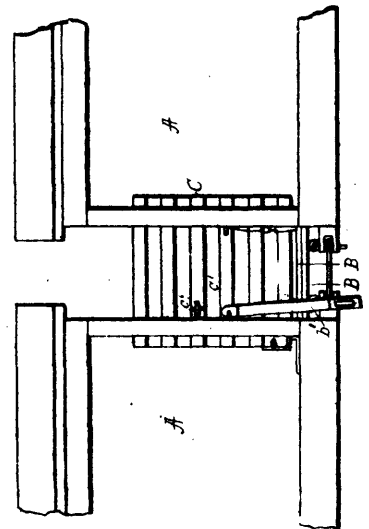
18642 Morton & Myer's Milk Can and Process for Cooling Milk and Purifying Cream.



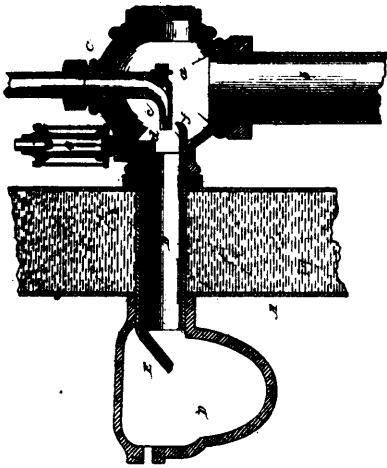
18643 Lanctot's Improvements in Gloves and Mitts.



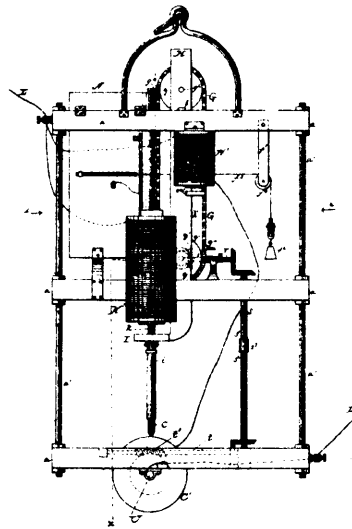
18644 Lemay's Feeding Reservoir for Stoves Consuming Saw Dust and the like.



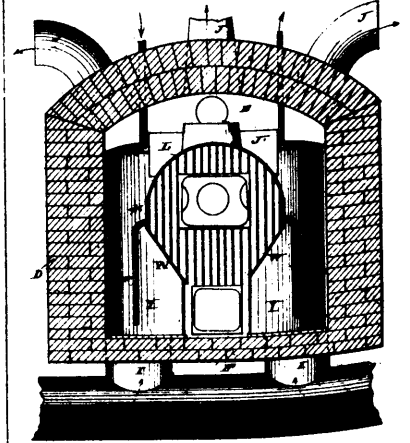
18645 Walker's Stock Car.



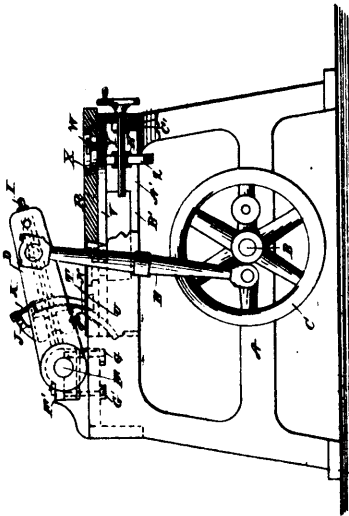
18646 Orvis' Hydro-Carbon Furnace.



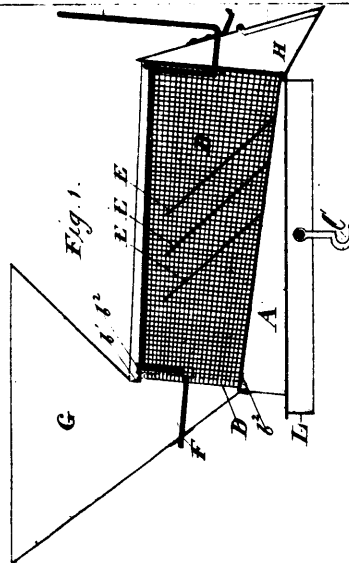
18647 Gifford's Magazine Electric Lamps.



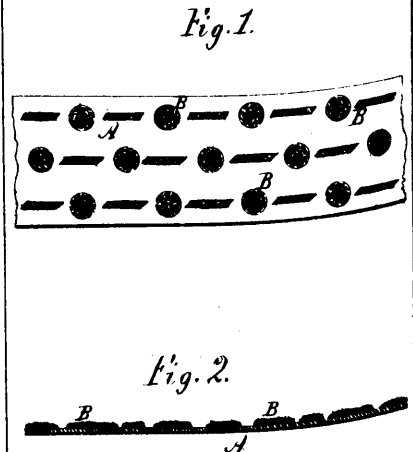
18648 Scate's Heating Furnace.



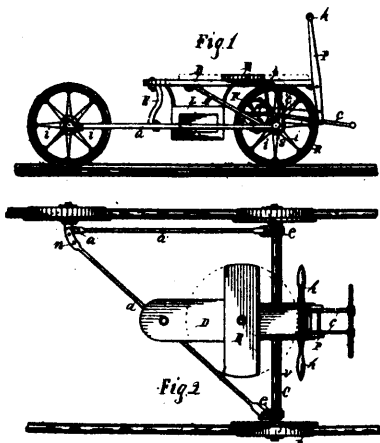
18649 Witzmann's Stave-Cutting Machine.



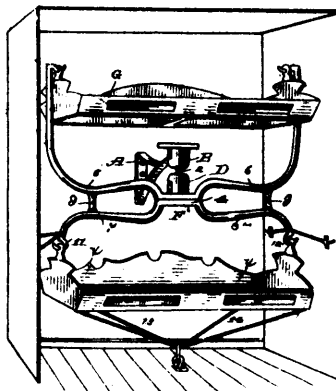
18650 Wisner's Cinder-Sifting Machine.



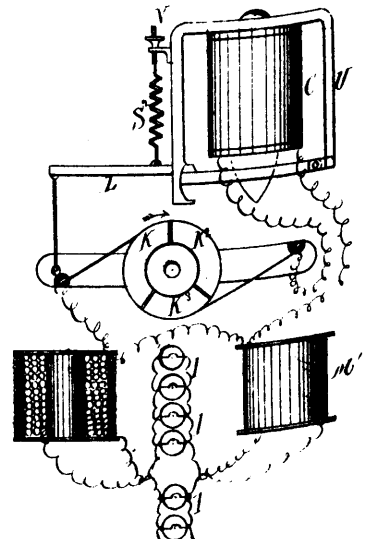
18651 Knopflin's Ornamenting Paper Hangings.



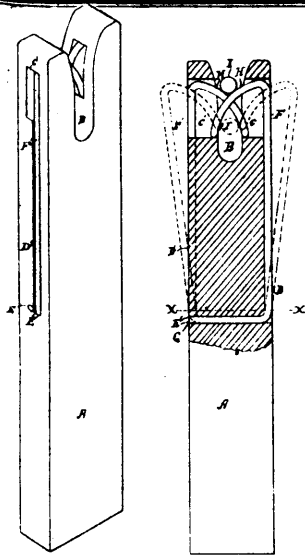
18652 Randal's Railway Velocipede.



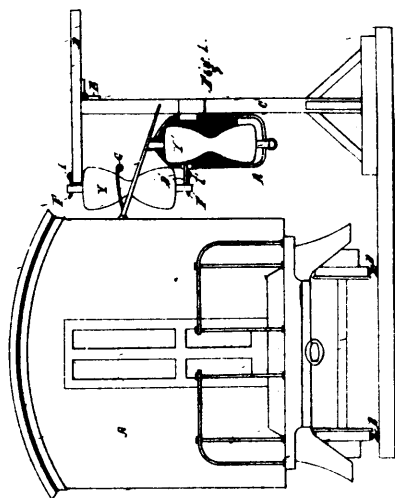
18653 Bickmore's Self-Levelling Berth.



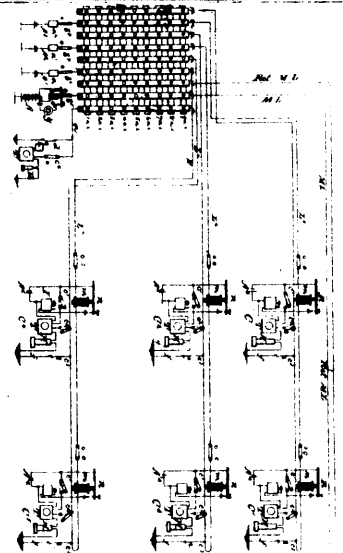
18655 Thomson's Electric Current Regulator.



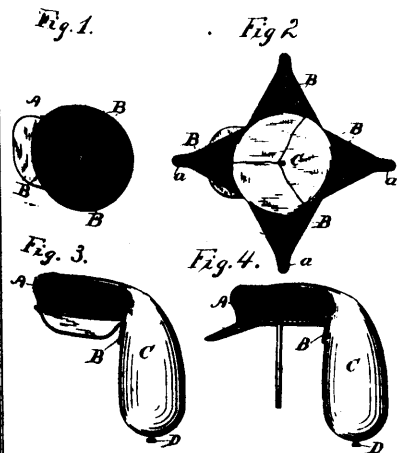
18656 Thompson's Tag.



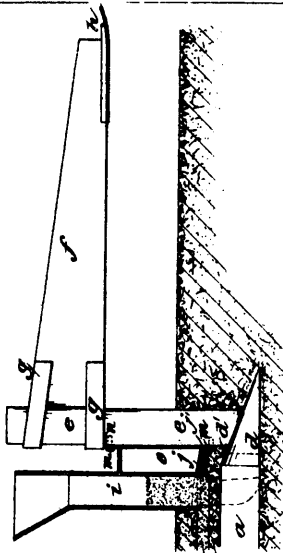
18657 Thompson's Mail Bag Catcher and Deliverer.



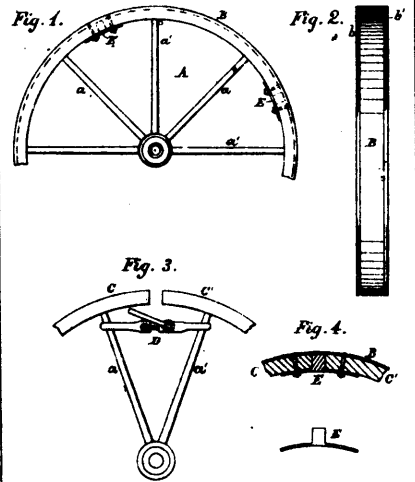
18658 Allen's Electrical Circuit.



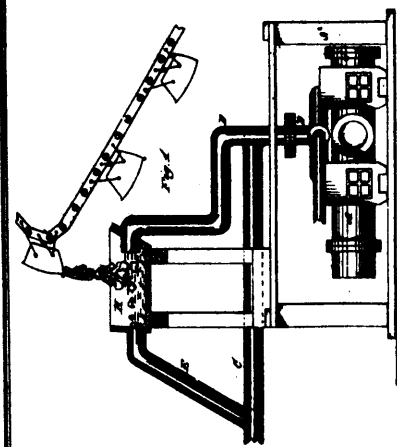
18659 Wood's Travelling Cap.



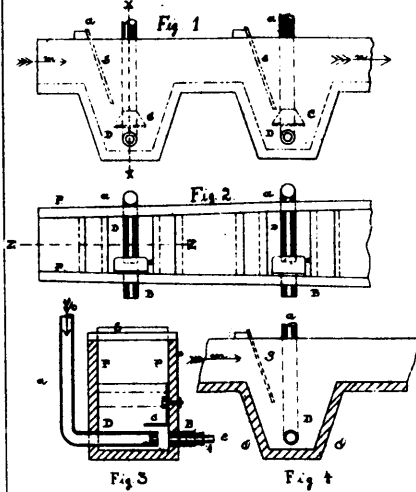
18660 Eaton's Method of and means for making Mole Ditches.



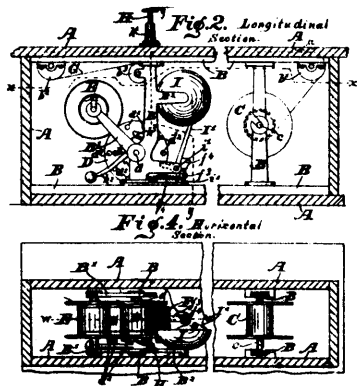
18661 Snyder's Vehicle Wheel.



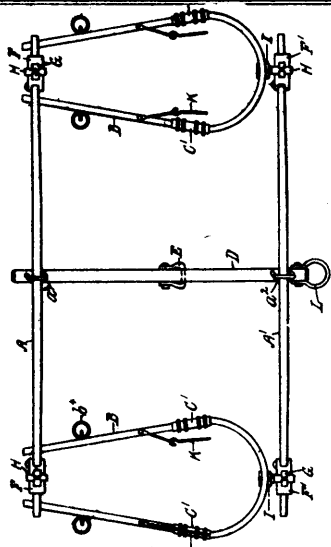
18662 Ball's Disintegrating hopper for Dredges and Excavators.



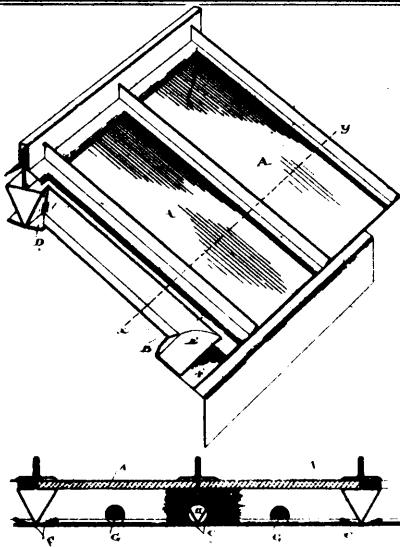
18663 Richards & Coggin's Ore and Mineral Separator.



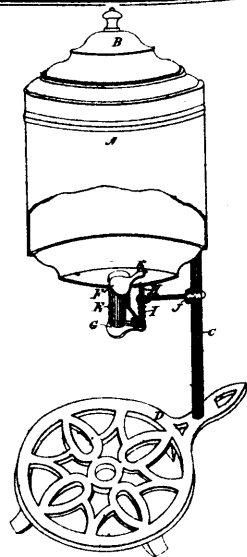
18664 Tague & Power's Cash Register.



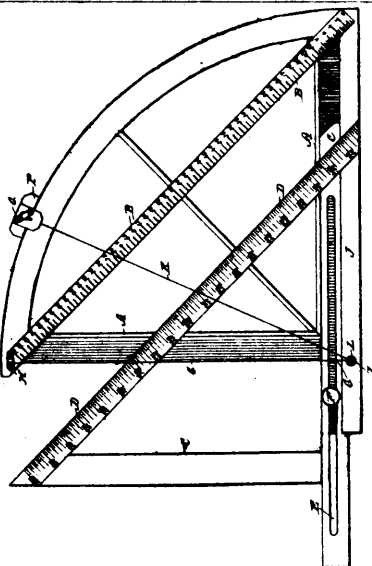
18665 Magee's Neck Yoke for Horses.



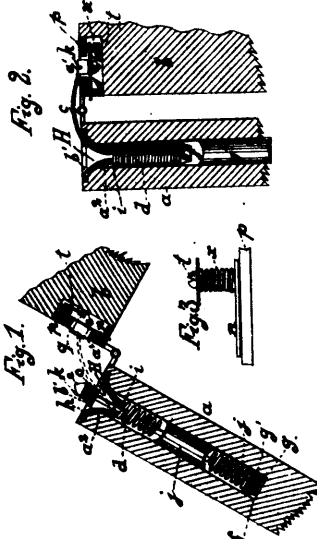
18666 Douglas' Skylight Sash.



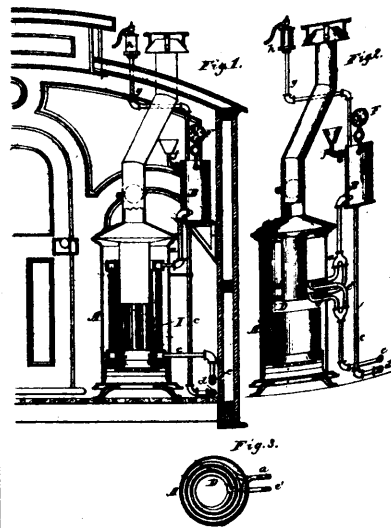
18667 McCarthy's Sugar Bowl.



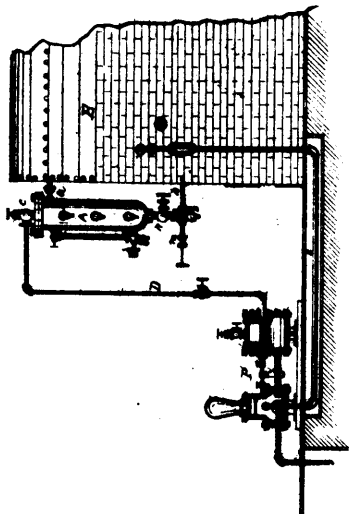
18668 Tucker's Percentage Calculator



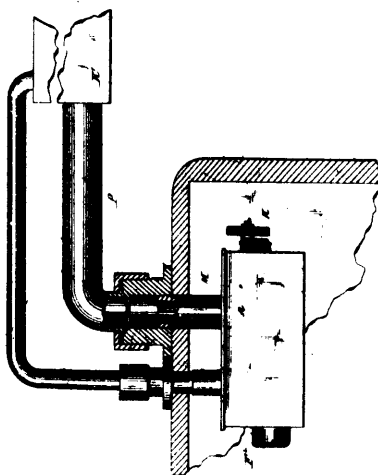
18669 Moore's Door Spring.



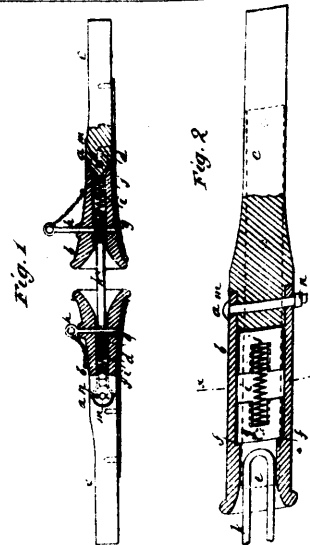
18670 Johnson & Buerkel's Heating Apparatus.



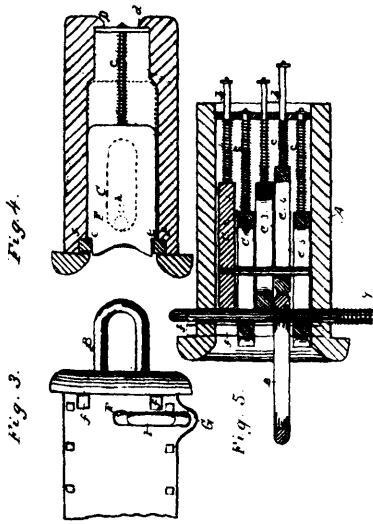
18671 Christman's Automatic Feed Water Regulator for Steam Boilers



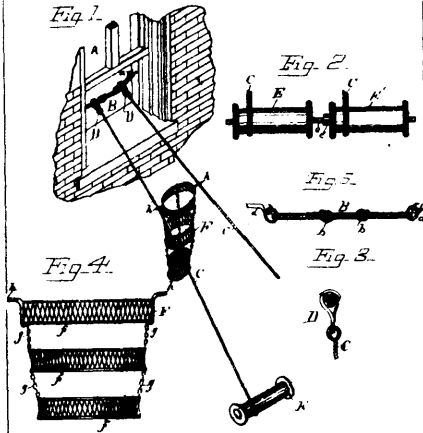
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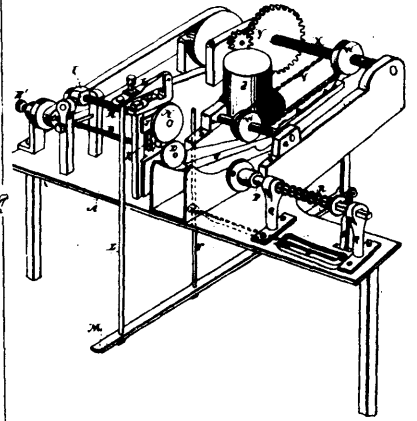
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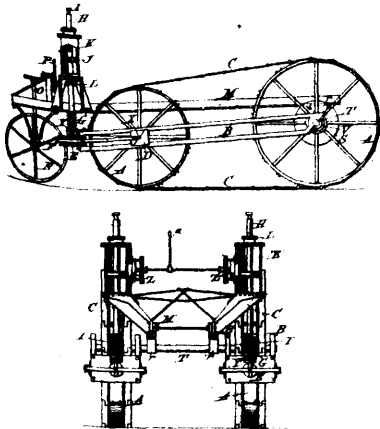
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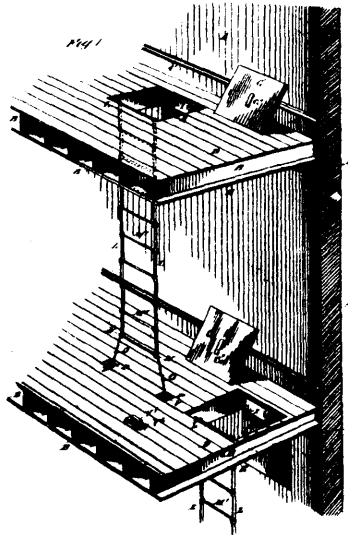
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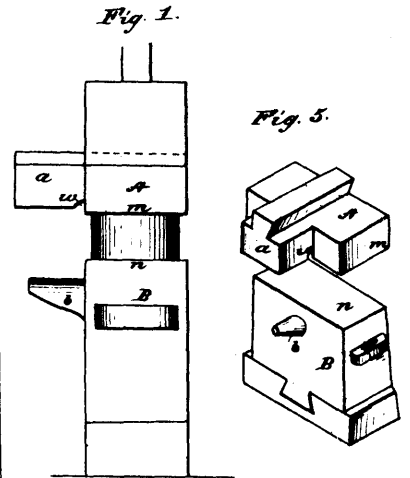
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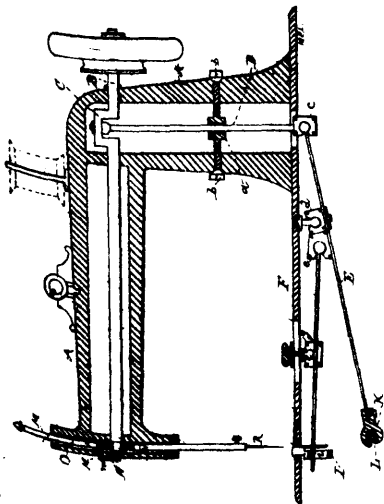
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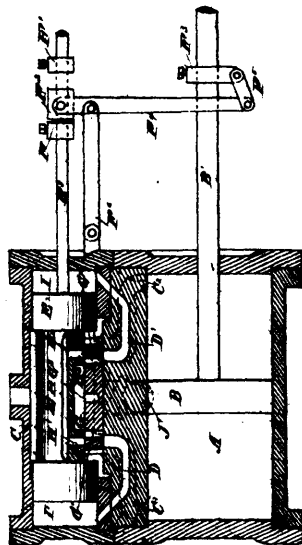
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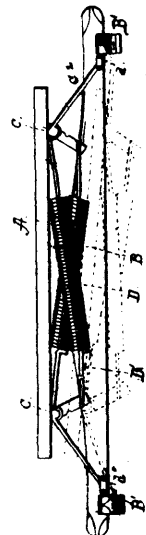
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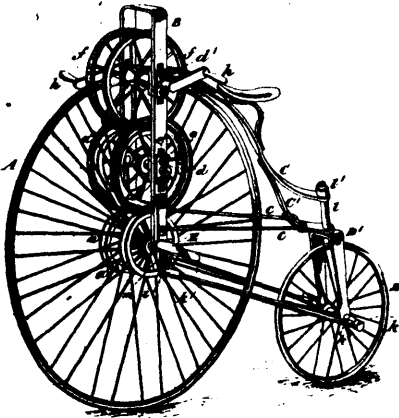
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Fig. 1.



Fig. 2.

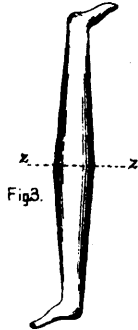
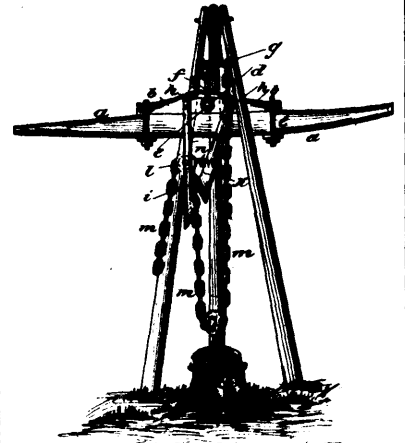


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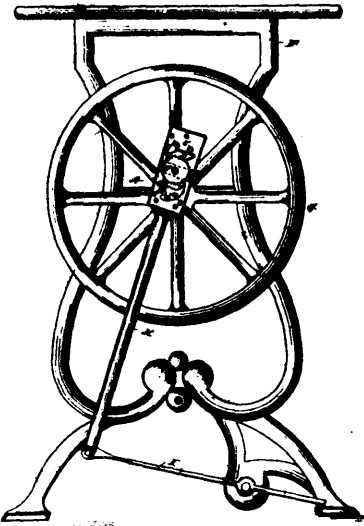


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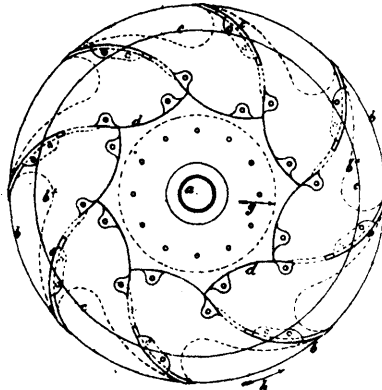
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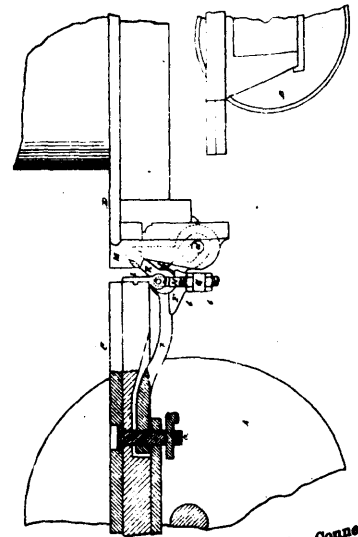
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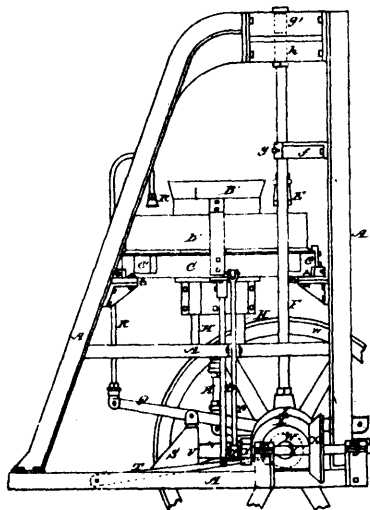
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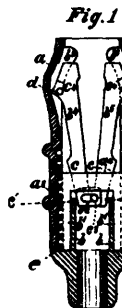


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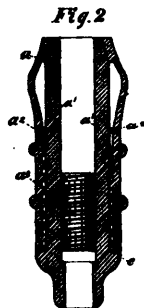


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Fig. 3.

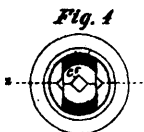


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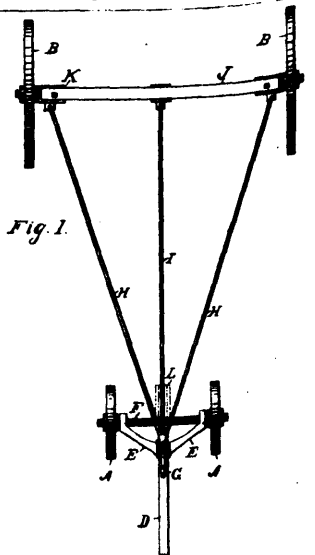
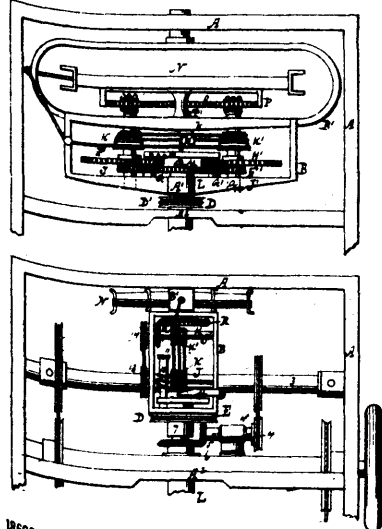
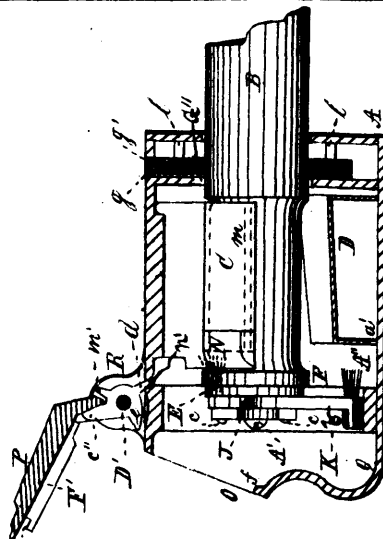


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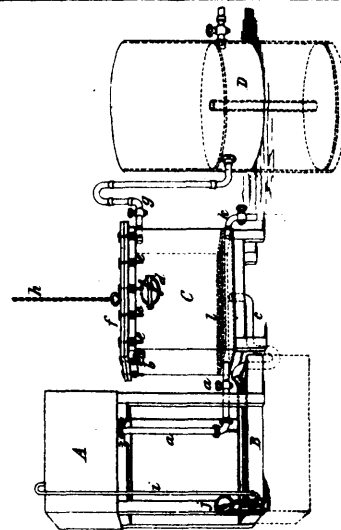
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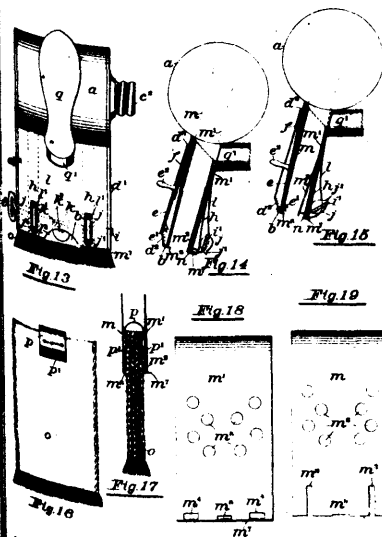
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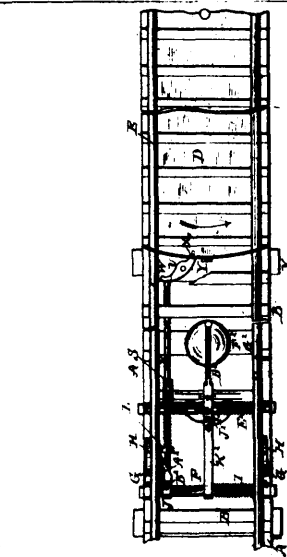
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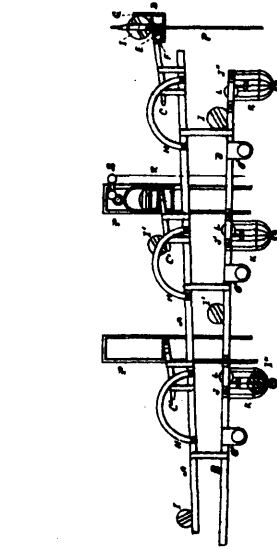
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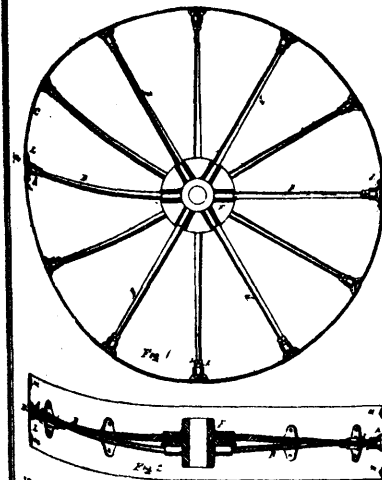
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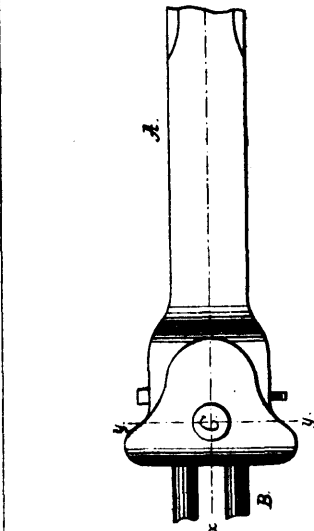
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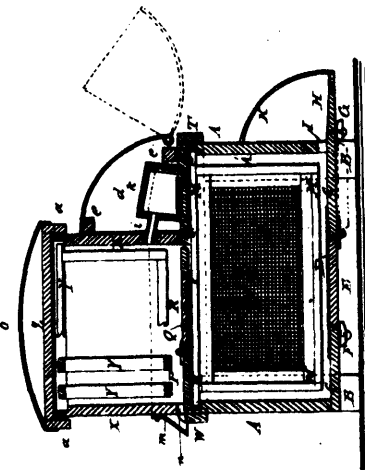
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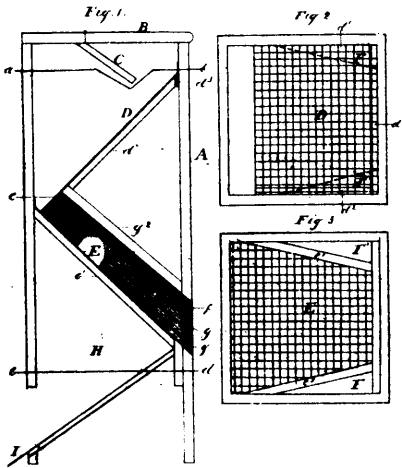
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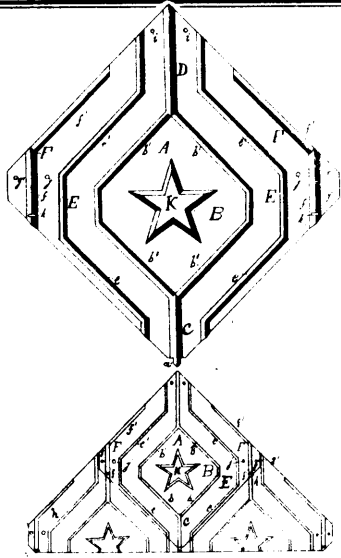
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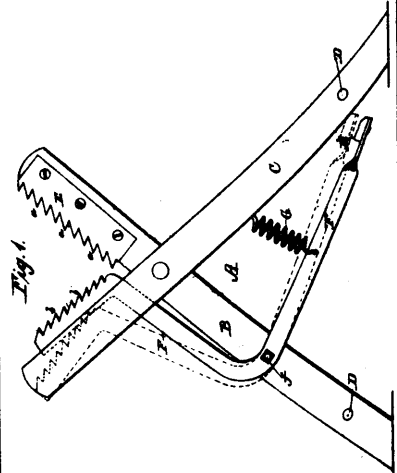
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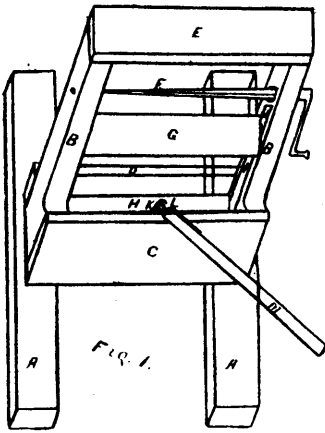
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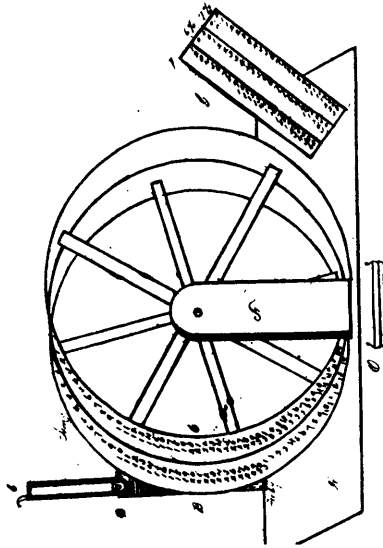
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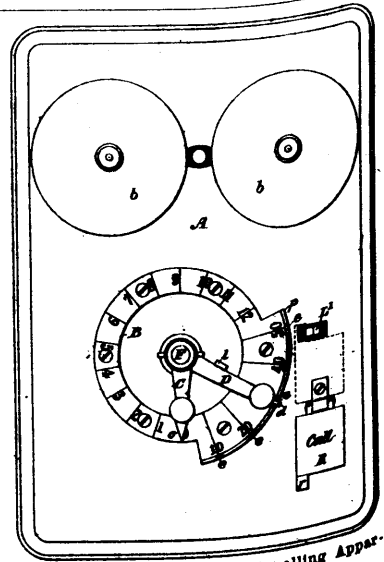
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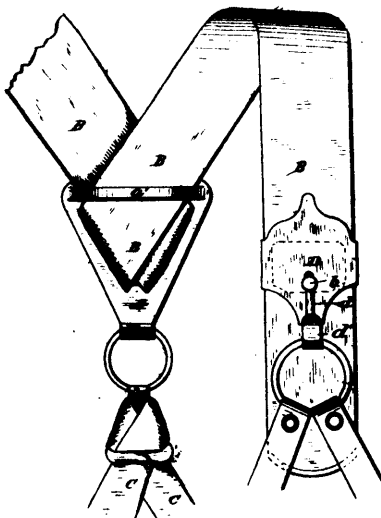
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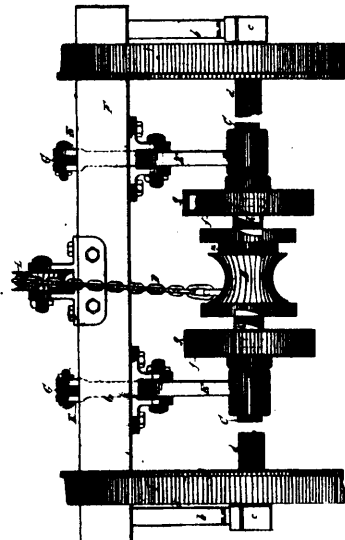
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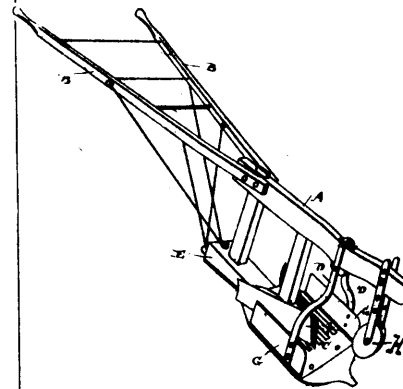
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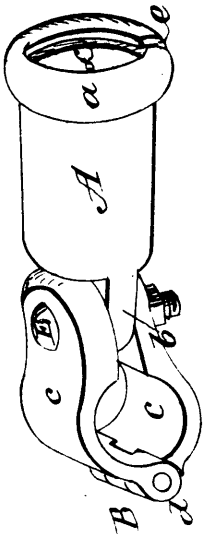
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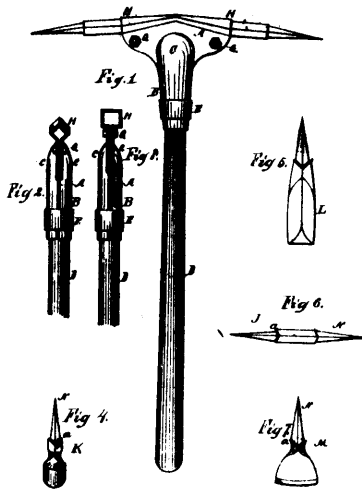
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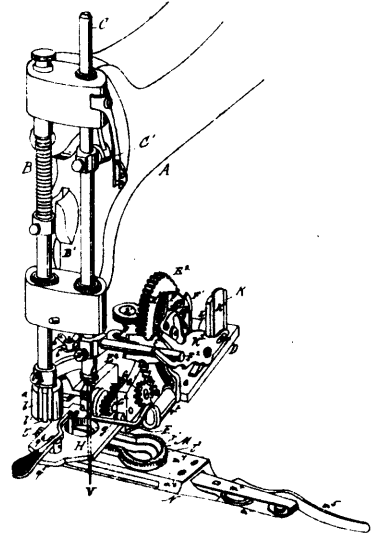
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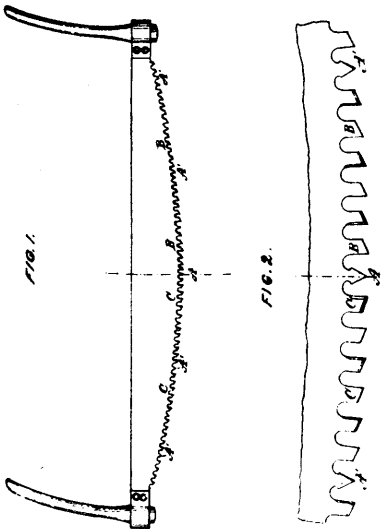
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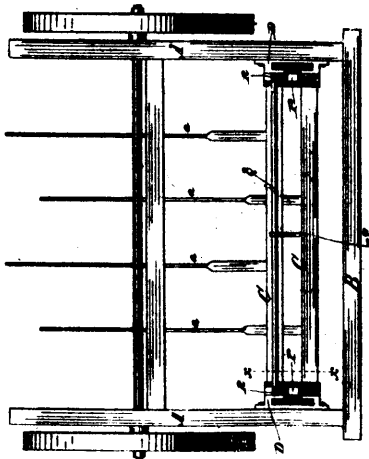
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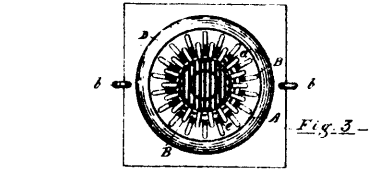
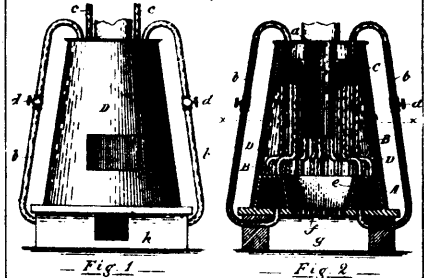
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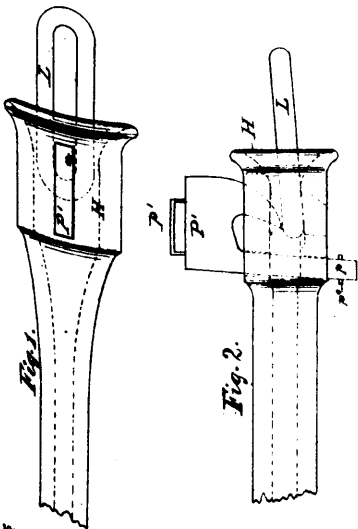
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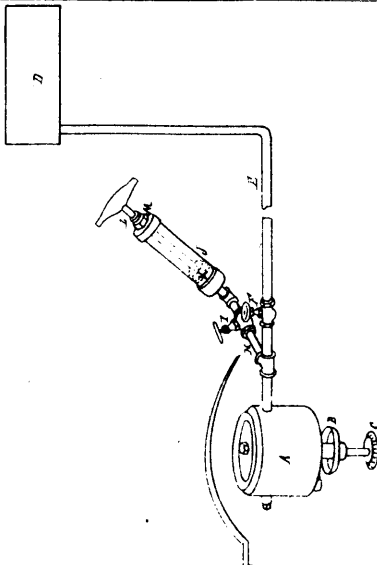
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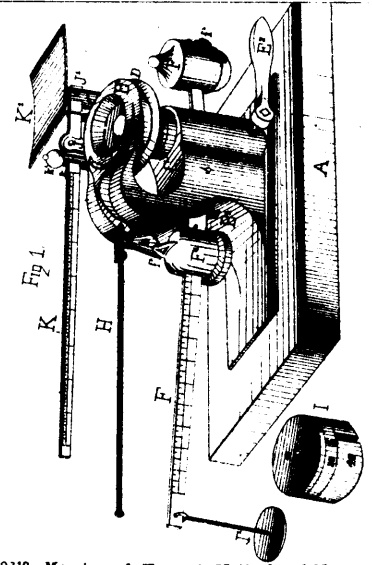
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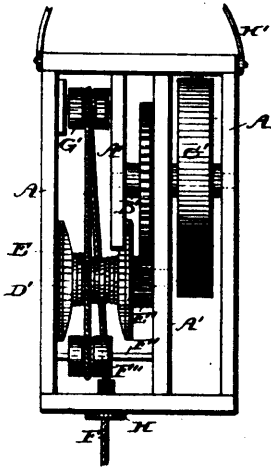
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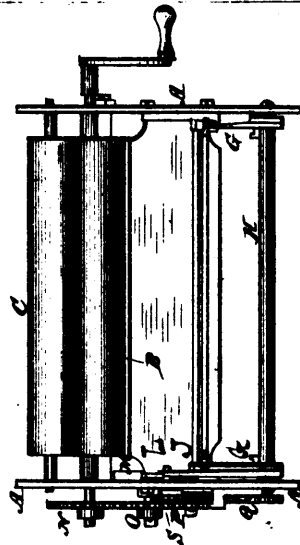
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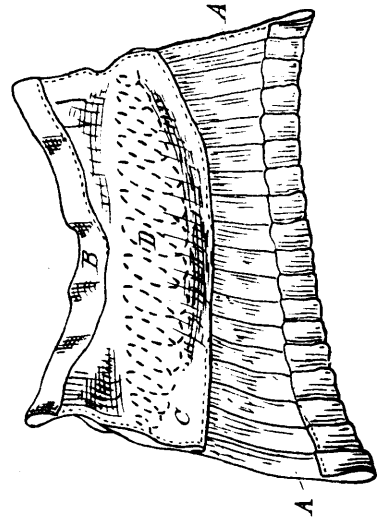
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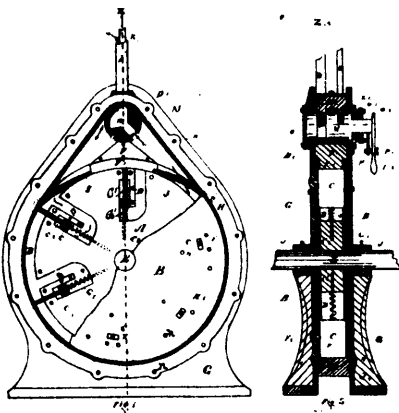
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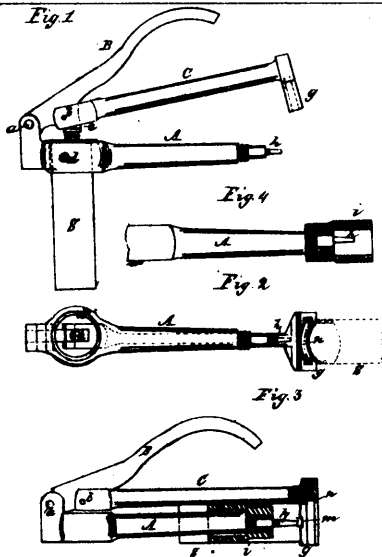
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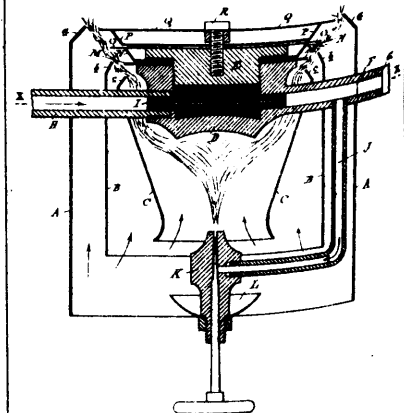
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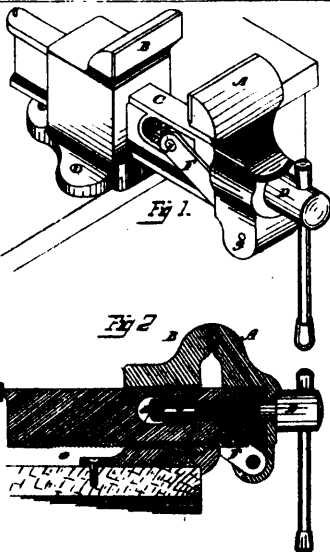
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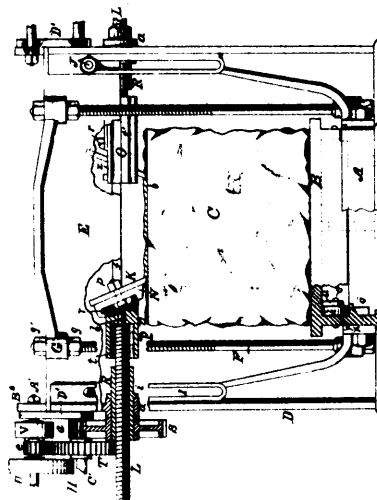
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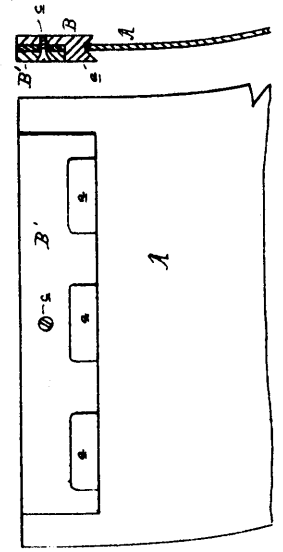
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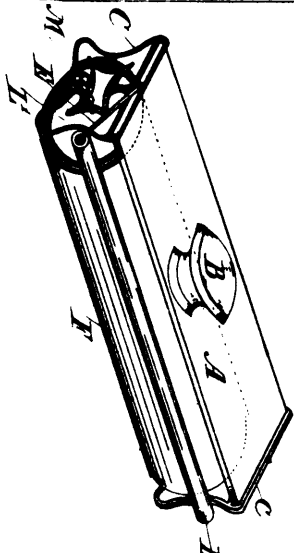
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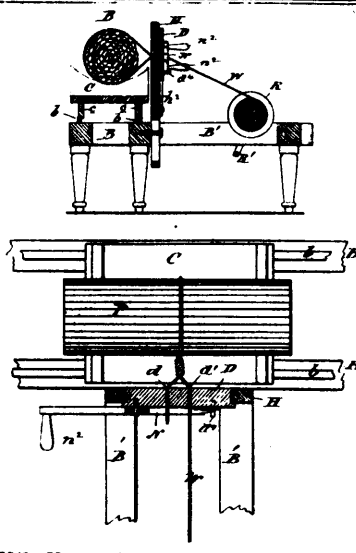
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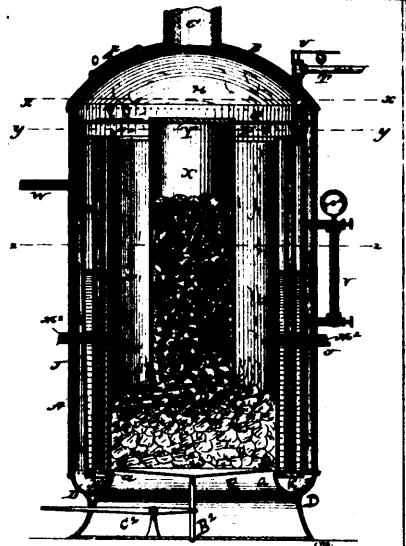
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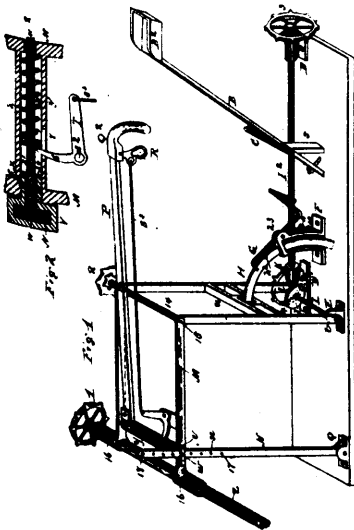
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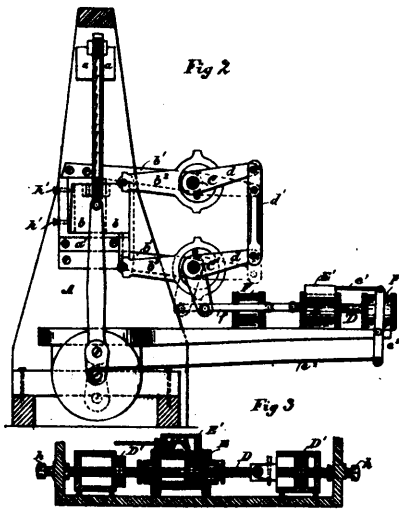
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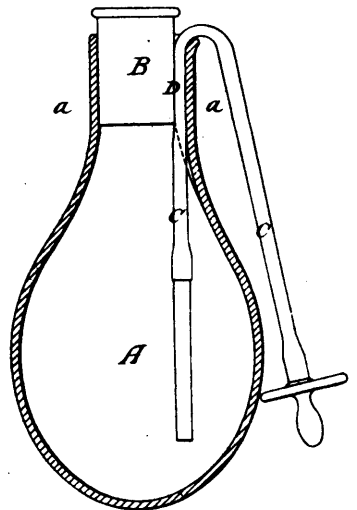
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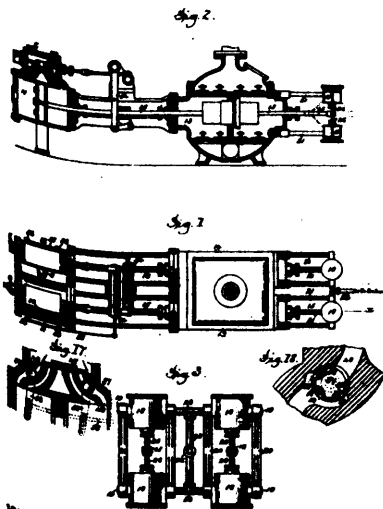
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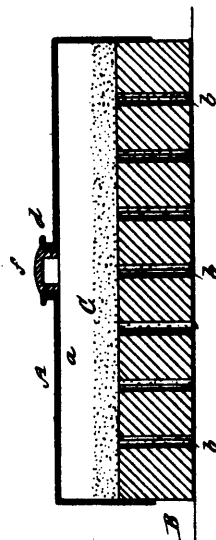
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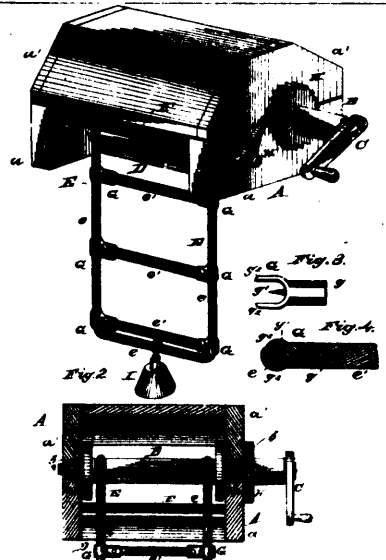
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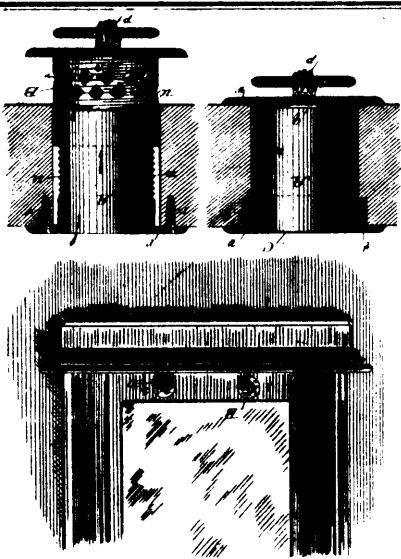
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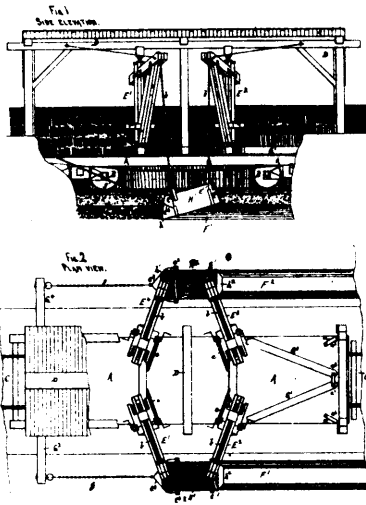
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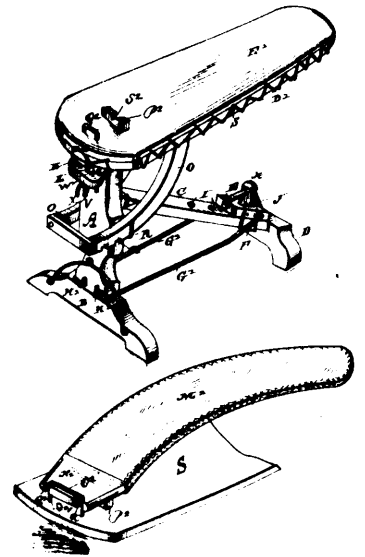
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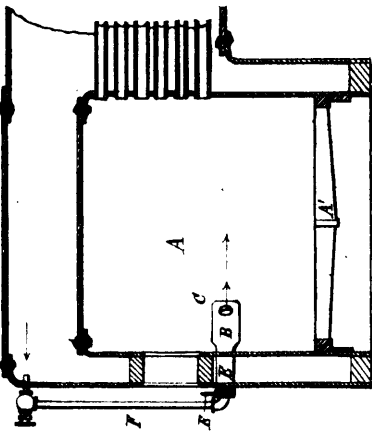
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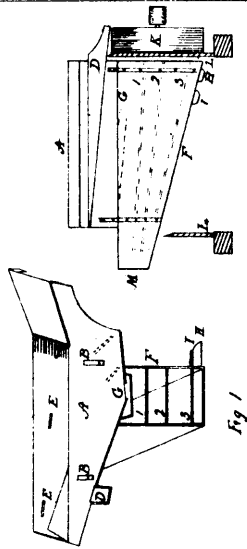
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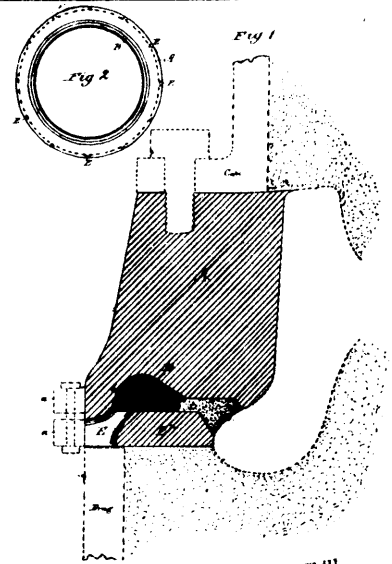
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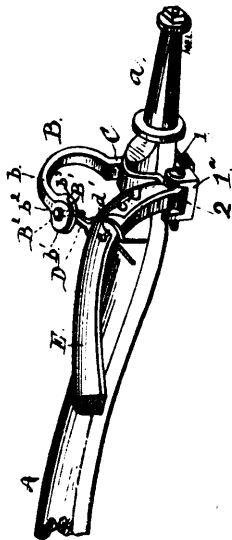
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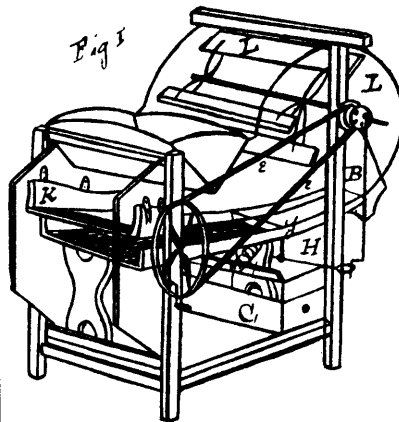
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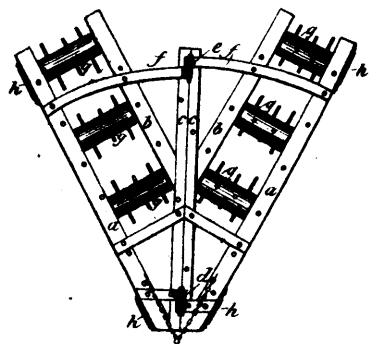
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