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The Canadian Patent Office

RECORD




Vol. XV.—No. 9.

SEPTEMBER, 1887.

Price in Canada \$2.50 per An.
United States - \$2.80

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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. 27,316. Post for Fences, Hitching Horses, etc. (*Pieux pour clôtures, attachés les chevaux, etc.*)

Arthur A. Parker, Jersey City, N.J., U.S., 1st August, 1887; 5 years.

Claim.—1st. A sheet iron post, tapering from the base to the top, and filled the entire length with cement or concrete, and having transverse holes through the iron and through the concrete, substantially as set forth. 2nd. An improved brace for fence posts, the same consisting of channel-iron enveloping an artificial stone body, and having fastened flanges projecting at each end, substantially as described. 3rd. A tapering rectangular hollow sheet-iron fence post, entirely filled with concrete or cement, and having holes in the iron at the places where the fence wires are to be fastened, and a base filled with cement to be inserted into the ground, substantially as set forth. 4th. A tapering rectangular hollow sheet-iron fence post, having holes through the iron and through the cement, and a base with a projecting foot, the whole being entirely filled with cement, substantially as set forth. 5th. A hollow sheet-iron fence post, filled entirely with cement or concrete, and having holes through the iron and through the cement, in combination with screw bolts having hooked ends, each bolt passing through the post, and the hooked end being received into a hole in the iron, substantially as set forth. 6th. A hollow sheet-iron fence post, entirely filled with cement, and having holes through the iron and through the cement for the fastening devices for the wires, substantially as specified. 7th. A sheet-iron post, with a filling of cement, and a cast metal cap with a flange around the upper end of the sheet metal, substantially as specified. 8th. A sheet-iron post, with a filling of cement, and a cast metal cap with a flange around the upper end of the sheet metal, and a hook going down into the cement, substantially as set forth. 9th. A sheet-iron post, with a filling of cement, and a cast metal cap with a flange around the upper end of the sheet metal, and a bolt and eye through the sheet metal, substantially as set forth.

No. 27,317. Feeding Bottle and Vessel for Children, Invalids etc. (*Biberon et ustensile pour enfants, invalides, etc.*)

Sidney J. Pocock, Vauxhall, Eng., 1st August, 1887; 5 years.

Claim.—The adaptation of a thermometer to a feeding bottle, drinking vessel or other vessel, for the purpose of registering the temperature of its contents, in the way and manner hereinbefore described.

No. 27,318. Snow Plough. (*Charrue à neige.*)

Peter B. Brazel, Cheboygan Mich., U.S., 1st August, 1887; 5 years.

Claim.—1st. In a snow plough, the combination of a single central supporting beam, a mould board mounted at about the centre thereof, bob sleds at each end of said central beam, and means for raising and lowering the mould board and supplementary runners, substantially as described. 2nd. In a snow plough, the combination of a single central supporting beam, a mould board mounted at or about the centre thereof, bob sleds at the front and rear ends of said central beam, a wing hinged to one side of the rear bob sled, and means for operating the several parts, substantially as described. 3rd. In a

snow plough, the combination of a single supporting beam, a mould board having an inclined upper side mounted on the said central beam, extensions on the rear side of the mould-board having inside flanges, blocks on the central beam with which the said inside flanges engage to form a dove-tailed slide, standards connected to said extensions and extending above the upper surface of the central beam, levers eccentrically mounted on said standards and engaging with the top of the beam, a link pivoted to said beam and engaging with the cam slot in the enlarged end of the lever and the front and rear bob-sleds, all arranged as shown and described and for the purposes specified. 4th. In a snow plough, the combination of a central supporting beam, a mould board connected to said beam by suitable extensions, and brace rods front and rear, bob-sleds connected to the beam, the front sled being pivoted thereto and the rear sled rigid therewith, a wing hinged to one side of the rear sled, and a toggle lever operated by a crank, having a ratchet and pawl attachment for operating the toggle lever to open and close the wing, substantially as described. 5th. In a snow plough, the combination, with a central supporting beam, having a mould board at or about the centre of the same, and bob-sleds attached to the front and rear thereof, of supplementary runners engaging with the inside portion of the runners of the rear sled, and means for forcing the said runners below the surface of the runners of the rear sled, substantially as and for the purposes specified. 6th. In a snow plough, the combination, with a central beam, having a mould board connected thereto at or about its central portion, and provided with means for raising and lowering said mould board, of a front bob-sled pivotally attached to the beam in the front thereof, a rear bob-sled rigidly attached to the said beam, a wing hinged to one side of said rear sled, supplementary runners on the inside thereof, and means, as set forth, for operating the several parts, substantially as described. 7th. In a snow plough, the combination, with a central supporting beam, having a mould board mounted at or near the centre of said beam, and provided with suitable means for raising and lowering the same, of a front bob-sled pivotally connected to the front portion of the beam, a rear sled rigidly attached to the beam, a wing hinged to one side of said rear sled having a metallic scraper on the bottom portion thereof, a toggle lever operated by a crank for opening and closing the said wing, supplementary runners on the inner sides of the runners of the said sled, levers adapted to force the runners down, and ratchet strips for holding the said levers, substantially as described. 8th. In a snow plough, the combination of a central supporting beam, a mould board mounted at or about the centre thereof of bob-sleds attached to the front and rear portions of the central beam, cross rods mounted in the inside rear portions of said bob sled, and central and side wheels mounted on said cross rods, adapted to come in contact with the snow or ice and keep the plough in its true line of draft, substantially as described. 9th. In a snow plough, the combination of a central supporting beam A, a mould board C mounted at or about the centre thereof and in connection therewith, bob-sleds B and B' attached to the front and rear portions of the central beam, a wing D hinged to one side of the rear sled, supplementary runners E secured to the inner sides of the runners of said rear sled, and means, as set forth, for raising and lowering the several parts, substantially as described. 10th. In a snow plough, the combination of a central beam A, a mould board C, extensions c' connected to said mould board, standards l, l' connected to said extensions, a cross rod 2 on which an enlarged end of a lever 3 is eccentrically mounted, a cam slot 4 cut in said end of lever 3, engaged by a link 5 pivoted to beam A, and a metallic bearing surface 6 on the upper edge of the beam A, all arranged as set forth and for the purposes specified.

No. 27,319. Foot Warmer. (*Chaussette.*)

Marcel E. Lymburner, Montreal, Que., 1st August, 1887; 5 years.

Claim.—1st. A foot warmer, composed of the box A having the cover B attached thereto, and provided with an inside perforated tray G for holding a heated brick, and to which is attached a hinged cover h, substantially as shown and described. 2nd. In a foot warmer, the box A having uneven or serrated edges, the openings i, and having both its lid B and feet d covered with a non-conducting material, as shown and described. 3rd. The combination, in a foot warmer, of the perforated box A partially covered with a non-conducting material, and the perforated tray G with a combustible brick that may be consumed by heat, without giving off either smoke or odor, substantially as herein shown and described.

No. 27,320. Oil Can. (*Bidon à huile.*)

William W. Hill and Ore M. Fergeusen, Codillac, Mich., U. S., 1st August, 1887; 5 years.

Claim.—The combination of the oil-can, having the discharge nozzle C, the valve seat, sleeve E located in the said nozzle, the air-tube F extending downward in the can on the side opposite the point of the nozzle, and reaching nearly to the bottom of the can, the operating rod H bent to form a vertical outer arm extending through the bore of tube F, and of less diameter than said bore, and the inner arms extending upward into the nozzle and provided with the valve I to fit in the valve-seat, the cap or button K on the upper end of the outer arm of the operating-rod, and the spring A for the cap or button, substantially as described.

No. 27,321. Combined Land Roller and Seeder. (*Rouleau-semoir.*)

Jay S. Corbin, Gouverneur, N. Y., U. S., 2nd August, 1887; 5 years.

Claim.—1st. The combination of the box-frame A, Ar, tongue C, strut D, bracket D₁, bearings E, axle F, drum G, hubs G, spokes G₁, fellows G₁₁, nuts G₁₁₁, rollers H, bracket H₁, seed box I, blocks I₁, tube I₂, slots I₃, shaft I₄, slots I₅, pulley J, lever K and rod K. 2nd. The combination of the box A, Ar, tongue C, mortises and wedges C, bearings E, axle F, drums G and expansive heads G, G₁, G₁₁, G₁₁₁. 3rd. The combination, with a main frame, of elastic down-hangers provided with bearings adapted to receive the axle of the roller. 4th. The combination of a drum, a box having sides, a bottom and end pieces having downward elastic extensions, which are provided with bearings for the drum. 5th. The combination of the frame A, Ar, tongue C, mortise and wedges C, bracket D₁, strut D₁ and seat D. 6th. The combination of the sheet cylinders G, fellows G₁₁, nuts G₁₁₁, spokes G₁ and hubs G. 7th. The combination of the box A, Ar, bearings E, axle F, roller section G, bracket H₁ and pulleys H. 8th. The combination of the box A, Ar, tongue C, box I, blocks I₁, tube I₂, slots I₃, shaft I₄, slots I₅, pulley J, lever K and rod K. 9th. The combination of the frame A, Ar, tongue C, box I, blocks I₁, tube I₂, slots I₃, shaft I₄, slots I₅, pulley J, lever K and rod K. 10th. The combination of the box I, blocks I₁, tube I₂, slots I₃, shaft I₄ and slots I₅. 11th. The combination of the box I, tube I₂ and shaft I₄. 12th. The combination of the tube I₂, slots I₃, shaft I₄ and slots I₅. 13th. A combined land roller and seeder, composed of a stone or weight box performing the functions of a frame, in which the roller axle is flexibly journaled, sheet metal drums having expansive heads forming the roller, detachable tongue wedged into the weight-box and carrying seat detachably, a seeder-box pivotally attached to the tongue, controlled by flexible lever, and the seeding mechanism composed of a slotted rotary shaft in a slotted stationary tube. 14th. A land roller composed of a stone or weight box, having the roller axle journaled to its downward extending flexible ends, a roller composed of sheet metal drums, having expansive heads, friction rollers upon the roller sections, detachable tongue wedged to the weight box and carrying seat detachably. 15th. A roller section, consisting of a sheet metal cylinder, and expansive head composed of a hub having spokes which have their outer ends threaded and provided with nuts, fellows having their inner edges straight and overlapping the end of the next, and having projections to keep their position on the sheet metal. 16th. In a land roller, the combination of a main frame, downward projecting hangers, an axle mounted at its ends in the hangers, hubs mounted on the shafts, spokes, fellows mounted on the spokes, a sheet metal enclosing cylinder surrounding the fellows, and means for adjusting the fellows outward upon the spokes. 17th. In a land roller, the combination of the main frame and axle mounted in the same, a series of hubs mounted loosely upon the axle, spokes projecting outward from the hubs outward, adjustable fellows at the outer ends of the spokes, and a sheet metal drum or drums supported upon the fellows and connecting the series of hubs. 18th. In a land roller, the combination of a main frame, an axle, a drum and a friction roller located externally to said drum to prevent the axle from undue springing. 19th. In a combined land roller and seeder, a drum or cylinder, a seeding mechanism provided with a wheel to travel upon the external surface of the drum, and means for holding said wheel in or out of contact with said drum. 20th. In a seeder, the combination of a slotted tube, a slotted shaft within a tube, and means for rotating the shaft. 21st. In a seeder, a slotted tube, a slotted shaft rotating in said tube and capable of being moved endwise therein to vary the quantity of seed discharged. 22nd. The combination of a seed-box, a slotted tube fixed therein, a slotted shaft within the tube, washers mounted upon the shaft, and a forked removable bracket between the washers, all substantially as shown and described and for the purpose set forth.

No. 27,322. Barbed Wire. (*Fil de fer barbeté.*)

Julius Schmidt, Hagen, Germany, 2nd August, 1887; 5 years.

Claim.—1st. A barbed wire, produced from wire having one or more ribs, the barbs or teeth produced by indentations pressed edgewise into the rib or ribs by serrated rolls, and the displaced materials forced wholly or partly into the projecting or remaining barb or tooth so formed, substantially as set forth. 2nd. A barbed wire, produced from a wire having one or more ribs, the barbs or teeth formed by incisions in the rib or ribs made by obliquely serrated rolls, and the corners of such teeth forced laterally and in opposite directions, substantially as set forth.

No. 27,323. Type Writing Machine.

(*Graphotype.*)

Eugene Fitch, Des Moines, Iowa, U. S., 2nd August, 1887; 5 years.

Claim.—1st. In combination, a series of type-carrying arms arranged in one frame, having a common axis of rotation, and provided with hinged joints between their axis and their ends, the successive arm from the centre to the end arms having an increasing lateral bend, substantially as set forth. 2nd. A series of type-arms, composed of two pieces laterally hinged together, the parts so hinged being placed and held in juxtaposition on a shaft passing through

one of the sets of pieces, the sides of the laterally moving arms or parts to which the type are attached, acting as guides to cause an operated arm to resume its normal position in the common plane, substantially as set forth. 3rd. In combination, a series of laterally hinged type arms, arranged in an upwardly inclined plane, and pivoted in juxtaposition on a common shaft, and type secured to their free ends, an impression platen or roller located in front of the type arms, directing guides located in front of the type arms, to cause the type to strike in position or impression, and a stop bar provided with guide pins between which the type arms are held in one plane, and from which the type arms are entirely clear before they come in contact with the directing guides, substantially as set forth. 4th. In combination, a series of arms carrying type at their ends, having a common axis of rotation, and provided with hinge joints between their axis and their ends, a series of bars provided with keys or finger pieces, and held on one shaft, and links connecting the rear ends of the key bars to the pivoted parts of the type arms, substantially as set forth. 5th. In combination, a series of arms carrying type at their ends, having a common axis of rotation, and provided with hinge joints between their axis and their ends, a series of bars provided with keys or finger pieces and held on one shaft, links connecting the rear ends of the key bars to the pivoted parts of the type arms, and a series of connecting springs for raising and holding the type in normal position, substantially as set forth. 6th. The combination, with a series of type arms pivoted on a common shaft, a number of type secured to their free ends and an impression platen or roller, of movable bearings constructed and operated to move the common shaft on which the type arms are pivoted, so as to cause all the type to strike on one line, substantially as set forth. 7th. In a type writing machine, in combination, a series of arms pivoted on a common horizontal shaft, and provided with type on their free ends, arranged and operated to cause the type to strike face down on the upper exposed surface of the paper, directing guides located in front of the arms inclined downwardly towards the centre with their ends arranged vertically parallel, between which the type arms pass, and an ink roller held in a pivoted frame and located in front of the vertical parallel ends of the directing guides, so as to be struck by a descending type and be moved out of the path of the same, substantially as set forth. 8th. In a type writing machine, in combination, a series of arms pivoted on a common horizontal shaft and provided with type on their free ends, arranged and operated to cause the type to strike face down on the upper exposed surface of the paper, directing guides located in front of the arms inclined downwardly toward the centre, with their ends arranged vertically parallel, between which the type arms pass, an ink roller held in a pivoted frame and located in front of the vertical ends of the directing guides, so as to be struck by a descending type and be moved out of the path of the same, and an arm or rod projecting from the pivoted ink roller frame and extending over the type arm in its path when the ink roller has been moved out of the path of the type, substantially as set forth. 9th. In combination, a series of laterally hinged type arms pivoted on a common shaft, and a number of type secured to their free ends, an impression platen or roller, movable bearings constructed and operated to move the common shaft on which the type arms are pivoted, so as to cause all the type to strike on one line, and an ink roller held in a pivoted frame in the path of the type, said roller being of such a length as to be struck by one type only, substantially as set forth. 10th. In a type-writing machine, the combination, with a platen or paper holding and feeding roller, of a cylindrical paper holder located in front of the platen or roller, pivoted to the roller frame, and held in either of two positions by means of a spring catch in one position, with its free edge in juxtaposition to the roller to guide the paper thereto, and in the other position with its free edge away from the roller, substantially as set forth. 11th. In a type-writing machine, the combination, with a platen or paper holding and feeding roller, of a cylindrical paper receiver located behind the roller, and a set of small rollers having spring bearings on or attached to the free edge of the paper receiver, and resting on the holding and feeding roller with a yielding pressure, substantially as set forth. 12th. In a type-writing machine, the combination, with a platen or paper holding and feeding roller, of a cylindrical paper receiver located behind the roller, and a set of small rollers having spring bearings on or attached to the free edge of the paper receiver, and resting on the holding and feeding roller with a yielding pressure, a roller located in the cylindrical paper receiver connected to and receiving motion from the holding and feeding roller, and rollers having bearings in the upper part of the cylindrical paper receiver in contact with the interior roller, substantially as set forth. 13th. The combination, with the space key of a ratchet wheel, of the carriage feed mechanism, the lever carrying an actuating and a detent pawl, and the frame for lifting said lever, the whole constructed and arranged substantially as described, so that when the space key is depressed to its limit, the carriage will be released and freely movable in either direction. 14th. In combination, a laterally moving paper holding and controlling frame, a shaft at right angles thereto, a pinion on the shaft working in a rack on the laterally moving frame, a ratchet wheel on the shaft, a pawl pivoted on a lever and actuating the ratchet wheel to cause the frame to feed forward, a ratchet wheel, with its teeth reversed, and a projection of the lever catching therein to limit the movement of the frame, and means for imparting an up and down movement to the lever, substantially as set forth.

No. 27,324. Rope or Cable Coupling.

(*Machine à épisser lezordage ou les cables.*)

Michael Garland, Bay City, Mich., U. S., 2nd August, 1887; 5 years.

Claim.—1st. In combination with the suitably divided or split end portions of the rope or cable, clamping bars or plates which have clamping surfaces arranged transversely to the direction of length of the rope or cable, and operating to grip the divided end portions of the latter, all substantially as set forth. 2nd. In combination with a rope or cable, a clamping device for splicing or connecting the ends thereof, formed or provided, as described, with projecting sprocket-like portions located at each side of the rope or cable, and arranged to engage with the toothed flanges of any rope wheel over which said cable may be run, for the purposes set forth.

No. 27,325, Machinery for Drying Pile and other Woven and Felted Fabrics. (*Appareil pour sécher les étoffes à poile, et autres étoffes tissées et feutrées.*)

Henry Lister, Huddersfield, Eng., 2nd August, 1887; 5 years.

Claim.—1st. In combination with a machine for drying pile and other woven or felted fabrics, consisting of two discs, such as A and B, of the plate wheel J, rotated as described, free to move on spindle K, and rotating disc S at constantly varying speed by means of projections *m* set in spiral curve on face of T, and intermeshing with J, all as and for the purposes set forth. 2nd. In combination with a machine for drying pile and other woven and felted fabrics, consisting of two disks, A and B, and means for varying velocity of said discs to correspond with varying diameter of fabric being wound on said discs of the lever Q and bell crank P connected together, operated by plate wheel J and operating sliding bar Q and its connections, as and for the purposes set forth. 3rd. In combination with the discs A and B, of the additional spiral grooves / cut therein for receiving the runners *g*, and studs *j*, for the purposes substantially as herein described. 4th. In combination with a drying machine, having discs A and B, of the cylinder or roller H, provided with right and left-handed spirals on its surface, for the purpose of stretching and removing the creases from the fabric. 5th. In drying machines, such as herein shown, the use of the notched or serrated bars or laths G, for the purpose of stretching and removing the creases from the fabric. 6th. In combination with the discs A and B, the employment of the toothed straps *p*, for holding the selvages of the fabric as it enters the machine. 7th. In combination with the discs A and B, the use of the rack U, and pawl *w* for removing the pressure off the nut V, substantially as described.

No. 27,326. Brake for Trucks, Waggons, or Vehicles. (*Freins pour wagons ou voitures.*)

John B. Crosby, Bonshaw, P.E.I., 2nd August, 1887; 5 years.

Claim.—1st. The combination of the yoke C, the rod A, the pole B, the double tree E with buffers, the slit or socket in the pole, the double tree bolt and the front wheels H, H, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the buffers, with the clasp and slit, and the double tree E and the front wheels H, H, substantially as and for the purpose hereinbefore set forth.

No. 27,327. Transmitter for Electrical Type Writers. (*Appareil transmetteur pour graphotypes électriques.*)

James F. McLaughlin, Philadelphia, Penn., U.S., 2nd August, 1887; 5 years.

Claim.—1st. The combination of two instruments, respectively located each at an extremity of a line circuit, as shown, and consisting each essentially of a series of circuit-closing keys, having elongated stems which engage and intercept the rotation of a revolving contact brush arm when a key is depressed, a series of normally charged retracting springs, corresponding in number and relative situation to the series of keys, and adapted to make contact with a series of vertically adjustable segments, a series of segments arranged to be normally in or out of contact with the retracting springs, and corresponding in number and relative situation thereto, a central shaft revolving in unison with the shaft of the other instrument, and provided respectively with an exterior indicating arm, an interior brush-arm normally in contact with the segments, and an armature disk mounted rigidly upon the said central shaft, and projecting in the centre of the magnetic field of an electro-magnet, an electro-magnet in circuit with the source of electricity at the other end of the line, and a suitable device, as shown, for electrically connecting the rotating shaft with the line circuit, the whole being arranged to operate, as set forth, with two sources of electricity, respectively at each end of the line, the switches and the electrical connections, whereby the successive and separate electric pulsations transmitted from either extremity of the line-circuit are received and indicated at the other extremity, as specified. 2nd. The combination of a suitable source of electricity, the retracting springs, the wires connecting each of said springs with the switch, a three-point switch having its lever in circuit with the battery, and one of its points in circuit with all of the retracting springs, and the circuit-closing keys provided each with an elongated stem, as specified. 3rd. The combination of the series of keys, each having inwardly-projecting stem, provided with collar and extension-rod, the retracting springs having the forward ends provided with eyes for the reception of the extension-rods of the keys, and the contact-springs arranged below said retracting springs corresponding in number and relative situation thereto, as set forth. 4th. The combination of the keys, retracting springs and contact springs, arranged and constructed, as described, with the system of circularly-arranged insulated segments, corresponding in number to the keys, and each having one of the contact springs secured thereto, as set forth. 5th. The combination of the series of insulated segments, arranged as shown, and their superincumbent springs, with the vertically adjustable cross-bar, whereby the segments and contact springs may be elevated, and said contact springs placed normally in contact with the retracting springs, substantially as set forth. 6th. The combination of the centrally-separable cylindrical inclosing case, having the slots and pivoted catches on the sides thereof, as shown, the vertically adjustable cross-bar supporting the series of segments, provided with end lugs, which project through said slots, and the inner circular flange formed integral with the casing, and supporting the cross-bar supporting the said series of magnets in its normal position, as described. 7th. The combination of the circuit-closing keys, the retracting springs, and the vertically-adjustable contact springs and insulated segments, with the central revolving shaft provided respectively with external indicating arm and the internal contact-brush arm, both adjustably mounted on said central shaft, substan-

tially as described. 8th. The combination of the vertically-adjustable segments and contact springs, with the central revolving shaft, and the rotating brush-arm mounted thereon and adapted to rotate in contact with said segments, substantially as set forth. 9th. The combination of the series of keys mounted in the removable lid of the cylindrical casing, and having the stems, as shown, provided with collars and extension rods, piercing the ends of the retracting springs, and of sufficient length to intercept the rotation of inner contact-brush arm, when a key is depressed with the retracting springs, the vertically-adjustable insulated segments carrying contact springs, and the inner brush-arm mounted rigidly on the central rotating shaft, substantially as shown and described. 10th. The combination of the vertically-adjustable segments, and their respective superincumbent springs, with the retracting springs, the series of keys having stems and collars, as shown, and provided with extension rods piercing ends of retracting springs, and of sufficient length to intercept the rotation of the inner brush-arm, when a key is depressed, the external indicating arm mounted adjustably in upper end of central shaft, and the inner rotating contact brush-arm, substantially as shown and set forth. 11th. The combination of the series of circuit-closing keys, suitably mounted in movable lid or top of cylindrical casing, and having the stems and collars, as shown, and provided with extension rods piercing the ends of retracting springs, and of sufficient length to intercept the rotation of inner rotating brush arm adjustably mounted on the central revolving shaft, as set forth. 12th. The means, such as described, for rendering the segments and their superincumbent springs vertically-adjustable, which consists of the cross-bar supporting said segments, provided with end lugs which project through slots of the required size in sides of casing, and the pivoted thumb-catches for holding said lugs at the upper end of said slots, as described. 13th. The combination of the revolving central shaft, the casing, the keys having elongated stems, provided with collars, as shown, the external indicating arm and the inner rotating contact brush-arm, as set forth. 14th. The combination of the central rotating shaft, with the armature disk rigidly keyed thereon, and revolving centrally in its rotation between the poles of a magnet, the electro-magnet secured upon the diaphragm of the casing, and having the poles thereof arranged in line and in proximity to each other, and a suitable source of electricity and electrical connections for energizing and de-energizing said magnet, as set forth. 15th. The contact segments, such as shown and described, each formed of suitable conducting material insulated from the adjacent segments, and having an inclined contact surface, as shown, said segments being arranged relatively with reference to their respective keys, in circular order upon a vertically adjustable flange, in combination with the vertically-adjustable supporting cross-bar, the retracting springs, the circuit-closing keys and the circuit, as shown and described. 16th. The combination of the circuit-closing keys and their respective retracting and contact springs, and the vertically-adjustable segments, with a suitable constant battery separately connected with each and every retracting spring, as set forth. 17th. The combination of a constant battery with the wires *a*, *a*, arranged as described, the switched P, P, and the retracting-springs and keys for closing the circuit, as set forth. 18th. The combination of the vertically-adjustable cross-bar, the superincumbent segments and the casing, as described, with the vertical guide-rods, whereby such mechanism is retained in its proper position, as set forth. 19th. The combination of the battery switch, and the wires connecting each retracting-spring with the line from battery with the circuit-closing keys, the retracting and contact spring and the vertically-adjustable segments, as described. 20th. The combination of the vertical rotating shaft, the external indicating-arm, the inner brush-arm and the armature-disk, with the means, such as shown and described, for stopping the rotation of said shaft by the depression of any of the circuit-closing keys of the key-board, with its respective arms at the respective segments, and the key corresponding to the key depressed, and the electro-magnet having poles arranged, as shown and set forth. 21st. The combination of the vertically-adjustable segments, the contact and retracting springs, and the circuit-closing keys with the central revolving shaft, the contact and indicating arms, the armature disk, the electro-magnet having the poles arranged, as shown, the stationary brush-arm fixed to casing and normally in contact with the lower end of central shaft, the line-circuit, the switches, electrical connections and a suitable battery, as set forth. 22nd. The combination of the central vertical revolving shaft, the collars *i*, *i*, and the disk armature *l*, adapted to be attracted by a suitable electro-magnet, having electrical connections, the stationary brush-arm connecting the central shaft with the line, and the line-circuit, whereby said shaft is stopped and released at the desired time, as set forth. 23rd. The combination of the shaft G and arms H₁₁ and G₁₁, with the segments H, H, and keys E, E, the battery and the line circuit, as set forth. 24th. The combination of the keys, each having a stem *g*, collar *g*, and rod *f* of the necessary length, with the arm H₁₁ secured to shaft G and the rotating central shaft, the retracting spring, the vertically-adjustable segments and the circuit, as set forth. 25th. The combination of the battery O₁₁, the switch lever O₁₁, points *o*, *o*, *o*, *o*, and wires *p*, *p*, *p*, *p*, and *a*, *a*, with the retracting springs E₁, and the keys E, E, as shown and described. 26th. The combination of a suitable constant battery, having switch switch-point, switch-lever, and suitable wire connections with retracting springs, with the circuit-closing keys, the retracting springs, contact-springs, insulated segments, contact brush-arm, external indicating arm connecting the central shaft with the line, the central vertical rotating shaft, the stationary brush-arm and the line-circuit, as set forth. 27th. The combination of the vertically adjustable segments, adapted to receive the current communicated by the contact and retracting springs through depressing of the keys of the instrument, with the rotating contact brush-arm, the revolving central shaft, the stationary brush-arm and the line, as set forth. 28th. The combination of the vertically adjustable segments adapted to receive current from retracting springs through their respective contact springs, communicated by the depression of the keys of the instrument with the external indicating arm, the rotary contact brush-arm, the line, the armature disk and the electro-magnet, having poles, arranged as shown and described. 29th. The combination of the electro-magnet J, having poles I, I, and suitable line and

ground connections, with the armature disk I mounted on a central revolving shaft, the central rotating shaft provided with the arm G¹ and the circuit-closing key-board, as set forth. 30th. The combination of the electro-magnet J, having poles I¹, I², arranged as shown, with the disk armature I and shaft G, the arm G¹, the keys E, E¹, the wires J, J¹ and the circuit connections, as set forth. 31st. The combination of the electro-magnet J, having poles I¹, I², as shown, the disk armature I, the shaft G, the arms G¹ and H¹ and the circuit and connections, as set forth. 32nd. The combination of the electro-magnet J, having the poles I¹, I², as shown, the disk armature I, the shaft G, carrying said disk armature, the arms G¹ and H¹, the vertically-adjustable segments, the contact springs, the retracting springs, the keys E, E¹, the wires a¹, a², the circuit connections therefor and the switch, as set forth. 33rd. The combination of the shaft G, carrying disk I and arms G¹ and H¹ rigidly keyed thereon, with a suitable gearing mounted upon the shaft of a motor for rotating said shaft, as set forth.

No. 27,328. Oil Hole. (*Boite à graisse.*)

Ephraim F. Herrington, West Hossick, N. Y., U. S., 2nd August, 1887; 5 years.

Claim.—1st. The combination, with the journal box or bearing having the oil hole or receptacle, of a laterally moving cover for the perforation or receptacle, and a spring for holding said cover in place over the same, substantially as described. 2nd. The combination of the journal box or bearing, provided with the oil hole or receptacle, the laterally moving cover to said receptacle, a guide or ways in which said cover moves, and the spring for automatically retracting said cover, after it has been moved, for oiling the journal, substantially as described. 3rd. The combination, with the journal-box or bearing, having the oil hole or receptacle, of the seat c, provided with the guide c¹, the cover D pivoted to said seat and adapted to move on said guide, and the spring f interposed between said cover and seat or journal-box for holding the cover in place over the oil receptacle, substantially as described. 4th. The combination, with the journal box or bearing, of the raised and perforated seat, the sliding oil hole cover mounted and moving in ways on said seat, and the spring interposed between said seat and cover, substantially as and for the purpose described.

No. 27,329. Bill of Exchange.

(*Lettre de change.*)

Albert Goldstein, Columbus, Ohio, U. S., 2nd August, 1887; 5 years.

Claim.—1st. A form, or assemblage of forms, either separate, detachable, or upon one sheet, constituting a bill of exchange, substantially as described. 2nd. A form or assemblage of forms, either separate, detachable, or upon one sheet, adapted to be used substantially as and for the purpose specified. 3rd. A bill of exchange, or form to be used as such, arranged in five divisions or parts, and adapted to be used separately, as and in the manner specified. 4th. The combination of the various parts, A, B, C, D and E, when used substantially as described.

No. 27,330. Knitting Machine.

(*Machine à tricot.*)

Strangway & Co., (assignee of Henry Kitson), Toronto, Ont., 2nd August, 1887; 5 years.

Claim.—1st. The combination of the levers B, each pivoted at b to the cam-ring, the stitch regulating cam C, adapted to move vertically on the pin d in the slot c, and also adapted to move vertically in the slot b¹, formed in the plate h, and the spring e, the stitch regulator D, having shaft g with bearings in the bracket o and side of cam-ring A, and the eccentric cam g rigidly attached to said shaft and adapted to give a downward motion to the free ends of said lever arms B, when the said eccentric cam g is caused to revolve, substantially as specified. 2nd. The combination of the levers B, each pivoted at one end to the cam-ring, their other ends being notched so as to overlap one another, the stitch-regulator D having a shaft g rigidly attached thereto and working in suitable bearings, and the eccentric cam g rigidly attached to said shaft and adapted to give a downward motion to the free ends of said lever-arms B, when the said eccentric cam g is caused to revolve, the said lever arms bearing on the stitch-regulating cams C, which are adapted to move vertically along with the springs e in the slots c, and also adapted to move vertically in the slots b¹, formed in the plates h, to which the main drawing cams F are attached, and the spring dog f adapted to engage with notches in the periphery of the stitch-regulator D, substantially as described and for the purpose specified. 3rd. In a knitting machine, the combination of the stitch-regulating cams C, adapted to move vertically in the slots c and b¹ when actuated by the lever-arms B, and the springs e, the covering cams E, E¹ and the centre cam G, the wing cams I and the main drawing cams F attached to the slotted plates h, which are placed in grooves formed in the side of the cam cylinder, and are upheld by the springs i, together with the back cam a, substantially as described and for the purpose specified. 4th. The combination of the stitch regulator D, notched in a portion of its periphery, the bracket o rigidly attached to the rim of the cam-ring, the eccentric cam g and the shaft g¹, which has bearings in the bracket o, the spring p placed in a recess formed in the bracket o and bearing against the short arm of the spring dog f, which is pivoted at r in a slotted bearing-piece s formed on the lower portion of the bracket o, the outer end of said spring dog f being adapted to engage with the notches formed on the periphery of said stitch regulator D, to lock the same, substantially as described and for the purpose specified. 5th. The combination of the bracket H and the adjusting screws K, binding the feet of the bracket to the rim of the cam ring, the adjusting screws L placed near the shoulders of said bracket, the ends of said screws L bearing against the side of the cam ring, the slot w and the thumb-screw R adjustable vertically in said slot, and which binds the bevelled shield M to the bracket H, substantially as described and for the purpose specified. 6th. The combination of the bevelled shield M, having a hole O and slit 4, and a leg Q formed thereon, the guide N and the thumb-screw R adjust-

able vertically in a slot formed in the bracket H, which is attached to the rim of the cam-ring, substantially as described and for the purpose specified. 7th. In a knitting machine, a stitch-regulator cam adapted to move vertically, and operated by mechanism for raising and lowering said cam, substantially as described. 8th. In a knitting machine, a drawing cam or cams adapted to suspend the drawing of yarn by a needle, until the next preceding needle has drawn its yarn and completed its stitch, substantially as described and specified.

No. 27,331. Car-Coupling. (*Attelage de Chars.*)

Peary Thrush, Danier W. Avra, David Baker and John Baker, West Alexandria, Ohio, U. S., 2nd August, 1887; 5 years.

Claim.—1st. The combination, with the draw head A formed with a chamber B in its under side, sheaves C journaled in the chamber, a vertical shaft D journaled vertically in the draw head, a pulley or drum E mounted on the shaft within the chamber, and a rope F secured to the drum and formed into two branches, of the jaws H, pivoted in recesses between the lower and upper portions of the draw head, and provided with rearwardly-extending arms h, to which the two ends of the rope F are attached, and forwardly extending arms h¹, which extend at an angle to the arms h, and springs N bearing against the inner side of the arms h, the pins I which serve as pivots for the jaws also providing connecting means for the upper and lower portions of the jaws, as and for the purposes set forth.

No. 27,332. Manufacture of Coal Gas.

(*Fabrication du Gaz de Houille.*)

William P. Lane, Germantown, Penn., U. S., 4th August, 1887; 5 years.

Claim.—The process of manufacturing illuminating-gas, which consists in distilling a suitable gas stock, such as the ordinary coal, in the usual manner, introducing water or wet steam to such gas-stock while undergoing distillation, and passing the commingled gas and vapors evolved to a highly-heated retort, either empty or containing a refractory substance incapable of union chemically with any of the constituents of the evolved mass from the distilling-retort, and there converting the commingled gas and vapors into a fixed and permanent gas, substantially as described.

No. 27,333. Upper of Boot and Shoe.

(*Empingue de Chaussure.*)

Thomas Tobin, Sorel, Que., 4th August, 1887; 5 years.

Claim.—As a new article of manufacture, a boot upper A having the angular configuration a, b, c, straight cut d, e, in combination with the straight part a¹, b, the part d¹ e provided with a stiffening tongue g located as shown, the whole constructed and arranged substantially as and for the purposes set forth.

No. 27,334. Automatic Electric Alarm Railway Signal. (*Signal électrique de chemin de fer.*)

William J. Mackle, Toronto Ont., 4th August, 1887; 5 years.

Claim.—1st. An automatic electric alarm railway signal, the rods bars or wires A and A₂, the wheels C and the battery B, in combination with the wires D and the alarm bell F, substantially as described and for the purpose specified. 2nd. In a railway signal, the rods bars or wires A, A₂ in combination with a switch bar forming electric connection between A and A₂, substantially as described and for the purpose specified.

No. 27,335. Manufacture of Fuel and Illuminating Gas. (*Fabrication de Gaz Combustible et d'éclairage.*)

James Bujac, Catonsville, Md., U. S., 4th August, 1887; 5 years.

Claim.—1st. In a gas making apparatus, the combination of the tubular boiler, a flue boiler surrounded by a jacket provided with a plurality of flues, means for conveying the products of combustion through both boilers and into the flue of the jacket, substantially as described. 2nd. In a gas making apparatus, the combination of a tubular boiler, a flue boiler having a jacket provided with a plurality of flues, passages for the products of combustion through both boilers to the flues in the jacket, and air blast pipes for supplying air to support combustion in the jacket flues, substantially as set forth. 3rd. In a gas making apparatus, the combination of a tubular boiler, a flue boiler, a jacket for the latter having a plurality of flues, air blasts, pipes for supplying air to support combustion, and valves or dampers to regulate the passage of the products of combustion, as specified. 4th. In a gas apparatus, the combination of a tubular boiler, a flue boiler, a jacket having flues and pipes for taking steam from both boilers, and conducting it into one of the jacket flues, and thence through such flue to the incandescent fuel in the fire box of the tubular boiler, as specified. 5th. In a gas apparatus, the combination of tubular boiler, flue boiler, jacket having a plurality of flues, and means for regulating the passage of the products of combustion to the flues in the jacket whereby the heat in the flues may be regulated in one of them, as set forth. 6th. In a gas apparatus, the combination of tubular and flue boilers, a jacket for the latter having a plurality of flues, a liquid hydrocarbon conduct to one of the jacket flues where a hydrocarbon is gasified and mixed with the other gas, whence it passes through a proper conduct to the hydraulic main, as set forth.

No. 27,336. Manufacture of Cooking Stoves Ovens. (*Fabrication des Fourneaux de Cuisine.*)

Thomas Jones and William H. McCormack, Peterborough, Ont., 4th August, 1887; 5 years.

Claim.—The perforated leg bottom *f, f*, the hollow fine strip *I, I*, the perforated oven bottom *e, e*, and the openings *b, b* into the smoke flue *L*, with the dampers *a, a*, all in combination as a means of introducing and passing warm air through the oven, substantially as described.

No. 27,337. Car-Coupling. (*Attelage de Chars.*)

Richard J. Edwards, Galeva, Ill., U.S., 4th August, 1887; 5 years.

Claim.—1st. The combination, with the draw head of a car coupler, of the upper and lower pins working in the vertical apertures of said heads; the pivoted dog adapted to engage the lower end of the upper pin, and hold it in position for engaging the link when the same strikes the dog and throw it backward, substantially as specified. 2nd. The combination, with the draw head of the upper and lower pins, the lever to which the latter is connected, the crank lever for operating the same, and the engaging and disengaging pawl or dog, whereby the coupling pins are adjusted, substantially as specified. 3rd. The combination, with the draw head and its lower pin, of the lever by which it is actuated, and the chains whereby the said lever and pin are held in proper relation to the draw head in case of sagging, substantially as specified. 4th. In combination with the upper and lower pins, and the draw head, of the dog or lever having a lug on its forward end, the lower pin having its upper end recessed to engage the lug and the upper coupling pin adapted to operate in conjunction with each other, substantially as specified.

No. 27,338. Signal Lantern. (*Lanterne à Signal.*)

Frank P. Copper and Alvin Bair, Tiffin, Ohio, U.S., 4th August, 1887; 5 years.

Claim.—1st. The combination in a signal light of a base and an oil holder, a spring catch centrally arranged on the under side of the base, colored glass slide exterior to the frame, a hinged bail secured to the slide slots in the base for the passage of the bail, and a catch, as *N*, whereby the said bail may be engaged by one of the catches when the colored slide is in an elevated and a depressed position, substantially as specified. 2nd. The combination in a lantern of external fixed tubes having vertical guides, and the oil holder also having guides, the colored glass slide tubes adapted to move in said guides, the hinged bails secured to the said slides, the slots for the passage of the bail, and a catch on the under side of the slide for holding the slide in their extended position, substantially as specified. 3rd. The combination in a lantern of the oil holder, the base having the catches *N, U, V* on its under side as described, the external fixed tube having diametrical vertical guides, the vertical guides in the colored glass slides and the hinged arms secured to the slides and the slots for the passage of the said arms, substantially as specified. 4th. In combination, the lamp, the movable signal glass or glasses, means for moving said glass or glasses, and suitable guides for controlling and directing the vertical movement of the same, substantially as described.

No. 27,339. System of Electrical Distributing. (*Système de Distribution de l'Électricité.*)

James F. McElroy, Lansing, Mich., U.S., 4th August, 1887; 5 years.

Claim.—1st. The combination of a local lamp circuit having one of its terminals at the local station, and the other at a more distant station of a positive and a negative service conductor for each terminal of said circuit, and of a manual switch at each terminal of the lamp circuit, arranged to electrically connect said terminal with either the positive or negative service conductor, substantially as described. 2nd. The combination, with a local lamp circuit having its terminals at two different stations, of a positive and a negative service conductor therefor at each station, and of a manual switch at each station, each arranged to connect the lamp circuit either with the positive or with the negative service conductor, substantially as described. 3rd. The combination, with an electric circuit having a translating device in multiple arc with the main conductors, of a positive and a negative service conductor for each terminal of said circuit, and of switches between each terminal of said circuit, and the terminals of its respective conductors, substantially as described. 4th. In an electrical switch having fixed cylindrical contacts, and a movable contact carried by a spindle, a lost motion or play provided between said spindle and its actuating handle or key, substantially as described. 5th. In an electric switch having fixed cylindrical contacts, and a movable contact carried by a spindle, an actuating key or handle secured to said spindle, and having a limited rotary play thereon, and a spring actuated impelling device arranged to cause said spindle to turn ahead of its motion at a desired point in its operation, substantially as described. 6th. In an electric switch having fixed cylindrical contacts, and a movable contact carried by a spindle, an actuating key or handle secured to said spindle, and having a limited rotary play thereon, a ratchet secured to the spindle and provided with cogs and flat faces, and a spring click operating in connection therewith to impel the spindle through the medium of the ratchet, substantially as described. 7th. In an electric switch, the combination, with the fixed cylindrical contacts, of a spindle, a spring carrying the movable contact, a key secured to the spindle and having a limited rotary play thereon, a ratchet having cogs and flat faces, and a spring click operating in connection with said ratchet to form an impelling and locking device for said ratchet to form an impelling and locking device for said spindle, substantially as described. 8th. In an electric switch having fixed cylindrical contacts, a movable contact carried by a spindle, and a spring actuated impelling device on said spindle, a key or handle secured to said spindle and having a limited rotary motion thereon, and a spindle and a spring between said spindle and key arranged to take up such rotary play, substantially as described. 9th. In an electric switch, the combination of the fixed cylindrical contacts *b, b*, *b1, b1*, the spindle *d*, the movable contact *f* carried by said spindle, the key or handle *h* having a limited rotary play on said spindle, the ratchet *p* secured to the spindle and having cogs *p* and flat faces *s* and the spring click *m*, all arranged to operate substantially as described.

cribed. 10th. In an electric switch, the combination of the fixed contacts *b, b1, b1*, the spindle *d*, the movable spring contact *f*, the key or handle *h* having a limited rotary play on the spindle, the spring *k* arranged to take up said play, the ratchet *p* having cogs *r* and flat faces *s* and the spring click *m*, the parts being constructed arranged and operating substantially in the manner and for the purposes described.

No. 27,340. Road Cart. (*Déaobligeante*)

John Anderson, Colon, Mich., U.S., 4th August, 1887; 5 years.

Claim.—In a wheel vehicle, the combination with the shaft *C* and cross-bar *D*, of the seat supports *E* hinged at their forward ends to said shafts, the semi-elliptic springs *G* arranged beneath said seat supports, with their centers on said cross bar, the springs *H* interposed between said springs *G* and seat supports over said cross bar, and the bolts *a* passed through said springs and cross-bar, substantially as shown and described.

No. 27,341. Art of Automatic Telegraphy and Apparatus Therefor. (*Art de télégraphie automatique et appareil pour cet objet.*)

Jackson Rae and James C. Simpson (assignees of William A. Leggo), Montreal, Que., 4th August, 1887; 5 years.

Claim.—1st. In an automatic telegraphic apparatus, the pen in constant and unbroken contact with the cylinder while marking the message line, as and for the purposes set forth. 2nd. The combination, in an automatic telegraphic apparatus, of the pen, electro-magnet and armature moving same in sidewise direction, all as herein described. 3rd. In an automatic telegraph apparatus, the pen slitted vertically and longitudinally along the bottom, as and for the purposes described. 4th. In an automatic telegraph system, insulating ink composed of coloured commercial mucilage or gum arabic. 5th. In an automatic telegraph system, a message marked on the cylinder for transmission, and consisting of a continuous line made up of two interrupted spirals, connected by oblique lines, as herein described. 6th. In an automatic telegraph apparatus, the screw for moving the pen and stylus tablets, arranged to move synchronously with the cylinder. 7th. In an automatic telegraph apparatus, the combination, with the recording and transmitting cylinder connected to earth, of two styluses, each connected to line through a battery of different polarity, all as and for the purposes herein set forth. 8th. In an automatic telegraph system, the preparation of messages for retransmission by means of line batteries of differing polarity, operating the pen mechanism at the intermediate station, all as herein set forth. 9th. In an automatic telegraph system, the transmission through a relay of messages, for re-preparation at an intermediate station. 10th. In automatic telegraphy, the transmission of messages by induced currents derived from an induction or Ruhmkorff coil. 11th. A key-board, composed of keys, each having a disc bearing on its periphery a letter or other sign, and carried in and depressed by the key, so as to bring its surface in contact with a rotating metal roller, and thereby establish a battery current either through local or line circuit, all as herein set forth.

No. 27,342. Telegraphic Alphabet.

(*Alphabet télégraphique.*)

Jackson Rae and James C. Simpson (assignees of William A. Leggo), Montreal, Que., 4th August, 1887; 5 years.

Claim.—1st. A telegraphic alphabet or code, composed of combinations of marks of like significance. 2nd. A telegraphic alphabet or code, in which the letters are divided up into groups, each denoted by a special sign, all as herein set forth. 3rd. A telegraphic alphabet or code, in which the letters are divided up into groups, each group being known by a special sign, and each letter in each group by a special sign used in notation, in combination with the sign of the group, all as herein set forth.

No. 27,343. Electric Arc Lamp.

(*Lampe électrique à arc.*)

The Royal Electric Company (assignee of Frederick Thomson), Montreal, Que., 4th August, 1887; 5 years.

Claim.—1st. The combination, in a duplex electric arc lamp, of a central rod or tube, and carrying arm, on which lower carbon holders are mounted, and globe holder, substantially as herein described. 2nd. In a duplex electric arc lamp, the combination of the central rod, sleeve sliding on same and carried on rod bent at top half round central rod, globe holder, means for securing it to sliding sleeve, and locking device for holding the sleeve and globe-holder in position on the central rod, all substantially as herein described and for the purposes set forth. 3rd. In an electric arc lamp, the combination, with the binding posts, of conical hoods mounted on same, and insulating support under such hoods. 4th. In a duplex electric arc lamp, the combination, with the clutches *F, F1, tocs F2, F3*, springs *f, f1*, and stops *G, G1*, of arms *S, S1* secured to lever-carrying armatures, and operated by electro-magnets, as and for the purposes described. 5th. The combination, with the clutches *F, F1* on same plane, tocs *F2, F3*, springs *f, f1*, of the stops *G, G1*, slotted and secured to the frame at different heights, substantially as and for the purposes set forth. 6th. In a duplex electric arc lamp, the combination, with the regulating mechanism, of a resistance coil and a contact piece-making circuit through carbon rod, and cutting-out portion of such resistance, as and for the purpose described. 7th. In combination, with the feed mechanism of an electric arc lamp, the German silver coil *M* connected with negative terminal, and with contact piece *Q* placed in a circuit with contact piece *O*, by key *R*, operated through arm *s* when lamp circuit is open, as and for the purposes described. 8th. In an electric arc lamp, the insulated switch *T*, carrying on insulating disc *n*, conducting band *U* turned in and out of contact with *P1* and *N1*. 9th. In an electric arc lamp, the combina-

tion. with the insulated switch T, of cam W and spring X, all arranged and operating as herein set forth. 10th. In an electric arc lamp, the telescopic hood B, as and for the purposes described.

No. 27,344. Electrical Weighing Scale.

(*Pont à bascule électrique.*)

William R. Smith (co-inventor with Albert L. Washburn), New York, N. Y., U.S., 4th August, 1887; 5 years.

Claim.—1st. The combination of a weighing scale, a vertically-sliding independent rack, an indicator actuated by the rack, and connecting mechanism between the scales and rack, whereby the movement of the rack is controlled. 2nd. The combination of a weighing scale, an independent rack, an indicator actuated by the rack-connecting mechanism between the scales and rack, whereby the movement of the rack is controlled, and tripping mechanism for releasing the rack. 3rd. The combination of a weighing scale, an independent rack, an indicator actuated by the rack, connecting mechanism between the scales and rack, tripping mechanism for releasing the rack, and stop mechanism, substantially for the purpose set forth. 4th. The combination of a weighing scale, a moving frame, a vertically sliding independent rack, and indicating mechanism actuated thereby. 5th. The combination of a weighing scale, a moving frame, an independent rack, indicating mechanism actuated thereby, trip mechanism for releasing and stop mechanism for stopping the rack, substantially as set forth. 6th. The combination of a weighing scale, a moving frame indicating mechanism, an independent rack and electrically operated releasing mechanism. 7th. The combination of the chute section, adapted to receive a coin or smaller metallic piece, and having insulated electrical conductors, a weighing machine, having its indicator disconnected from the main portion of the weighing mechanism, a stop on said main portion to limit the movement of the indicator, when released, a latch for securing said indicator at the zero point, and electrical connections between said chute section, substantially as described and for the purpose specified. 8th. The combination of the chute section D and latch, having secured thereto a moving side that projects into the path through the chute far enough to stop a coin of a given size, in combination with the lever *o* pivoted to said chute section, with one end abutting against the outer face of said moving side, and locking it against moving a direction to enlarge the passage through said chute section, substantially as described and for the purpose specified. 9th. The combination of the moving frame *o*, having the shelf or bracket *i*, mechanism for operating said frame, the vertically sliding rack *f* adapted to engage said shelf or bracket *i*, the pointer shaft and pinion *h, g*, and the tripping latch *k* for engaging said rack, substantially as described and for the purpose specified. 10th. The combination of the frame, having the shelf or bracket *i*, mechanism for operating said frame, the vertically sliding rack *f*, pointer shaft and pinion *h, g*, the tripping latch *k* for engaging said rack, the electro-magnet in juxtaposition with said latch, the chute section D and suitable connections with the magnet for supplying the electric circuit, substantially as described and for the purpose specified. 11th. The combination of the chute, section D having the moving side *n*, the lever *o*, the rack *f*, the arm P and the movable frame *b* of the weighing scales, substantially as described and for the purpose specified. 12th. The combination of an indicator, its operating pinion and rack, the main portion of the weighing mechanism disconnected from said rack, a stop secured to and moving with said main portion of the weighing mechanism to limit the movement of the indicator rack when released, and a tripping latch for holding the indicator at zero, when engaged therewith, and for releasing said rack when disengaged therefrom, substantially as described and for the purpose specified. 13th. The combination of a weighing machine, having an indicator, a latch holding the parts that operate the indicator, the electro-magnet in juxtaposition with said latch, the chute section D and suitable connection with the magnet for supplying the electric current, substantially as described and for the purpose specified. 14th. The combination of a weighing machine, a rack indicating mechanism, electrical releasing mechanism, and a coin receiver, whereby the releasing mechanism is actuated. 15th. The combination of a weighing machine, a rack-indicating mechanism, electrical releasing mechanism, a coin receiver, whereby the releasing mechanism is actuated and stop mechanism. 16th. The combination of a weighing machine, indicating mechanism, connecting mechanism between the weighing machine and indicating mechanism, whereby the latter is actuated, electrical releasing mechanism and a coin receiver, whereby the releasing mechanism is actuated. 17th. The combination of a weighing scale, indicating mechanism, a rack connecting mechanism between the rack and indicating mechanism, and means for suspending the rack after the weight on the platform has carried down frame *b*, and connecting mechanism with frame *b*, substantially as described. 18th. The combination of weighing scales, spring and connecting mechanism, a vertically moving rack independent of the motion of the weighing spring, connecting mechanism with the rack and indicating mechanism, substantially as set forth. 19th. The combination of weighing scales, indicating mechanism, connecting mechanism between the weighing machine and the indicating mechanism, connecting mechanism between the weighing machine and the indicating mechanism, whereby the latter is actuated, retaining mechanism, electrical releasing mechanism, and a coin receiver, whereby the releasing mechanism is actuated, substantially as described and hereinbefore set forth.

No. 27,345. Machine for Producing Type Bars. (*Machine à faire les barres de caractères.*)

The National Typographic Company of West Virginia (assignees of Ottmar Mergenthaler, Baltimore, Md.), U.S., 4th August, 1887; 5 years.

Claim.—1st. In a machine for forming type-bars or matrices for type-surfaces, a melting pot or mould, a series of matrices composing mechanism, and means, substantially as described, whereby the matrices assembled for one line may be maintained in position at

an intermediate point, separated from those before and after them. 2nd. In a machine for producing type-bars or matrices, the composing fingers, a series of matrices or dies, finger-keys, and mechanism, substantially as described, actuated by finger-keys for delivering the matrices to the composing mechanism. 3rd. In combination, with a continuously-operating composing mechanism, and a series of matrices or dies, rails or guides, to receive successive lines of matrices, and means, substantially as described, whereby one line may be advanced upon said guides away from those following after, thus permitting the separate groups or lines of matrices to be kept distinct from each other. 4th. In a machine for forming type-bars, a series of matrices having letters or characters in positive form therein, and mechanism, substantially as described, for assembling said matrices in line with their characters in view of the operator, whereby he is enabled to inspect the line previous to its delivery to subsequently acting mechanism, to the end that errors therein may be corrected. 5th. The matrix, formed with the suspending shoulders *b*, and reduced in width above the same, to produce the shoulders *c* and *d*. 6th. The matrix, provided with the suspending shoulders *b*, upper shoulders *c* and an under-cut notch in the upper end. 7th. The matrix plate, provided with sustaining or suspending shoulders, and with an intaglio character in one of its vertical edges. 8th. The matrix, provided with suspending shoulders at its upper end, and with a notch or shoulder *f* in the lower end, substantially as and for the purpose described. 9th. The series of matrix plates, provided with sustaining shoulders *b* of uniform size, and with upper shoulders *c, c', d, d'*, differing in the extent of their separation in matrices representing different characters. 10th. In a mechanism for assembling and distributing matrices, a series of upright magazine tubes grouped closely together in line at their lower ends, but separated at their upper ends, substantially as and for the purposes described. 11th. In a magazine for matrices, the combination of the two vertical plates, each provided with grooves arranged in pairs, brought together at the upper and lower ends, but separated at intermediate points, with intermediate division-plates seated therein, whereby two partitions are permitted between each matrix-tube or passage, and the next, and the tubes separated toward their upper ends. 12th. The magazine tubes, in combination with automatic periodically-actuated detents, common to the series of tubes, whereby the matrices are released, so that they may escape when free from resistance thereunder. 13th. The magazine tubes and the automatic periodically-actuated dogs or detents to release the matrices therefrom, in combination with finger-keys and escapement keys actuated by the finger-keys, and provided with dogs or detents to receive the matrices from the magazine and carry them positively downward. 14th. In combination, with a magazine to hold the matrices, one upon another, detents or dogs to engage the bottom matrix and retain the same in the magazine, and a vertically movable key or receiver located beneath the mouth of the magazine, and provided with automatic dogs or detents to receive and hold the matrix as it falls from the magazine, and then discharge the same downward as the key descends. 15th. The magazine to hold the matrices one above another, and the fixed rails to sustain the matrices as they are discharged from the magazine, in combination with dogs to hold the matrices in the magazine and the vertically-movable escapement keys C, provided with automatic means to receive the matrices and transfer them positively one at a time to the rails. 16th. In a mechanism for assembling matrices, the stationary parallel rails to sustain the matrices, and the endless belt provided with fingers to advance the matrices successively to one end of the rails. 17th. In combination, with the matrix-sustaining rails, the endless belt provided with yielding spring-supported fingers to advance the matrices. 18th. The combination, substantially as described and shown, of the magazine tubes, the periodically-actuated dogs or detents to retain the matrices therein, the escapement keys to transfer the matrices to the assembling mechanism, and the automatic device to prevent the descent of the keys during regular intervals, and to hold down in the meantime those keys which have been already depressed. 19th. In combination with the escapement keys to transfer the matrices, the automatic rising and falling bar to lift the keys to their normal positions. 20th. In combination with the travelling assembling devices, the escapement-keys to deliver the matrices thereto, and the springs to sustain the keys normally in an elevated position, whereby collision between the descending and the laterally-moving matrices is prevented. 21st. In combination with the matrix-sustaining rails, and the conveying or assembling belt, the rotary arms I to advance the matrices one at a time as they are presented by the belt. 22nd. In combination with the matrix-sustaining rails, the pawls and the sliding support for the pawls, whereby they may be moved lengthwise of the rails to advance the assembled matrices. 23rd. In combination with horizontal matrix-supports, and a carrier to advance the matrices thereover, the constantly rotating arms to advance the matrices, and the pawls to engage the matrices as they are delivered thereto by the arms. 24th. In combination with horizontal rails or supports whereon the matrices are advanced and assembled in line, a series of independent space-bars and overhead devices, substantially as described, for dropping said bars one at a time into the accumulating line of matrices. 25th. The stationary rails D adapted to sustain the matrices, in combination with the elevated rails N adapted to sustain the space-bars in position to descend therefrom to the lower rails, whereby the matrices are permitted to pass beneath the space-bars and the latter permitted to descend to the stationary rails between the matrices. 26th. In combination with the space-bar supports N, the vertically-reciprocating slide adapted to engage the space-bars and transfer them one at a time to the line of assembled matrices. 27th. In combination with the space-bars, their sustaining rails and the slid *m*, the spring to depress the slide and the cam to elevate the same. 28th. The slide *m* to deliver the space-bars, its depressing-spring, its elevating cam and the detent-lever *b* to prevent the descent of the slide, in combination with the roller, the slide thereon to trip the detent-lever, and the slide-adjusting device connected with the space-key whereby the depression of the key causes the slide to trip the detent and permit the slide *m* to add a space-bar to the line of matrices. 29th. In combination with the matrices and their sustaining-rails, the clamp to act on the edges of the aligned matrices, and the two jaws movable therewith and also movable to

and from each other, whereby the matrices may be confined against each other and against the mould. 30th. In combination with the matrices and a support to sustain them in line when assembled or composed, two clamping jaws movable to and from each other to act endwise on the line of matrices, and a support for said jaws movable at right angles to the line, whereby the jaws may be moved back out of the path of the matrices to admit of their being moved into and out of position. 31st. In combination with the matrices and a support therefor, the clamp O, the sliding jaws *a* and the screw *d*. 32nd. In combination with the matrices, and devices, substantially as described, to sustain the same in line, the rotary mould movable to and from the matrices, and the melting-pot movable to and from the mould. 33rd. The rotary mould, the series of matrices and their supports, and mechanism, substantially as described, for filling the mould, in combination with the ejector and operating devices, substantially as described, for presenting the mould to the matrices and the ejector alternately. 34th. In combination with the independent matrices and their supporting-rails, the rotary mould movable to and from the matrices, the melting-pot movable to and from the mould, the clamping devices movable to and from the matrices, and mechanism, substantially as described, for operating said parts, as set forth. 35th. In an organized machine for producing type-bars, and in combination with a mould and a melting-pot which alternately meet and separate a rotary wiper, substantially as described. 36th. In combination with the independent matrices, and supporting-rails for the selected and aligned matrices, the clamp O, the jaws *a* to confine the matrices laterally, the space-bars and the plate P to advance the space-bars simultaneously, whereby the line is expanded or elongated to fill the predetermined space between the jaws *a*. 37th. The reciprocating clamp O having the jaws *a* and plate P both mounted thereon, whereby the jaws are carried into position to confine the matrices at the same time that the plate is placed in position to cause their spreading action. 38th. The movable clamp O, the rotary mould, the reciprocating plate on which the mould-shaft is mounted, and the movable melting-pot, in combination with the single shaft and its cam-wheels for imparting motion to the above-named parts, as described and shown. 39th. In combination with the rails J to sustain the aligned matrices, the sliding clamp O, provided with a lip *c* to engage the rails, substantially as described and shown, whereby the rails and matrices are brought with certainty to the proper positions. 40th. In combination with the jaws *a* to confine the aligned matrices laterally, the screw to actuate the same, the reciprocating-bar *e* having a constant length of movement and the adjustable connection between the bar and the screw, whereby the jaws may be caused to stop at a greater or less distance apart according to the length of the bar to be produced. 41st. In combination with mechanism, substantially as described, for delivering the type-bars thereto, a galley or receiver and the pivoted vibratory finger Z, whereby the bars are delivered one upon another in the galley. 42nd. In combination with the turning delivery finger, the galley and devices, substantially such as shown, securing the galley to the frame and permitting its instant removal when filled. 43rd. In a machine for producing type-bars, and in combination with means, substantially as described, for delivering the bars thereto, the upright galley or receiver hinged in place so that it may be turned upward to permit convenient inspection of the matter therein. 44th. In combination with casting and clamping mechanisms, and an elevated distributing mechanism, substantially as described, matrix-sustaining rails J secured to a vertical sliding guide, and adapted to reciprocate as described directly between the casting and distributing mechanism. 45th. A mechanism for carrying a matrix to a predetermined point and there depositing it, consisting of a travelling carrier provided with two opposing dogs or jaws to engage opposite sides of the matrix, and cams to open said jaws when they reach the proper point of discharge. 46th. In a mechanism for distributing matrices having necks of different widths, the combination of travelling plates or carriers, spring-actuated dogs or jaws in said carriers to engage the edges of the matrices, and a series of stationary cams to cause the opening of the jaws at different points in their course of movement, whereby the respective matrices are discharged at different points. 47th. A series of matrices, each having two or more necks, and each matrix differing in width of one or both of its necks from those bearing different characters, in combination with travelling plates or carriers provided with spring-actuated dogs or clamps to engage independently the two necks of the matrices, and a series of stationary cams distributed along the path of the carrier, and adapted, as described and shown, to open the dogs which hold each matrix simultaneously at the point where the matrix is to be distributed. 48th. In a matrix-distributing mechanism, the series of plates V travelling in an endless course, in combination with the dogs *c*, *c*, and *d*, *d*, arranged in pairs as described, the springs to close said dogs upon the matrices, and the series of stationary cams *e* and *d*, substantially as described and shown. 49th. In a distributing mechanism, and in combination with matrices differing from each other in dimensions, travelling plates or carriers provided with a plurality of pairs of dogs to engage a single matrix, and means, substantially as described, to disengage all the dogs which hold each matrix at a predetermined point. 50th. In combination with a series of matrices having undercut or dovetailed notches in their upper ends differing in their respective matrices, a sustaining rail or bar varying in width at different points, substantially as described, whereby the respective matrices are released at different points. 51st. In combination with matrices, substantially such as described and shown, a suspending rail or bar *e* of varying width, travelling spring, actuated dogs to engage and carry the matrices, and cams to open the dogs at particular times in the course of their travel. 52nd. In a distributing mechanism, a series of magazine tubes standing side by side, a matrix-sustaining rail or guide overlying their mouths, a carrier to advance the matrices along the rail, and mechanism for presenting the matrices one at a time to the rail. 53rd. In combination with the matrix-sustaining rails T, and the slides S to urge the matrices constantly forward thereon, the finger X₃ to elevate the matrices one at a time, the device to momentarily sustain the elevated matrices, the travelling plates provided with spring-actuated dogs to engage the matrices, and the cams to open the dogs for the admission of the matrices, substantially as described, whereby the matrices are separated and delivered indepen-

dently to the carrier preparatory to their distribution. 54th. In combination, with the travelling plates V provided with matrix-carrying dogs, the finger X₃ to place the matrices in the grasp of the dogs, and the cam wheel to actuate said finger, connected by gearing with the plates, whereby the action of the finger is ensured at the proper instant with respect to the position of the dogs. 55th. The travelling distributor-plates U, in combination with the driving-clutch and intermediate gear, and the yielding clutch-controlling finger W₃ adapted to be moved by the matrices, whereby the distributor-plates are caused to stop when the supply of matrices is exhausted. 56th. In combination with the sustaining rails, and the matrices adapted to be suspended thereby, the space-bars of a width less than the matrices adapted to descend between the rails, whereby the space-bars may be dropped from the line without releasing the matrices. 57th. In combination with the matrices and space-bars differing in width, and the distributing mechanism, substantially as described, to deliver the matrices at different points, matrix-sustaining rails located in advance of the distributor, and adapted as described to permit the descent of the space-bars between them, whereby the space-bars are released previous to the presentation of the matrices to the distributing devices. 58th. In combination with the vertically movable rails J to sustain the matrices and space-bars, the receiving rails T, the spring-actuated slide S, and means, substantially as described, for positively retracting said slide before the rails J complete their ascent, whereby the matrices are transferred to and urged constantly forward upon the rails T that they may be passed to the distributing devices. 59th. In combination with the devices for delivering the space-bars thereto, the vertically-movable carrier, the lower supports N, and the device for transferring the bars from the carrier to said supports. 60th. In combination with the casting and clamping mechanisms, and their driving clutch, substantially as described, pawls or carriers H to transfer the previously aligned matrices to the casting and clamping devices, and a pawl-carrier K arranged to actuate the driving clutch, substantially as described, whereby the action of transferring the matrices is caused to start the clamping and casting mechanism. 61st. The series of magazine tubes having their upper ends arranged in line, in combination with an endless chain carrying dogs or clamps to sustain the matrices over the entire series of tubes, and means, substantially as described, to open the dogs at predetermined points and thus drop the matrices into the tubes. 62nd. In an organized machine for producing type-bars, the combination substantially as hereinbefore described, of the following elements: the independent matrices, the magazine to contain the matrices, the finger-keys and their connections, substantially as described, to effect the discharge of the matrices one at a time from the magazine, composing mechanism to assemble or align the matrices discharged from the magazine, the casting mechanism embracing the force-pump, the mould and the melting-pot automatic clamping mechanism to confine the matrices against the mould mechanism, substantially as shown, to elevate the matrices from the mould to the distributing mechanism, and a distributing mechanism, substantially as described, for returning the matrices to the magazine. 63rd. In combination with the guide-rails, and a series of matrices arranged to move thereon, a stationary scale adjacent to said guide, and a finger adapted to be advanced by the action of the type over said scale, said finger mounted substantially as described, that it may be moved out of the path of the type to permit their advance at the completion of the assembling and composing operation. 64th. In a distributing mechanism, a matrix-carrier provided with a clamp to engage the matrix at one edge, in combination with a cam to cause the opening of said clamp at a predetermined point. 65th. In combination with rails or guides for the aligned matrices, a yielding finger to resist their advance, and automatic locking mechanism, substantially as described, to prevent their retrograde motion whereby the matrices are held in compact form as they are assembled. 66th. In combination with the matrix and guides therefor, the yielding finger extending transversely of the guides at an intermediate point in their length to resist the advance of the matrices, and movable from the path of the matrices, substantially as described, whereby the matrices may be permitted to continue their advance in the guides beyond the finger. 67th. In combination with the stationary bell, the sliding support having the finger *b*, the striker and the detent thereon, the stationary trip-arm to release the detent, and means, substantially as described, for advancing the matrices against the finger. 68th. In combination with the series of matrices or dies, guide-rails along which said dies may be moved, and a scale or series of graduations located upon or adjacent to said rails at an intermediate point in their length, whereby the operator is enabled to determine the aggregate width of the dies in the course of their assemblage or composition, and before advancing them to the end of the rail. 69th. A series of matrices, magazine tubes to hold the same, a key mechanism to deliver the matrices, a casting mechanism means for effecting the transfer of the matrices to the casting mechanism, justifying devices to co-operate with the assembled matrices, mechanism to return the matrices to the magazine, and driving devices for the operative parts, substantially as described.

No. 27,346. Chemical Fluid Ink Eraser.

(Composition chimique pour effacer l'encre.)

James W. Talmadge, New York, N. Y., U. S., 6th August, 1887; 5 years.

Claim.—The herein-described compound to be used as and for the purposes stated, consisting of acetic acid and solution of chloride of lime in the proportions specified, to wit, to one ounce of solution of chloride of lime add two drops of acetic acid.

No. 27,347. Apparatus for Teaching Kindergarten Studies. (Appareil pour enseigner à lire.)

Tiberias Dougherty, Philadelphia, Penn., U. S., 6th August, 1887; 5 years.

Claim.—1st. An apparatus for teaching, consisting of an apron with figures or objects thereon, means for moving said apron, and

No. 27,354. Manufacture of Charcoal and Distillation of Wood Products.*(Fabrication du Charbon bois et Distillation des Produits Pyrolygneux.)*

Elbert J. Burrell, Aetna, Tenn., U.S., 6th August, 1887; 5 years.

Claim.—1st. The combination of the following element: a closed charcoal kiln, condensers and a fan connected therewith, a main extending from the last condenser of the series to the furnace of the kiln, and having a valved inlet for regulating admission of atmospheric air, and a second fan located between the air-inlet and the furnace for the purpose of exhausting, or drawing the uncondensed gases from the last condenser, and forcing or propelling them admixed with air forward to the furnace, substantially as shown and described. 2nd. The combination, with a closed charcoal kiln, of two separate groups or series of condensers, a fan or blower located between the same for exhaust and pressure, a chimney connected with the condensers and provided with a valve for closing it, a main connected with the said chimney and leading to the kiln-furnace, an adjustable air-inlet valve or damper in said main for the mixture of air and gas, and a fan or pressure-blower connected with said main, all substantially as shown and described, to operate as specified.

No. 27,355. Bracket Wash Stand.*(Lavabo à Console.)*

Gagger D. Tolman and Lorenzo D. Roberts, Shawano, Wis., U.S., 6th August, 1887; 5 years.

Claim.—1st. A bracket wash stand, constructed of a back adapted for attachment to a wall or kindred support, and a soap dish shelf, towel rack and wash bowl supporting hoop, all projecting from the face of the said back, substantially as described. 2nd. In a wash stand, the combination of a back A, a soap dish shelf secured to the back, and an inclined brace wire C having its ends received in sockets in the under side of the shelf, and in the face of the back A respectively, substantially as described. 3rd. In a wash stand, the combination of a back A, screw eyes D held on the back A, one above the other, and a V shaped towel rod E formed with a downwardly bent arm passed loosely through the screw eyes D, substantially as described. 4th. In a wash stand, the combination of a back A and a wash-bowl supporting hoop F, having an arm G passed through the back A, a nut screwed on the inner end of the arm G, and a downwardly inclined brace I secured to the hoop and resting in a socket in the face of the back A, substantially as described. 5th. The combination of a wire bent to the form of a ring with parallel projecting ends J, another, wire bent to V form, and a binding sleeve K tightly surrounding the ends J and one arm of the V wire, substantially as and for the purpose specified.

No. 27,356. Printing Press.*(Presse d'Imprimerie.)*

Friederick Moritz, Dortmund, Germany, 6th August, 1887; 5 years.

Claim.—1st. The combination of the rollers *l* and *k*, the cylinder *r* and the platen *s* with the T shape gripper *g*, the directing rod *e*, the rod *h* having its pressing foot and the springs *f* and *i*, substantially as and for the purpose set forth. 2nd. In a printing press, the combination of the envelope receptacle *v* having the adjustable back *p* *pr*, and the rod *h* with its helical spring and presser-foot with the gripper *g*, the spring *gr*, the springs *f* and *i*, the directing rod *e*, the rollers *l* and *k* the arms *m* and *mr*, the spring *n*, the cylinder *r* and the platen *s* with means of supporting and actuating the same, substantially as and for the purpose set forth.

No. 27,357. Machine for Forming Netted Wire Fabrics.*(Machine à faire les toiles Métalliques en filet.)*

Theodore M. Conner, Richmond, Ind., U.S., 6th August, 1887; 5 years.

Claim.—1st. In mechanism for forming netted wire fabric, the combination, with a train of oppositely-rotating spool carrying disks, carried in pairs upon shafts arranged in line, each disk having notches or seats 8, of spool or bobbin frames having journals resting in said notches, friction rolls mounted upon the prolonged ends of said journals, guide-plates having intersecting openings with the edges of which said friction rolls engage, and automatic switches by which the frames are at intervals withdrawn from the notches of one pair of disks, and carried into those of the adjacent oppositely-rotating disks, substantially as described. 2nd. The combination, with a train of inter-meshing gears arranged in line, each gear having a hollow shaft, of notched spool-carrier disks mounted on said hollow shafts, bobbin-frames mounted in said notched disks, and automatic switches by which the bobbin-frames are simultaneously withdrawn from the notches of those disks, having similar rotation and lodged in the notches of the adjacent oppositely-revolving disks, substantially as described. 3rd. The combination, with a train of inter-meshing gears of equal diameter mounted on prolonged hollow shafts arranged in line, of a corresponding series of spool-carriers mounted on said hollow shafts, and having notched disks, bobbin-frames having journals lying in the notches of said disks, and switches by which the bobbin-frames are each withdrawn from the notches in one pair of disks, and lodged in the notches of the adjacent oppositely-revolving pair of disks, substantially as described. 4th. The combination, with a series of carriers driven by a train of inter-meshing gears and a series of bobbin-frames actuated by the same, of switches operated automatically by means of a double ring-cam, a lever having a dog running in said cam, and a shifter pivoted at the mouth of the ring to throw the dog from the inner to the outer surface, substantially as described. 5th. The combination, with a train of notched spool-carrier disks arranged in pairs driven by intermeshing gears, of bobbin-frames having journals resting in the notches of said disks plates having curved edges lying near the path of each of said

journals as the carriers revolve and switches which withdraw the bobbin-frames from the notches of one pair of disks, and lodge them in the notches of the adjacent oppositely-revolving disks, said notches being thrown by connecting rods operated by levers 21 and 22, the latter having connecting with a lever running in the cam-race of a wheel 27, substantially as described. 6th. The combination, with a series of hollow shafts arranged at regular intervals and in parallelism, of notched spool-carrier disks arranged in pairs upon each shaft, bobbin frames having journals which lie in the notches of said disks and are pierced to permit the passage of the wires from the bobbins, a series of switches to withdraw the journals of said frames from the notches of the alternate disks and lodge them in the notches of the adjacent and oppositely revolving disks, and a series of inter-meshing gears driving said hollow shafts, substantially as described. 7th. The combination, with a series of revolving spool-carrier disks driven by intermeshing gears, of a series of spool or bobbin frames having journals or supports lying in seats in said disks, friction rolls mounted on the projecting ends of the spool-frames, guide plates having intersecting opening concentric with the path of revolution of the spool-carriers, and switches acting upon the friction rolls of said carriers to transfer the latter from one pair of disks to the adjacent and oppositely revolving pair, substantially as described. 8th. The combination, with the spool-frames 10 having bearings 11, and provided with an eye or opening 13 in one of its bearings, of the friction-rolls 12, the disks 7 having eats 8, the hollow shaft 3, plates 17 having openings 18 and a driving gear, substantially as described.

No. 27,358. Hand Drilling Machine.*(Forerie à Main.)*

Benjamin F. Smith, Somerville, Mass., U.S., 6th August, 1887; 5 years.

Claim.—The improved hand drilling machine, consisting of the drill spindle *a* having recess in its lower end to receive the drill and the collars *ar, b*, as described, and having the sleeve *c* surrounding the upper end of the drill spindle *a*, and provided with the screw *e* working in a screw thread in the said drill spindle, in combination with the hub *c* of the handle *ci*, said hub surrounding the drill spindle between its collars, and having one or more tapering recesses *cr* for the rollers *d* and springs *dr*, as and for the purpose set forth.

No. 27,359. Advertising Attachment for Clocks.*(Appareil d'Annonce pour Horloges.)*

Andrew V. Strait, Sidney, N.Y., U.S., 6th August, 1887; 5 years.

Claim.—1st. The combination, with a clock, of an advertising device consisting of one or more upright, and horizontally-revolving cylinders provided with radial spokes at their upper ends, and holding and releasing rods connected with the clock-works by intermediate mechanism, and engaging with the spokes, substantially as and for the purpose set forth. 2nd. The combination, with a clock of one or more revolving cylinders to which the advertisements are attached, radial spokes or arms extending from one of the cylinders, and a holding and releasing mechanism operated by the clock-works and consisting of a cam-wheel, a pivoted lever hooked at one end and slotted at the other, and rods connected thereto and extending down between the spokes or radial arms, substantially as and for the purpose set forth. 3rd. The combination, with a clock, of an advertising device consisting of a series of cylinders, connected with each other by suitable gearing, each cylinder having curved slots, and retaining strips for the insertion and holding of the cords containing the advertisement mechanism for imparting to the cylinders a rotary motion, mechanism connected to the clock work to impart to the cylinders a movement at intervals, and bell operated by said cylinders, substantially as and for the purpose set forth.

No. 27,360. Fabric Boot.*(Botte en Tricot.)*

Martin V. Beiger and Adolphus Eberhart, Mishawaka, Ind., U.S., 6th August, 1887; 5 years.

Claim.—1st. The herein described method of making knitted seamless boots, which consists essentially, first, in spinning the yarn very coarse as set forth, second, in knitting the same loosely in a boot of mammoth proportions, third, in shrinking and consolidating the same down to size by fulling, fourth, in finishing the same on tree and last, substantially as set forth. 2nd. A boot constructed according to the herein described according to the herein described method, to wit: the foot and leg wholly formed by knitting from exceedingly coarse yarn loosely twisted in mammoth proportions, said leg and boot being then shrunken and consolidated by fulling and finally finished on tree and last, as set forth. 3rd. A seamless stiff-leg boot made wholly of wool, consolidated and stiffened by fulling, as set forth, and provided with an external heel lift attached directly to said boot, as set forth. 4th. A seamless stiff-leg boot made wholly of wool, consolidated and stiffened by fulling, as set forth, and provided with an internal heel or plate, and an external heel lift the fastenings where of extend through into said internal heel or plate.

No. 27,361. Heel Nailing Machine.*(Machine à clouer les talons.)*

Freeborn F. Raymond, 2d, Newton, Mass., U.S., 8th August, 1887; 5 years.

Claim.—1st. In a nailing machine, the combination of a last or work support, two templets *c1, c2*, supported by a table or other support, a cam and connecting mechanism for moving the templets automatically and successively into operative position, and two gangs of nail-driving devices adapted to be brought successively into operative position and operated. 2nd. In a nailing machine, the combination of a last or work support, two templets *c1, c2* carried by a table or other support, a cam and connecting devices for moving them automatically and successively into operative position, the nail-carriers or transferers *d, d1*, a cam and connecting devices for

moving each carrier or transferer automatically into and out of operative position, and two gangs of nail-driving devices adapted to be brought successively into operative position and operated. 3rd. In a nailing machine, the combination of a last or work support, the nail carriers or transferers *d*, *dt*, a cam, and connecting devices for revolving or operating the carrier and a cam, and connecting devices for revolving or operating the carrier and a cam, and connecting devices for reciprocating successively the said carriers or transferers, and two gangs of nail-driving devices adapted to be brought successively into operative position and operated. 4th. In a heel-nailing machine, the combination of a post or support, a carriage, carrying the plate *c*, the templets supported by said plate, a cam and connecting devices, the nail-driving devices and a top-lift spanker. 5th. The combination of the plate *c*, bearing or supporting two templets, *c*, *c2*, a cam *cs* and connecting devices, whereby the templets are moved successively into operative position, and are then moved and held out of operative position, while the top-lift spanker or heel-breasting knives, or either, are being reciprocated, all substantially as described. 6th. The combination of the plate *D*, supporting the nail-carriers *d*, *dt*, and devices for automatically revolving and reciprocating the same, substantially as described. 7th. The combination of the plate *D*, carrying or supporting the nail-holders *d*, *dt*, a cam *c11*, lever *c10* and arm *c12* connecting the lever with the pin and said pin, all substantially as described. 8th. The combination of the plate *c*, having ways upon which the nail-carrier is reciprocated, devices for automatically turning the plate and a cam, and connecting mechanism for reciprocating the nail-carrier upon said plate at predetermined intervals, all substantially as described. 9th. In a nailing machine, the combination of the nailing devices, the nail-carriers *d*, *dt*, and the nail-holders *E*, *E1*, adapted to deliver nails automatically to said nail-carriers, all substantially as described. 10th. The combination in a nail-carrying machine, of the nailing devices, the nail-carriers *d*, *dt*, the nail-holders *E*, *E1* and the covering plates *e5*, adapted to be automatically and simultaneously moved by the nail-carriers in one direction, and by the springs *e7* in the opposite direction, all substantially as described. 11th. The combination of a nail-holder *E*, having the covering-plate *e5*, provided with a downward-extending V-shaped extension *e5*, a pin *e4*, supported by a nail-carrier and adapted to come in contact with the edge of the said extension and the spring *e7*, all substantially as described. 12th. The combination, in a nailing machine, of the nailing devices, the nail-carriers *d*, *dt*, and a nail-distributor for receiving nails and distributing them in two separate gangs, or groups for delivery to the nail-carriers, all substantially as described. 13th. The combination, in a nailing machine, of the nail-driving devices, with a nail-distributor having the block *F2* and the two sets of tubes or passages *e2*, *e3*, one set adapted to deliver a gang or set of nails of one arrangement, all substantially as described. 14th. The combination, in a weighing machine, of the nail-driving devices and nail-distributing devices, comprising the block *F*, intermittently moved in one direction to receive nails from a nail-making or sorting machine, the plate *F2* having holes and two sets or groups of tubes or passages *e2*, *e3*, all substantially as and for the purposes described. 15th. In a nailing machine, a nail-distributor, comprising the perforated nail-receiving and delivery block *F*, the plate *F2*, having holes corresponding with holes in the nail-receiving and delivery block, and the tubes or passages *e2*, *e3*, arranged in two or more gangs or groups for dividing or separating the nails received from the nail-receiving and delivery block into two or more separate gangs or groups, all substantially as described. 16th. The combination of the table *c*, carrying the templets *c1*, *c2*, and adapted to be moved vertically and to be automatically revolved, and provided with the latch-blocks *f*, *f*, with the latch *F*, and the latch-releasing arm *f2* and cam *f3* for operating the same, substantially as described. 17th. The combination of a templet or templets, with the plate *H*, supporting top-lift holding devices, and means for moving them automatically and successively into and out of operative position, all substantially as described. 18th. The combination of the plate *H*, carrying or supporting top-lift holding devices, a cam *c8*, and connecting mechanism for automatically turning it into and out of operative position, substantially as described. 19th. The combination of the heel-blank carrying devices, supported by a plate *c*, a cam and connecting devices for automatically turning or revolving the plate to move the said carrying devices into and out of operative position, all substantially as described. 20th. The combination, in a nailing machine, of the jack or work-support, two templets, two nail-carriers, the reciprocating nail-driving devices, the main shaft of the machine and intermediate mechanism connecting it with the two templets, and with the two nail-carriers and with the nail-driving devices, all substantially as described.

No. 27,362. Heel Attaching Machine.

(Machine à assujétir les talons.)

Freeborn F. Raymond, 2d, Newton, Mass., U. S., 8th August, 1887; 5 years.

Claim.—1st. In a machine for compressing heels and attaching them to boots and shoes, the combination of a support or jack, and a last mounted thereon for holding the boot or shoe and presenting it to the heel-compressing and heel-attaching devices, horizontally-movable, heel-compressors and nail-driving devices, whereby the heel blank is compressed by lateral and vertical pressure upon the sole of the boot or shoe to which it is attached, and while it is being attached, all substantially as and for the purposes described. 2nd. In a machine for compressing heel-blanks and attaching them to the soles of boots and shoes, the combination of a jack or support, and a last mounted thereon for holding the boot or shoe and presenting it to the heel-compressing and heel-attaching devices, with horizontally-movable heel-compressors, a vertically-movable pressure-plate or templet, and nail-driving devices, all adapted for successive and conjoint action in an organized machine, substantially as and for the purposes described. 3rd. In a machine for attaching heels to boots and shoes, the combination of a jack or support, and a last mounted thereon for holding the boot or shoe and presenting it to the heel-attaching devices, with horizontally-movable shoe centering and holding devices, adapted to be automatically moved to centre and

hold the shoe, after the jack or support has been moved into operative position and the machine set in operation, substantially as described. 4th. In a machine for compressing heel blanks and attaching them to the soles of boots and shoes, the combination of a jack or support, and a last mounted thereon for holding the boot or shoe, and presenting it to the heel-compressing and attaching devices, shoe centering and holding devices, heel compressors, a templet and nail-driving devices, whereby the boot or shoe is automatically centered and held, and the heel-compressing devices then caused to compress and fit the heel upon the clamped sole, and the nail-driving devices actuated to attach the heel blank, while thus held compressed permanently to the boot or shoe, substantially as described. 5th. In a machine for compressing heel-blanks and attaching them to the soles of boots and shoes, the combination of a jack or support and a last mounted thereon for holding the boot or shoe, and presenting it to the heel-compressing and heel-attaching devices, heel-compressing devices, the heel-attaching devices, the main shaft of the machine, and mechanism for connecting it respectively with the heel-compressors, and devices are caused to be successively operated, all substantially as described. 6th. The combination, in a machine for compressing heel-blanks, and attaching them to the soles of boots and shoes, of a jack or work-support, and a last mounted thereon for holding the boot or shoe and presenting it to the heel-compressing and heel-attaching devices, the heel-compressors *G*, *G1*, and devices for adjusting them horizontally in relation to the last or work-support, and nail-driving devices, all substantially as and for the purposes described. 7th. The combination, in a heel-attaching machine, of the last or work-support, and a last mounted thereon, the sliding boot or shoe centering and holding devices *H*, *H1*, and devices for adjusting them horizontally in relation to the last or work-support, substantially as described. 8th. The combination in a heel-attaching machine, of a jack or work-support and a last mounted thereon, the sliding boot or shoe centering and holding devices *H*, *H1*, and means for adjusting them horizontally in relation to the work-support, substantially as described. 9th. In a heel-nailing machine, the combination of the shoe centering and holding devices *H*, *H1*, the sliding blocks *f1* and their operating levers *N*, all substantially as and for the purposes described. 10th. In a heel-nailing machine, the combination of the heel centering and holding devices *H*, *H1*, the heel centering or compressing dies *G*, *G1*, their supporting blocks *f1* and their operating levers *N*, all substantially as and for the purposes described. 11th. In a heel-nailing machine, the combination of the boot and shoe centering and holding devices *H*, *H1*, the heel-centering or compressing dies *G*, *G1*, their supporting blocks *f1*, and operating levers *N*, all substantially as and for the purposes described. 12th. In a heel-nailing machine, the combination of the boot and shoe centering and holding devices *H*, *H1*, the heel-centering or compressing dies *G*, *G1*, their supporting blocks *f1*, and operating levers *N*, all substantially as and for the purposes described. 13th. In a heel-nailing machine, the combination of the blocks *f1*, supporting the heel-centering or compressing dies *G*, *G1*, and shoe-centering devices *H*, *H1*, the levers *N*, the toggles *o*, *o1*, the sliding block *o2* and the cam *o4*, substantially as described. 14th. In the heel-nailing machine, the combination of the block *F*, carrying the shoe centering devices *H*, *H1*, and the heel-centering devices or compressing dies *G*, *G1*, the levers *N*, toggles *o*, *o1*, lifting-block *o2* and cam *o5*, substantially as described. 15th. In a heel-attaching machine, the heel-compressing or centering dies *G*, *G1*, having the front sections *g* shaped upon their inner surfaces, as described. 16th. In a heel-nailing machine, the shoe centering and holding devices *H*, *H1*, comprising the movable blocks or holders *h1* shaped substantially as specified, and lined with rubber *h* or other suitable material, substantially as described. 17th. In a heel-nailing machine, the shoe centering and holding devices *H*, *H1*, attached, substantially as specified, to their holding-blocks, to yield horizontally in relation thereto, all substantially as and for the purposes described. 18th. The combination of the blocks *g3*, having a recess *g8*, substantially as specified, the die *G* having a projection entering the recess *g8*, and the spring *g10*, as and for the purposes described. 19th. A die *G* made in two sections *p*, *p1*, shaped substantially as described, and held together by a connecting pin or device *p2*, and a spring *p3* for closing and maintaining the sections closed, substantially as described. 20th. In a heel-compressing and attaching machine, the combination of a jack or support, a last mounted thereon for holding and presenting boots and shoes to the compressing and attaching devices, the heel-compressors *G*, *G1*, the templet-plate *D* having the downward projection *d* adapted to enter the die-space or recess and the heel-nailing devices, substantially as described.

No. 27,363. Steam Engine Governing Device. (Gouverneur de machine à vapeur.)

Frank H. Ball, Erie, Penn., U. S., 8th August, 1887; 5 years.

Claim.—1st. In a steam engine governor device, wherein the regulating parts are adjusted so as to give substantially an equilibrium to the opposing forces, the combination with said regulating parts of a spring, having a gradually-yielding connection applied to resist the action of said regulating parts, substantially as and for the purposes mentioned. 2nd. In steam engine governing device, the combination, substantially as shown, of a wheel upon the engine-shaft, centrifugally movable weights, adjusted in said wheel, springs connected with said wheel, and weights so adjusted as to substantially counterbalance the centrifugal force generated by the rotation of said weights around the shaft, and an auxiliary spring having a yielding connection at one end applied to resist both the inward and outward movement of said weights, for the purposes set forth.

No. 27,364. Process of Making White Pigments. (Procédé de fabrication des pigments blancs.)

George T. Lewis, Philadelphia, Penn., U. S., 8th August, 1887; 5 years.

Claim.—The process of making an improved white pigment from mixed crude lead and zinc ore, consisting in roasting the ore by blowing hot air into the mass of ore and carbonaceous matter, and then subliming the mixture of residual and roasted ore of this operation, and the condensed fumes, by heating them in a wetherill furnace, or in a low cupola furnace, with lower and upper blast, substantially as shown and described.

No. 27,365. Anti-Freezing Apparatus for Water Pipes. (*Appareil anti-congela-teur pour tuyaux d'eau.*)

Edwin A. Newman, Washington, D. C., U. S., 8th August, 1887: 5 years.

Claim.—1st. The combination of a valve-casing having an inlet opening, an outlet-opening and a waste-opening, and the thermostatic apparatus controlling the operations of the valve to automatically close and automatically open communication between the waste opening, and the outlet-opening when the water is cut off, and closing their communication when the water is turned on, substantially as and for the purpose set forth. 2nd. The combination of the valve-casing having an inlet-opening, an outlet-opening, a waste and thermostatic coupling opening, the valve and the thermostatic apparatus controlling the operations of the valve to automatically cut off and automatically open communication between the source of supply of water, and the pipes to be supplied while opening communication between the waste-opening and outlet-opening when the water is cut off and closing their communication when the water is turned on, substantially as and for the purpose set forth. 3rd. The combination of the valve-casing having an inlet-opening, an outlet-opening, a waste-opening and the thermostat-coupling opening, the valve mechanism and the thermostatic apparatus connected with the valve-casing by the coupling-opening, and controlling the operations of the valve mechanism to automatically cut off and automatically open communication between the source of supply of the water and the pipe to be supplied, while opening communication between the waste-opening and the outlet-opening when the water is cut off and closing their communication when the water is turned on, substantially as and for the purpose set forth. 4th. The combination of the valve-casing having an inlet-opening, an outlet-opening, a waste-opening and the thermostat-coupling opening, the valve mechanism within the casing, and the thermostatic apparatus connected with the valve-casing by the coupling-opening, and controlling the operations of the valve mechanism to automatically cut off and automatically open communication between the source of supply of the water and the pipe to be supplied, while opening communication between the waste-opening and the outlet-opening when the water is cut off, and closing their communication when the water is turned on, substantially as and for the purpose set forth. 5th. The combination of the valve-casing having the inlet-opening, the outlet-opening and the thermostat-coupling opening, the valve mechanism within the casing, and the thermostat apparatus having the rod projecting into the valve-casing and acting upon the valve mechanism to automatically turn the water off and on, substantially as set forth. 6th. The combination of the valve-casing having inlet, outlet and waste-openings, the valve by which the outlet-opening is opened and closed, and communication between the waste-opening and outlet-opening opened and closed, the actuating-lever thereof, the controlling-lever, the mechanism connecting these levers by way of which the actuating-lever is operated by the controlling-lever, and the thermostatic apparatus acting upon the controlling-lever, substantially as and for the purpose set forth. 7th. The combination of the valve-casing having the inlet, outlet and waste-openings, the slide-valve, the pivoted actuating-lever thereof, the pivoted controlling-lever provided with the side arm at one end, the guideway and pin connection between its opposite end, and the actuating-lever and the spring connected at its ends with the side arm of the controlling-lever and the end of the actuating-lever opposite that engaging the valve, substantially as and for the purpose set forth. 8th. The combination of the valve-casing having inlet and outlet openings, the sliding valve, the pivoted controlling-lever having connection with the valve and the valve-check with which the controlling-lever is provided, substantially as and for the purpose set forth. 9th. The combination of the valve-casing having inlet and outlet openings, the valve by which the outlet-opening is opened and closed, the valve-actuating lever, the controlling lever, its valve-check attachment mechanism connecting these levers by way of which the actuating-lever is operated by the controlling-lever, and the thermostatic apparatus acting upon the controlling-lever, substantially as and for the purpose set forth. 10th. The combination of the valve-casing having the inlet and outlet openings, the slide-valve, the pivoted actuating-lever thereof, the pivoted controlling-lever provided with the side arm at one end, the mechanism by which the controlling-lever at its opposite end is connected with and operates the actuating-lever, the spring connected at its ends with the inner end of the actuating-lever and the side arm of the controlling-lever, the valve-check and the rod of the thermostat acting upon the side arm of the controlling-lever, substantially as and for the purpose set forth. 11th. The combination of the valve-casing having inlet and outlet openings, the slide-valve, the pivoted actuating-lever engaging the valve at its outer end, the guideway pin of the actuating-lever, the controlling-lever cut away at its lower end and provided with the notched and shouldered spring forming a guideway, the side-arm of the controlling-lever and the spring acting at its opposite ends upon the side arm of the controlling-lever, and the inner end of the actuating-lever, substantially as and for the purpose set forth. 12th. The combination of the valve-casing, the thermostatic-casing secured at its lower end in the coupling-socket of the valve-casing, the thermostatic-rod, the valve, and the controlling-lever pivoted in the casing and having connection with valve, substantially as and for the purpose set forth. 13th. The combination of the thermostatic-casing, the thermostat-rod, the valve-casing having the coupling-socket for the thermostatic-casing, the valve, the controlling-lever having connection with the valve, the spring acting on the thermostatic rod, toe packing-socket and packing for the thermostatic rod

at its end entering the valve-casing, and the bearing-socket for the opposite end of the thermostatic-rod formed by the plug of the thermostatic-casing, substantially as and for the purpose set forth. 14th. The combination of the valve-casing having the inlet and outlet openings, the valve mechanism, the thermostatic casing, the coupling-socket by which it is connected to the valve casing, the thermostatic rod acting on the controlling-lever of the valve mechanism, the spring acting on the thermostatic rod, and the adjustable plug in the end of the thermostatic casing, substantially as and for the purpose set forth. 15th. The combination of the valve-casing, the valve mechanism, the thermostatic apparatus controlling the operation of the valve mechanism, and the indicator by which to show the degree of temperature at which the thermostatic apparatus is set to work, substantially as and for the purpose set forth. 16th. The combination of the thermostatic casing, the thermostatic rod, the adjustable screw-plug in the upper end of the thermostatic casing, and against which the thermostatic rod bears, and the screw-cap, substantially as and for the purpose set forth. 17th. The combination of the valve-casing having the inlet, outlet and waste openings, and the thermostat-coupling opening, the pipe or pipes to be supplied with water, the valve mechanism within the casing, the thermostatic apparatus connected with the valve-casing by its coupling-opening, and acting on the valve mechanism, and the venting apparatus by which air is admitted to the upper end or ends of the pipe or pipes to be emptied, substantially as and for the purpose set forth. 18th. The combination of the valve-casing having the inlet and outlet openings, and the thermostat-coupling opening, the pipe or pipes to be supplied with water, the valve mechanism, the thermostatic apparatus connected with the valve casing by its coupling-opening, and acting upon the valve mechanism to automatically cut off and automatically turn on the supply of water, the lever operating upon the thermostatic apparatus and its connecting hand-actuated mechanism by which to temporarily turn on the water at times during which the water has been cut off by the automatic action of the thermostatic apparatus, substantially as set forth. 19th. The combination of the valve-casing having the inlet, outlet and waste openings, and a thermostat-coupling opening, the pipe or pipes to be supplied with water, the valve mechanism, the thermostatic apparatus connected with the valve-casing by its coupling-opening, and acting upon the valve mechanism to automatically cut off and automatically turn on the supply of water, hand-actuated mechanism having connection with and operating upon the thermostatic apparatus to temporarily turn on the water at times during which the water has been cut off by the automatic action of the thermostatic apparatus, and the venting apparatus by which air is admitted to the upper end or ends of the pipe or pipes to be emptied, substantially as and for the purpose set forth. 20th. The combination of the valve-casing having the inlet and outlet openings, the pipe or pipes to be supplied with water, the valve mechanism, the thermostatic apparatus automatically controlling the operations of the valve mechanism, and the hand-actuated mechanism operating upon the thermostatic apparatus, and provided with pull handles in close proximity to the cocks of the pipe or pipes, supplied with water, substantially as and for the purpose set forth. 21st. The combination of the thermostatic-casing, the thermostatic-rod, the valve-casing having inlet and outlet openings, the valve mechanism automatically actuated to cut off and turn on the supply of water, and the hand-actuated lever for operating upon the thermostatic-rod, substantially as and for the purpose set forth. 22nd. The combination of the thermostatic casing, the thermostatic-rod, the spring acting upon the thermostatic-rod, the bearing against which the spring presses, the thermostatic-rod, the lever for operating upon the thermostatic-rod and the devices for actuating this lever substantially as and for the purpose set forth. 23rd. The combination of the valve-casing having inlet and outlet openings, the valve by which the outlet opening is opened and closed, the valve actuating lever, the controlling-lever, its valve-check attachment mechanism connecting these levers by way of which the actuating-lever is operated by the controlling-lever, the thermostatic apparatus acting upon the controlling-lever to automatically control the operations of the valve mechanism, to cut off and turn on the water and the hand-actuated mechanism for operating the thermostatic apparatus, substantially as and for the purpose set forth. 24th. The combination of the valve-casing having the inlet and outlet openings, the slide-valve, the pivoted actuating-lever connecting at its outer end with the valve, the pivoted controlling-lever provided with the side arm at its pivoted end, the mechanism by which the controlling-lever at its opposite end is connected with and operates the actuating-lever, the spring connected at its ends with the inner end of the actuating-lever and the side arm of the controlling-lever, the resistance attachment of the controlling-lever, the thermostatic apparatus, the rod of which acts upon the side arm of the controlling-lever, and the lever by way of which to operate the thermostatic rod by hand to cause it to act upon the controlling-lever, substantially as and for the purpose set forth. 25th. The combination of the thermostatic-casing, the thermostatic-rod, the spring acting upon the thermostatic-rod, the adjustable plug of the thermostatic-casing forming a bearing against which the thermostatic rod is pressed by its spring, the lever having its fulcrum against said plug and the pipe attached at the side of the thermostatic-casing, substantially as and for the purpose set forth. 26th. The combination of the valve-casing having the inlet opening for connection with the supply-pipe, and provided with the outlet, waste and thermostatic-coupling openings, the valve mechanism with the casing, the thermostatic-casing coupled to the valve casing, the thermostatic-rod projecting into the valve-casing and acting upon the valve mechanism, the water-way communicating at its opposite ends with the thermostatic casing, and the outlet opening of the valve-casing with the main service-pipe to which the water passes from the supply-pipe through the valve-casing, the water-way and the thermostatic-casing, substantially as and for the purpose set forth. 27th. The combination of the valve-casing having an inlet opening, an outlet opening, the waste-opening and a thermostat-coupling opening, the valve mechanism within the casing, the thermostatic casing coupled to the valve-casing and acting upon the valve mechanism, the water-way communicating at its opposite ends with the thermostatic-casing and the valve-casing, the main service-pipe connected with the thermostatic casing, the draining-pipe communicating at its opposite ends with the water-way, and

the main service-pipe and the check-valve for directing the back flow of the water to the draining-pipe, substantially as and for the purpose set forth.

No. 27,366. Curtain Guide. (*Guide-rideau.*)

Alfred M. Haswell, Toronto, Ont., 8th August, 1887; 5 years.

Claim.—In a curtain guide, the guiding wire C, the adjustable attachment as composed of the parts D, E and a, in combination each with the other and with the curtain B as attached thereto, substantially as for the purposes set forth.

No. 27,367. Sole-Nailing Machine.

(*Machine à clouer les semelles*)

Freeborn F. Raymond, 2d, Newton, Mass., U.S., 8th August, 1887; 5 years.

Claim.—1st. In a sole-nailing machine, in combination with one or more last or work supports, a right-sole templet-plate, a left-sole templet-plate, and means for moving them into the same operative position. 2nd. In a sole-nailing machine, the combination of the right templet, the left templet adapted to be moved successively into the same operative position, with reciprocating nail-driving devices, adapted to be used with the right templet, and reciprocating nail-driving devices adapted to be used with the left templet, and mechanism for moving them successively into operative position. 3rd. The combination, in a sole-nailing machine, of the right templet, the left-templet, adapted to be moved successively into the same operative position with the right nail-carrier, and the left nail-carrier, and devices for alternately moving them into operative position with their respective templets. 4th. The combination, in a nailing machine, of two nail-carriers with a nail-distributor, consisting of the block H, having two lines of holes *h* and *h'*, the nail-holders G, G', and the groups *h*₂, *h*₃, of tubes or passages, one of which groups connects one line of holes with one nail-holder, and the other of which connects the other line of holes with the other nail-holder. 5th. The combination, in a nailing machine, of the distributor, comprising a block, having two lines of holes, *h*, *h'*, and two sets of distributing tubes *h*₂, *h*₃, with nail-receiving and delivering block, adapted to deliver nails, first to the line of holes *h* and then to the line of holes *h'*. 6th. In a nailing machine, a nail-distributor, comprising the block H, having the two lines of holes *h*, *h'*, and the groups *h*₂, *h*₃ of passages or tubes. 7th. The combination of the block H, having the two lines of holes *h*, *h'*, the nail-receiving and delivery block H', and devices for moving said block after it has received its load of nails, alternately in different or opposite directions, first to a position to bring its holes in register with the holes *h*, and next into register with the holes *h'*. 8th. In a nailing machine, the combination of a last or work support, the right-sole templet-plate, the left-sole templet-plate, the right-sole beating-out form, the left-sole beating-out form, and devices for moving them into operative position. 9th. The combination of the nail-holder or holders G, G', a covering plate P, a cam and connecting devices, all substantially as described. 10th. The combination of the block H, having passages *h*, *h'*, the nail-receiving and delivery block H', the fingers or levers and cams, substantially as described. 11th. The combination of the plate H, having the holes *h*, *h'*, the nail-receiving and delivery block H', the cap guide plates, the fingers, the connecting straps, the cams and connecting devices, substantially as described. 12th. The combination of a plate H, having two lines *h*, *h'*, of nail-delivery holes arranged therein, with the nail-holding and delivery block H', and devices for moving the same longitudinally and transversely upon said plate H, to bring its holes in register successively with each line of holes of said plate, substantially as described. 13th. The combination in the templet-plate, having guides for the carrier-plate *f*, said carrier-plate *f*, the collar *h*, surrounding the nail-carrier plate, the yoke *f*₂ arranged to lay hold of the collar, and devices for reciprocating the yoke at stated intervals, substantially as described. 14th. The combination of the templet-plate supporting the right and left sole-nailing templets, a post, a shaft, the pinion thereon, the sector, a cam and the sliding bar operated thereby and connected with the sector, all substantially as described. 15th. The combination of the templets, the nail-holders, the cam-shaft and cams thereon for operating the templets and nail-holders, the nail-distributors, the nail-receiving and delivery block, the cam shaft and cams thereon for moving the nail-receiving and delivery block, as specified, all substantially as described.

No. 27,368. Chalk Suspender for Billiard Tables. (*Porte-craie de billard.*)

David W. Seely, Elmira, N.Y., U.S., 8th August, 1887; 5 years.

Claim.—1st. The chalk-holder, made from a single piece of sheet metal, and bent to form the top and depending end walls *h*, the said end walls having the side plates or flanges bent at right angles to their outer edges, and the top having the bent re-enforced plates on its under side, for the purpose set forth, substantially as described. 2nd. The chalk-holder, herein described, made from a single piece of metal bent to form the top and depending end walls, and the screw for drawing the end walls together, the said end walls having a slight elasticity, and adapted to expand when the screw is loosened. 3rd. In a billiard chalk suspender, the pulley-frame A and the pulleys E therein, arranged at a distance apart, in combination with the cord passing over the pulleys, the weight having openings *f*₁, *f*₂, arranged at a less distance apart than the pulleys E, the cord having its pendent ends passing through the openings *f*₁, *f*₂, one of the ends being secured to the ring, and the other end being free and provided with the chalk, as set forth. 4th. The frame A, having pulleys E, arranged at a distance apart, in combination with the cord passing over the pulleys, and the weighted ring G having the cord connected thereto at points less distant than the space between the pulleys E, as set forth. 5th. In a chalk-suspender, the pulleys, in combination with the cord, and the weighted ring on the cord, the cord being passed through the centre or the ring, leaving side portions of the ring on each side of the cord, as set forth.

No. 27,369. Machine for Beveling and Moulding the Edges of Plates of Glass, and for Ornamenting the Surfaces of Plates of Glass. (*Appareil pour ébâbler et mouler les arêtes des feuilles de verre et orner les surfaces des feuilles de verre.*)

Obed C. Hawkes, Birmingham, Eng., 8th August, 1887; 5 years.

Claim.—In machinery for beveling and moulding the edges and ornamenting the surfaces of plates of glass, the combination of a to and fro or reciprocating carriage, supporting an adjustable table, on which the plate of glass to be operated upon is clamped or fixed, with a vertical or horizontal rotating cutting mill or circular grinder, together with mechanism for giving a reciprocating motion to the travelling carriage and table, and for automatically reversing the direction of the motion of the said travelling carriage and table, the several parts of the machinery being constructed, arranged and operating substantially as hereinbefore described and illustrated in the accompanying drawings.

No. 27,370. Velocipede. (*Vélocipède.*)

Friedrich Renz, Leipsic, Germany, 8th August, 1887; 5 years.

Claim.—1st. In a velocipede, the wheel A constructed of the hoops A, A, held apart by rods *a*, *a*, and secured to the central rim B, with flexible tyre by spokes *f*, *f*, substantially as and for the purpose set forth. 2nd. In a velocipede, the wheel A, constructed as described, revolving on axle C, substantially as and for the purpose set forth. 3rd. In a velocipede, the combination, with the wheel, as described, and the axle C with seat D, of the pedal crank-shaft E, with chain-wheels *g*, *g*, the chains *h*, *h* and the chain wheels *o*, *o*, fastened on to the wheel A, substantially as and for the purpose set forth. 4th. In a velocipede, the arms G with wheels *i*, *i*, fulcrumed at *k*, *k*, to arms H, and operated by levers *o*, *o*, and rods M, M, in the manner described and for the purpose set forth. 5th. In a velocipede, the rear wheel F attached to the forked arm H, hinged to arms H, H, and regulated by the spring *t*, substantially as and for the purpose set forth. 6th. In a velocipede, the wheel A, constructed as described, for the purpose of permitting the rider to seat himself inside the same, for revolving and steering said wheel by means of pedal cranks chain wheels, chains and levers, all placed inside of said wheel and within easy reach of said operator, substantially as and for the purpose set forth.

No. 27,371. Fire-Escape. (*Sauveteur d'incendie.*)

George Ogden, Trumansburg, N.Y., U.S., 8th August, 1887; 5 years.

Claim.—1st. In a friction fire-escape, the combination of the block A, having the openings B, C, the arms D depending from the said block, the drum journalled between the said arms, and the strap H wound on the drum and passed through the openings B, C, and means, substantially as described, to compress the arms against the ends of the drum, for the purpose set forth, substantially as described. 2nd. In a friction fire-escape, the combination of the block A having the openings B, C, the arms D secured on the said block, the bolt E and nut F to clamp the arms, the drum journalled between the arms and provided with the strap extending upward through the openings B, C, and the straps K and L attached to the lower ends of the arms, and adapted to form a loop and the cross-bar or yoke O adapted to slide in the said straps, substantially as described.

No. 27,372. Cut-Out Switch for Railways.

(*Aiguille de chemin de fer.*)

Asa G. Dailey, Detroit, Mich., U.S., 8th August, 1887; 5 years.

Claim.—1st. In combination with the rails 1, the movable rail 17 and plate 5, having thereon the offset, and flange 22, substantially as shown and described. 2nd. The combination of the rail 1, the movable rail 17 and the chair 21, the flange of said rail 17 being cut away within the chair, substantially as shown and described. 3rd. In combination with the rails 1, 1, having the flanges thereon partly cut away, a plate 5, having at each end the narrow 21, substantially as shown and described.

No. 27,373. Feed Cutting Machine.

(*Coupe-paille.*)

Lindley M. Batty, Canton, Ohio, U.S., 9th August, 1887; 5 years.

Claim.—1st. In a feed-cutter, the combination of the arm A secured to the shaft B, and provided with suitable recesses, with the bolt D having a bevelled head, and the narrow semicircular plate or cutter C, which is bevelled upon its back for the bevelled head of the bolt to bear against, substantially as shown. 2nd. In a feed-cutter, the combination of the arm A provided with a suitable recess F and bolt hole E, with a narrow semicircular plate or cutter C bevelled upon its back, and the bolt D having a bevelled head for fastening the plate in position, substantially as described. 3rd. The combination of the arm A, secured to the revolving shaft B, and provided with a recess to receive the cutter, the cutter having a bevelled back, a fulcrum or flange H for the cutter to bear against, and the clamping bolt D having a bevelled head, which catches over the cutter and holds it securely in position, substantially as set forth. 4th. The combination in a feed cutter, of the blade, the stripper K provided with pivots P, and pivoted to the main frame T at P₁, with the cutter bar J and the spirally-ribbed feed-roll L, substantially as and for the purpose set forth.

No. 27,374. Wheel and Axle. (*Roue et essieu.*)

Granville W. Pittman, Keokuk, Iowa, U.S., 9th August, 1887; 5 years.

Claim.—1st. A wheel and axle, consisting of a disk-journal having

a flat face bearing in a hub formed by a circular cavity in the wheel, partly enclosed by an annular plate firmly secured over said cavity, and confining said disk journal between elastic bearings, substantially as set forth. 2nd. The combination with the axle A, provided with the disk A₁, having a flat face, conical ends and a central projection *d*, of the wheel B, provided with a hub C C₁ formed by a recess, and annular plate accommodating the journal A₁, and bearing and cushions D, E and F and G, substantially as set forth. 3rd. The combination of the axle A, disk A₁, conical ends *a*, facing *a*, wheel B, hub C, hub-plate C₁, neck *c*, bearing G, bearing D, elastic ring E and cushion F, substantially as set forth.

No. 27,375. Road Planer. (*Grattoir de chemin*)

John C. Steele, Vaughan, Ont., 9th August, 1887; 5 years.

Claim.—1st. A road planer, constructed with a curved plane iron, placed in a suitable frame, at an angle of about 65 degrees, less or more, and secured by brackets to the frame of the machine, and moved on vertically adjustable wheels, substantially as set forth. 2nd. In a road planer, having a plane iron, either wholly of metal or partly of metal, and of other suitable material, curved in the face and secured to suitable frame-work, the combination of the vertically-adjustable wheels F, F₁, and cranked axles *e*, *e*₁, the levers *g*, handles with links *g*₃, springs *g*₄, latches *g*₅ and ratchets *g*₆, the whole constructed and arranged and operating substantially as set forth.

No. 27,376. Combined Centre Table and Secretary. (*Table de centre secrétaire.*)

Hermin A. Goring, London, Ont., 9th August, 1887; 5 years.

Claim.—1st. The table-top T and bed-piece B, in combination with the stand S, formed with the top S₁, substantially as shown and described and for the purpose specified. 2nd. The table-top T, formed with apartments A, bed-piece B and door E, in combination with the stand S, formed with the top S₁ and flange F, substantially as shown and described and for the purpose specified. 3rd. The table-top T, formed with apartments A and door E, in combination with and hinged to the top S₁ of the stand S, substantially as shown and described and for the purpose specified.

No. 27,377. Dental Engine. (*Machine Dentaire.*)

William A. Knowles, Alameda, Cal., U.S., 9th August, 1887; 5 years.

Claim.—1st. The combination, with a bracket, of a sleeve secured thereto, and a strain-rod extending from the bracket to the outer end of the said sleeve. 2nd. The combination, with a bracket and a sleeve, of an adjustable sleeve, substantially as and for the purposes set forth. 3rd. The combination, with a bracket and sleeve secured thereto, of an adjustable sleeve, and a collar carrying a set screw to adjust the adjustable sleeve. 4th. The combination of a plate having perforated lugs, of a bracket having pivots, and a sleeve secured to said bracket and serving as a support for the operating mechanism, substantially as and for the purposes set forth. 5th. The combination, with a stationary sleeve, of an adjustable sleeve, a tubular post or sleeve R attached to the latter, a vertical jointed shaft in said post, a head-block N mounted on said shaft, a sleeve supported by said head-block, a drill-rod, and the drilling mechanism employed by the latter, substantially as and for the purposes set forth. 6th. The combination, with a tubular support, of a pipe or tube adapted to be automatically adjusted therein, a drill head post and a drill head jointed thereto, substantially as and for the purposes set forth. 7th. The combination, with a tubular support and a spring in the bottom thereof, of a vertically adjustable sleeve located in the said support, a drill-head post located in said sleeve, and a drill-head jointed to said post, substantially as and for the purposes set forth.

No. 27,378. Railway Plow and Scraper.

(*Charrue et Grattoir de Chemin de fer.*)

Frank Nearing, Jersey Shore, Penn., U.S., 9th August, 1887; 5 years.

Claim.—1st. The combination, with a truck and its frame, of suitable side bars connected to the truck, and provided at their outer ends with earth excavating devices, substantially as described. 2nd. The main frame of the truck, provided with a central beam A₁, in combination with the arms C, C₁, and means for elevating them, substantially as described. 3rd. The frame of the truck, provided with bars C, C₁, in combination with the plows and the braces F, substantially as and for the purposes set forth. 4th. The scrapers hinged to the side arms C, C₁, provided with the projections P, in combination with the chains for elevating the scrapers the lids D₂, and the devices for fastening the lids, substantially as described.

No. 27,379. Ironing Table. (*Table à repasser.*)

Maud Hunter, Toronto, Ont., 9th August, 1887; 5 years.

Claim.—1st. As a new article of manufacture, an ironing-table capable of adjustment as to height and of being folded when not in use with bracket for iron-rest, and spring metal clips secured to the under side of the ironing-board near the end, which has corners rounded off the board, being suitably covered with cotton or other material, and having cross-slats to prevent warping and afford rests for the free ends of one set of legs which are centrally pivoted on another set which are hinged to the bottom of the ironing board, substantially as specified. 2nd. An ironing-board A adjustable as to height and suitably covered, in combination with legs C hinged thereto at *e* and pivoted at *c* on legs D, rungs *g* and *h*, cross-pieces F, cross-slats E, F, G and H, strengthening strips *k*, spring clips K and bracket B, substantially as described and for the purpose specified.

No. 27,380. Fire-Escape. (*Sauveur d'incendie.*)

Richard Belches, Haymarket, Va., U.S., 9th August, 1887; 5 years.

Claim.—1st. The combination, with adjacent upper and lower rooms of a building, of a ladder arranged within a compartment

between said rooms, and means, substantially such as described, by which said ladder may be drawn from said compartment into the lower room, as set forth. 2nd. The combination, with the adjacent upper and lower rooms of a building, of a flexible ladder arranged within the space between the floor of one room and the ceiling of the adjoining room, and means such as a bolt connected to the ceiling of the lower room, whereby when said bolt is pulled a portion of the ceiling will be detached and the flexible ladder permitted to descend, substantially as described. 3rd. The combination, with the adjacent upper and lower rooms of a building, of a flexible ladder arranged within the space between the floor of one room and the ceiling of the adjoining room, means for entering the said compartment from the room above, and means such as a bolt connected to the ceiling of the lower room, and projecting into the latter, and serving as a means to detach a portion of the ceiling so as to liberate the ladder, as set forth. 4th. The combination, with the adjacent upper and lower rooms of a building, of a flexible ladder arranged in the space between the floor of one room and the ceiling of the adjoining room, means for entering said compartment from the room above, means such as a bolt connected to the ceiling of the lower room, and projecting into the latter, and serving as a means to detach a portion of the ceiling so as to liberate the ladder, and an alarm for indicating the disturbance of the ladder from either above or below. 5th. The combination, with the compartment, of which the ceiling of one room forms the bottom of the flexible ladder, the batten and the screw hook, 6th. The combination, with the compartment of which the ceiling of the lower room forms the bottom of the batten, the flexible ladder secured at one end indirectly or directly to the joists, and at the other end to the batten, and means substantially such as a bolt connected to the batten and projecting into the room below to effect a hold upon the ladder, and extend into the said room below. 7th. The combination, with the compartment of which the ceiling of the lower room forms the bottom of the batten, the flexible ladder secured at one end directly or indirectly to the joists, and at the other end to the batten, means substantially such as a bolt connected to the batten and projecting into the room below to effect a hold upon the ladder and the staff provided with the hook, substantially as described.

No. 27,381. Hot Air Furnace.

(*Calorifère à Air.*)

Francis Farquhar, Milton J. Farquhar and Henry B. Farquhar, Wilmington, Ohio, U.S., 9th August, 1887; 5 years.

Claim.—1st. The combination, in a heater, of a casing enclosing the ash chamber fire pot, and combustion chamber, and radiating flues arranged outside of and below the top of said casing, the upper flue communicating directly at one end with the side of the combustion chamber, and having a valve communicating with the smoke pipe, and the other end communicating with the lower flue, and the said lower flue having at its opposite end an opening for communicating with the smoke pipe, substantially as set forth. 2nd. The combination of the casing enclosing the ash pit, fire pot, and combustion chamber, the flues C, D, enclosing the casing and extending through a plate or wall U in front thereof, and communicating at one end through the pipe *n*, a smoke pipe communicating with both flues at the other end thereof, an opening *w* communicating with the upper flue adjacent to the smoke pipe, and a valve L arranged between the smoke pipe and opening *w*, substantially as set forth. 3rd. The combination of the walls J and plate U enclosing a chamber Z, a casing W enclosing an ash chamber, fire pot, and combustion chamber flues C, D, each of a U shape, with its ends extending through the plate U, and passing around the casing W, and arranged to leave an air space Z, and air inlet opening *r* arranged to direct the air entering the chamber Z against the lower flue, substantially as set forth. 4th. The combination, in a furnace, of a fire pot, an air chamber *v* and an air inlet thereto, a magazine supported above the fire pot, and provided with an air chamber *v* open at the lower end, and a communication between the chambers *u* and *v*, substantially as and for the purpose set forth. 5th. The combination of the casing W, fire pot lining S constructed to leave a chamber *u* between the lining and the casing partition *t*, air inlet upon one side of said partition, a flue *t* communicating with the chamber *u* at the other side of said partition, and a magazine provided with a chamber *v* open at the lower end and communicating with the flue *t*, substantially as set forth. 6th. The combination, in a heater, of a magazine having a chamber *v* open at the lower end, a fire pot having a chamber *u* surrounding the same and communicating with the chamber *v* and a flue *e*, communicating with the chamber *u* and extending through the outside of the heater and provided with a cover, substantially as set forth. 7th. The combination of the magazine having a surrounding air chamber opening at its lower end into the fire pot below, a fire pot having a surrounding air chamber, a flue connecting said chambers, and an air inlet communicating with the chamber which surrounds the fire pot, and all arranged to cause the air to flow to said latter chamber and around the fire pot, and thence to the chamber around the magazine, substantially as set forth. 8th. The combination, with a heater of a magazine, composed of two cylinders *h*, *h*₁ arranged to form an intervening air chamber, one of the cylinders being secured in a fixed position, and the other being provided with a flange by which it is rotably suspended within, and from a bearing on the fixed cylinder, and extending below the latter, substantially as and for the purpose set forth. 9th. The combination, with the top of the heater of a magazine, a shute communicating with the magazine and extending laterally therefrom above said top of the heater, a door closing the said shute and provided with a lining 3, and a tube extending from the highest point of the shute to the reservoir, substantially as and for the purpose described. 10th. The combination in a heater of the following elements, to wit; a fire pot, a surrounding air chamber the fire pot constituting one of the walls thereof, a flue magazine above the fire pot with an air chamber at its mouth opening into the fire pot, and an air flue connecting the said air chambers, substantially as set forth. 11th. The combination in a heater, a fire pot having a surrounding air chamber, the pot having a wall thereof, and inlets therefor at the base of the furnace, a magazine with surrounding air chamber at the mouth and a connecting flue extending through the combustion chamber above the fire, substantially as described.

No. 27,382. Spirally Formed Metal Pipe.*(Tuyeau Méallique en Spirale.)*

William S. Church and Hannah M. Root, (Administrators of the estate of John B. Root,) Rochester, N.Y., U.S., 9th August, 1887; 5 years.

Claim.—1st. The herein described process of making metal pipe, which consists in spirally winding a strip or blank of sheet metal into cylindrical form, with its opposite edges overlapping, bringing the overlapping edges only of the blank to a welding heat, and then welding such edges together by the application of pressure thereto, substantially as described. 2nd. The spirally formed metal pipe hereinbefore described, made by winding a blank spirally into cylindrical form, heating the overlapping edges of the blank by the application of heat to the edges only, and then welding such edges together by requisite pressure, substantially as described.

No. 27,383. Spiral Pipe Machine.*(Machine à tuyau en spirale.)*

William S. Church and Hannah M. Root, (administrators of the estate of John M. Root,) Rochester, N. Y., U. S., 9th August, 1887; 15 years.

Claim.—1st. In a spiral pipe machine, the combination of spirally reciprocating and clamping and welding mechanism for shaping the blank and uniting its edges, and a heating jet applied to the edges of the blank at their point of junction for bringing them to a welding condition. 2nd. In a spiral pipe machine, the combination of blank forming and welding mechanism, a heating jet and a furnace or other structure, arranged to confine the action of the jet to the parts of the blank to be welded together. 3rd. In a spiral pipe machine, the combination of spirally-reciprocating blank shaping and welding mechanism, a furnace or heating structure arranged to apply a welding heat to the edges of the blank at or near their point of junction, said shaping and welding mechanism and said furnace structure being provided with water passages for the purpose of keeping the parts cooled. 4th. In a spiral pipe machine, the combination of spirally-reciprocating blank shaping and welding mechanism, and a fixed former for shaping and supporting the blank. 5th. In a spiral pipe machine, the combination of spirally-reciprocating blank feeding and shaping mechanism, and a guide for giving the blank its proper inclination. 6th. In a spiral pipe machine, the combination of spirally-reciprocating pinchers, arranged and operated to seize the blank and carry it forward, and a guide for directing the blank into the machine at the proper inclination. 7th. In a spiral pipe machine, the combination of spirally-reciprocating pinchers, arranged and operated to seize the blank and carry it forward, and a guide located along the spiral path of the blank for directing and shaping the blank as it is fed forward. 8th. In combination in the herein described spiral pipe machine, the spirally-reciprocating pincher shaft carrying the blank pinching and shaping mechanism, a rotating driving shaft, and connections between said shafts, whereby the pincher shaft receives its circular reciprocating motion from the driving shaft. 9th. In combination, the spirally-reciprocating lever, pinchers borne upon the end of the pincher shaft, and the main shaft located within the pincher shaft and having connections with and for operating said pinchers. 10th. In combination, the spirally-reciprocating pincher-shaft carrying blank feeding and shaping mechanism, the fixed guide by which the shaft is made to move rectilinearly, the rotating main shaft and its connections with the pincher shaft through which said pincher shaft receives its circular reciprocating motion. 11th. In a spiral pipe machine, the combination of spirally-reciprocating blank clamping and shaping mechanism adapted to forming the blank cylindrically with its opposite edges overlapping, and a hammering mechanism arranged to operate upon the overlapping edges of the blank for the purpose of welding the same together. 12th. In a spiral machine, the combination of spirally-reciprocating blank-shaping mechanism, heating devices for bringing the edges of the blank to a welding condition, and hammering mechanism for welding such edges together. 13th. In a pipe machine, the combination of spirally-reciprocating blank-shaping lever jaws, oppositely-arranged hammers constructed to operate upon both sides of the blank for the purpose of welding the edges of the same together, and having spiral motion with said jaws, and heating devices for bringing the edges of the blank to a welding heat. 14th. In combination in the herein described spiral pipe machine, the spirally-reciprocating pincher shaft, the pincher levers and hammers borne thereon, the rotating main shaft, and the connections by which said pinchers and said hammers are operated from said main shaft. 15th. In combination, a machine for welding together the edges of pipe blanks, a blow-pipe furnace arranged to bring the edges of the blank to a welding heat, and an air heating device connected with said furnace and adapted to heat the air supplied to said furnace. 16th. In combination, the herein described pipe forming and welding machine, the blow-pipe furnace and the air-heating stove provided with the spiral air passage and heating lamp.

No. 27,384. Welding Machine.*(Machine à souder.)*

William S. Church and Hannah M. Root, (administrators of the estate of John M. Root,) Rochester, N.Y., U.S., 9th August, 1887; 15 years.

Claim.—1st. In a mechanism for welding sheet metal blanks together, the combination of a clamp for supporting the blanks, and holding them in position to be heated, blow-pipes for heating the edges of the blanks, and a furnace structure enclosing the blow-pipes and arranged to confine their action to the edges of the blanks, said blow-pipes and enclosing structure mounted upon travelling supports adapting them to be moved along the edges of the blank, substantially as described. 2nd. In a machine for welding sheet metal blanks together, the combination of a clamp for holding the blanks in position to be heated, a heating apparatus consisting of two halves composed of fire-brick constructed to enclose the edges of the blank, each half being arranged upon opposite sides of the blank, and mounted upon supports adapting the said halves to be moved to and

from the blanks, substantially as shown and described. 3rd. In a machine for welding sheet metal blanks together, the combination of a clamp for holding the blanks in position for heating, a heating apparatus consisting of two separate and movable parts or halves, each half being provided with a blow-pipe and being arranged upon opposite sides of the blank and mounted upon supports adapted such halves to be closed upon and swung away from the blank. 4th. In a machine for welding sheet-metal blanks together, the combination of a fixed clamp for holding the blanks in position to be welded, a hammering mechanism arranged to operate upon both sides of the blanks, and mounted upon travelling supports adapting it to be moved along the edges of the blank while operating to weld such edges, and stationary driving mechanism for operating said hammers and moving them along the blanks, substantially as described. 5th. In a machine for welding sheet-metal blanks together, the combination of a clamp for supporting the blanks and holding them in position to be operated upon, blow-pipes for heating the edges of the blanks, a furnace structure enclosing the blow-pipes and arranged to confine their action to the edges of the blanks, and hammering mechanism for welding the heated edges together, said heating and welding mechanism being carried on travelling supports adapted to move them across the blank, substantially as described. 6th. In a machine for welding sheet-metal blanks together the combination of a fixed clamp for holding the blanks in position to be operated upon, a furnace constructed to confine its heating action to the edges of the blanks, a hammering mechanism for welding the said edges together, travelling supports carrying said furnace and said hammers, and stationary driving mechanism for moving the furnace and hammers along the edges of the blanks and for operating the hammers, substantially as described.

No. 27,385. Shoe Fastening.*(Fermoir de soulier.)*

William M. Maxson, Henry Tucker and Charles M. Bauer, Akron, Ohio, U.S., 10th August, 1887; 5 years.

Claim.—The combination, in a shoe-fastening, of the strap having one end secured to the shoe below the meeting edges of the flaps, the strips A having their longitudinal central portions secured to the flaps near the meeting edges thereof, and the loops D having the openings b to receive the strap, and provided with the projecting tongues e and g for engaging with the free edges of the strips A, substantially as described.

No. 27,386. Combined Lock and Latch.*(Serrure-loquet.)*

John Sharpe and Jose A. Banfield, Toronto, Ont., 10th. August, 1887; 5 years

Claim.—1st. The combination, with a lock-case and spring latch of ordinary construction, of a single spindle connecting the inner and outer door-knobs, which spindle is adapted to be rigidly attached to the inner and outer knobs, as well as to permit the outer knobs to freely rotate axially without actuating the spindle, substantially as specified. 2nd. The combination of door-knob A, rigidly secured to the square end of the spindle E, and having a slot b formed in the shank thereof, together with pin B, recess c and slide D having lug q which is adapted to engage with the slot g¹ formed in the shank O of outer door knob P, and a corresponding slot g² in the cylindrical portion h of spindle E, so as to lock the outer knob to the spindle E which actuates a spring latch, substantially as specified. 3rd. The combination of door-knob A rigidly secured to the squared end of spindle E, and having slot b formed in its shank, together with pin J in circular recess q, pin B, recess c and slide D having lug q, which is adapted by the action of the pin B to become disengaged from the slot g¹ formed in the shank O of outer door, and a corresponding slot g² in the cylindrical portion h of spindle E, so as to permit the outer door-knob P to rotate freely on the cylindrical portion h of spindle E which actuates the latch without engaging with said spindle, substantially as specified. 4th. The combination, with an outer door-knob P, of knob cylinder L slotted to receive guard M with wards formed therein, cylinder tumbler N slotted at o and grooved to receive a key and slot t, lug K journalled in recess at cylindrical end h of spindle, and circular aperture in upper half of outer knob to receive reduced end of cylinder tumbler together with lug h¹ integral with spindle E, against which lug the key is adapted to engage after passing the wards in the guard M so as to rotate the spindle and unlatch the door, substantially as specified. 5th. A cylinder tumbler grooved axially, and with key-hole formed therein to receive a flat key, and journalled in a recess formed in the cylindrical end of spindle and in a circular aperture in the upper half of outer door-knob, so as to move freely in a cylinder formed in lower half of outer knob, slotted to receive a guard with wards which the key is adapted to pass, so as to engage with a lug integral with the spindle and cause it to rotate axially, so as to withdraw a lock from its haps, when a lug formed on a slide in spindle has been disengaged from a slot in shank of outer door-knob, and a corresponding slot in cylindrical end of spindle, substantially as specified. 6th. The combination of a spindle, connecting inner and outer door-knobs, of a recessed cylinder tumbler adapted to receive a key and journalled to move in a cylinder in outer knob guard, with wards, lug integral with spindle pin working in circular groove in cylindrical end of spindle, knob-rose slide with lug adapted to engage with and to become disengaged from slot in shank of outer knob, and slot in spindle when actuated by a pin passing through slide and adapted to rock in a recess in spindle, and inner door-knob rigidly attached to squared end of spindle having slotted shank for the pin which actuates the slide, the whole being arranged and operated to unlatch or unlock a door, substantially as described. 7th. The combination, with knob-cylinder L fixed in a slot in door and slotted to receive guard M with wards formed therein, of cylinder tumbler N suitably journalled to rotate in said cylinder and slotted at O and grooved to receive a flat key together with lug h¹ integral with spindle E against which lug the key is adapted to engage after passing the wards in guards M, substantially as described and for the purpose specified.

No. 27,387. Wood Screw. (*Vis à bois.*)

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 10th August, 1887; 15 years.

Claim.—1st. The wood-screw hereinbefore described having the unthreaded shank portion thereof, which connects the head and the screw-threaded portion, extending rearwardly from the core of the screw in a divergent direction, substantially as shown and set forth. 2nd. The improved wood-screw hereinbefore described, the same consisting of a screw-threaded portion terminating in a sharpened point, a head adapted to receive a screw-driver, and a tapering or cone-shaped shank connecting said head and screw-threaded portion, substantially as shown and set forth. 3rd. The improved wood-screw having the diameter of the shank at the intersection with the head, substantially the same as the outer diameter of the screw-thread, and tapering therefrom in a decreasing ratio to the root or core of the thread, for the purpose hereinbefore set forth.

No. 27,388. Shoe. (*Soulier.*)

Herman Behn, Rochester, Gottlob Bastian and Gertrude Blum, Dansville, (assignees of John Blum, Dansville), N.Y., U.S., 10th August, 1887; 5 years.

Claim.—The herein-described shoe, consisting of the woolen upper constituting in itself a complete foot-covering, the sole-leather sole united to the upper by stitching, as described, and the sole-leather counter, pegged or otherwise attached to the top side of the sole, and united to the outside of the upper by stitching around its upper edge, substantially as specified, whereby the entire interior of the shoe is left, substantially smooth, as described,

No. 27,389. Last for Boots and Shoes.

(*Forme de chaussure.*)

William R. Chase, Lynn, and Charles A. Shaw, Boston, Mass., U.S., 10th August, 1887; 5 years.

Claim.—1st. In a last for boots or shoes, the combination of a body, a block and a cord connecting said block and body, one end of said cord being attached to the body and the other to the block, and said last provided with an opening in its interior in which the main portion of said cord is disposed or housed when the block is seated, substantially as described. 2nd. In a last for boots or shoes, the combination of the following instrumentalities, to wit: a body, a block adapted to be seated on said body, and a cord connecting said block and said body, the body or main portion of said cord when the block is seated being disposed or housed partially in a hole extending lengthwise through said block, and partially in a groove in the interior of the last, one end of said cord being secured to the rear portion of said body, and the other protruding through the rear or outer end of said hole, and provided with a knot or means of preventing it from being accidentally pulled into said hole, substantially as described. 3rd. In a last for boots or shoes, the body A provided with the hole *b*, the block B, provided with the hole *f* and groove *z*, and the cord D provided with the knots *l*, combined and arranged to operate substantially as specified. 4th. In a last for boots or shoes, the block B provided with the hole *f* and groove *z*, in combination with the string D inserted in said hole, and having one of its ends provided with the knot *l*, and the other secured to the rear portion of the body A, substantially as described.

No. 27,390. Head Rest for Railway Carriages, &c. (*Appui-tête pour voitures de chemins de fer, etc.*)

John W. Campbell and John F. Logan, Toronto, Ont., 10th August, 1887; 5 years.

Claim.—1st. An adjustable head rest adapted to be attached to the back of a seat, having an adjustable supporting strap connected at each side to the cushioned end of the rest, and held in place by the weight of the user who sits on said supporting strap, substantially as specified. 2nd. An adjustable head rest adapted to be attached to the back of a seat, having an adjustable supporting strap connected at each side to the cushioned end of the rest, and passing under the seat of the user who sits thereon, and having adjustably attached to said supporting strap loops which form arm rests, substantially as specified. 3rd. The combination, with the back of a seat, of lower standard B, having sleeve *b* for lower end of the upper standard C, and adapted to receive in an elongated slot *h* thumb-screw H which adjustably binds the upper standard C to said lower standard, the lower portion of said standards forming jaws which grip the back of seat together with the frame C, air cushion D having screw-nozzle *d*, the side straps E and seat strap G, substantially as specified. 4th. The combination, with the back of a seat, of lower standard B and upper standard C sleeved thereon, the lower portions of said standards forming jaws which grip the back of said seat, the upper standard being held adjustably in position by means of thumb-screw H which passes through said standards, together with the air cushion D suitably attached to said upper standard and provided with means for inflating said cushion the side straps E, having lugs *e* attached thereto arm rests F and seat strap G, substantially as described and for the purpose specified. 5th. The combination, with the back of a seat of lower standard B, and upper standard C, sleeved thereon, adapted to be attached to the back of said seat, and held adjustably in position the upper standard C to which is suitably attached the cushion D, together with the side straps E, lugs *e*, arm rests F, and seat strap G, substantially as specified.

No. 27,391. Carburetor. (*Carburateur.*)

Ferdinand Weil, New York, N.Y., and Joseph Bernheim, Menominee, Mich., U.S., 10th August, 1887; 5 years.

Claim.—1st. A carburetor having a central reservoir chamber, an annular absorbent chamber surrounding the reservoir, and rising substantially as described to the highest level of the reservoir, an air pipe and valve for transferring from the reservoir to the absorb-

ent chamber, and an inlet and outlet pipe for gas connecting with the absorbent chamber above the level of the reservoir, substantially as shown and described. 2nd. In a carbureting apparatus, the combination of the vessel A, the wall A' extending from the top nearly to the bottom and forming an annular outer chamber, and an inner reservoir chamber communicating with each other at the bottom, the said inner chamber being provided with a horizontal partition with valve and air pipe for transferring the contents of the reservoir above to the space below, and the said annular chamber being provided with an absorbent, substantially as and for the purpose described. 3rd. In a carbureting apparatus, the combination of the vessel A, the wall A' extending from the top nearly to the bottom and forming an annular outer chamber, and an inner reservoir chamber communicating with each other at the bottom, the said inner chamber being provided with a horizontal partition forming a reservoir above, with valve and air pipe for transferring the contents to the space below, the pipes G, H connecting diametrically with the opposite sides of the annular chamber, the casing H with pipes I, J connecting with said pipes, and located centrally above the carburetor and the four-way cock J, substantially as shown and described.

No. 27,392. Check Valve. (*Souape de détente.*)

William T. Messinger, Cambridge, Mass., U.S., 12th August, 1887; 5 years.

Claim.—1st. The valve casing provided with a raised or projecting valve seat, combined with a valve composed of a rigid ring or frame, and yielding disk fixed at its edges therein, and acted upon within its edges by the fluid controlled by the valve, substantially as described. 2nd. A check valve composed of a casing or chamber having an inlet passage terminating in a valve seat, combined with a valve comprising a ring provided with guide projections longer than the width of the ring co-operating with said chamber, the space between the said guide projections permitting the flow of fluid when the valve is unseated, substantially as described. 3rd. The casing or chamber having an inlet passage terminating in a valve seat, combined with the valve consisting of a ring provided with projections engaging and guided by the inner wall of the chamber, and a yielding disk confined at its edges in the said ring and having its surface exposed to the pressure of the fluid controlled by the valve, substantially as described. 4th. The valve casing provided with a raised or projecting valve seat, and a valve comprising a ring or frame arranged in said casing, and provided with guide projections longer than the width of the ring, and co-operating with the said casing the space between the said guide projections, permitting the flow of fluid when the valve is unseated, combined with a coupling serving to limit the movement of the valve in one direction, substantially as described.

No. 27,393. Parasol and Umbrella Handle and Fan Attachment. (*Manche avec éventail pour parasol et parapluie.*)

Ida L. Myers, Sherman, Texas, U.S., 12th August, 1887; 5 years.

Claim.—1st. A combined handle and toilet case, consisting of a hollow case having a spring cover provided on its inner face with a mirror, the inside of the case having curved side partitions holding face powder and pads, the central portion formed for the reception of visiting cards held to a mat by a curved spring, substantially as and for the purpose set forth. 2nd. A combined hollow parasol, umbrella handle and toilet case, consisting of an ornamental hollow case having an end opening for the reception of a parasol or umbrella stick, its opposite end provided with a rigid extension ring, a hinged cover provided with a mirror on its inner face, and working against the tension of a coiled spring, an end lip to said cover to contact with end spring secured to said case, the internal portion of said case divided to receive visiting cards, face powder pads, a curved spring and cloth lining, substantially as shown and specified.

No. 27,394. Tile Kiln. (*Four à tuile.*)

Jacob Gearhard, New Salem, Ind., U.S., 12th August, 1887; 5 years.

Claim.—1st. In a tile kiln, a series of parallel furnaces resting on a sub-base, a part of them having openings outwardly at one side of the kiln, with the flues therefrom passing upward oppositely within the walls of the kiln near the top, the remaining alternating furnaces having openings on the opposite sides of the kiln, with corresponding flues oppositely on the inner side within the walls of the kiln, the sub-base of the kiln provided with openings connected with the smoke-stacks, so that the heat from the furnaces after passing through the flues will disseminate itself downwardly through the tile outwardly, substantially as herein set forth. 2nd. In a tile kiln, a series of furnaces and flues, the alternating furnaces formed with openings outwardly at one side of the kiln, and each connecting flue disposed oppositely within the kiln, the other furnace formed with openings outwardly in the opposite side of the kiln, and the flues on the inner side of the kiln oppositely from the entrances of the furnaces, so that the heat from the furnaces may operate on the tile by radiation, and by direct contact in its downward passage through the tile, thence escaping into the space beneath the arch of the kiln, and thence outwardly through the smoke-stacks laterally from the furnaces, substantially as herein set forth. 3rd. In a tile kiln formed with a sub-base or arch, so as to form a space beneath the furnaces and flues, so that the steam and gases from the tile may be received therein through vertical openings from the body of the kiln, and thence pass off through a series of openings through the wall of the kiln, while the smoke may be regulated in its passage through the horizontal space into the smoke-stacks by means of dampers, so as to prevent the tile from being cracked in burning, substantially as herein set forth. 4th. The combination of a series of parallel furnaces and flues, each alternate furnace having an opening outwardly at one side of the kiln, with a vertical flue oppositely on the inner side of the kiln and the other flue having an opening outwardly at the opposite side of the kiln, and a vertical flue on the inner side oppositely, with a series of transverse grate bars resting upon the said

furnaces, the whole resting upon a sub-base, substantially as herein set forth. 5th. The combination of a series of furnaces and corresponding flues, each alternate furnace and flue oppositely disposed, as shown, and a series of transverse grate bars resting upon the furnaces with the sub-base formed with a series of openings therein forming communication with the apartment beneath, substantially as herein set forth. 6th. The combination of a series of parallel furnaces and vertical flues, oppositely disposed as shown, the transverse grate bars and the sub-base having vertical openings therein, with the apartment beneath the sub-base having lateral flues communicating with the smoke-stack, substantially as herein set forth. 7th. The combination of a series of parallel furnaces I and K, the vertical flues J and L, the grate bars M, the sub-base F, the vertical openings N through the base, the horizontal flues G and the smoke-stacks laterally, the whole arranged as and for the purpose substantially as herein set forth and described.

No. 27,395. Construction of Gas Lamps.

(Fabrication des lampes à gaz.)

David W. Sugg, Westminster, Eng., 12th August, 1887; 5 years.

Claim.—1st. A gas lamp body, constructed in one piece as above described, and consisting of an inverted annular trough connected by two hollow arms with a chimney, and provided externally with a perforated rib or flange, all substantially as and for the purpose set forth. 2nd. The mode of producing the deflectors E, namely, making a rope of fire clay with a core of asbestos fibre, and submitting pieces of the rope to pressure in a mould, and then firing the moulded fire clay, substantially as and for the purpose set forth.

No. 27,396. Temperature Alarm System.

(Thermomètre à sonnerie.)

Albert E. Morrison, Charlottetown, P. E. I., 12th August, 1887; 5 years.

Claim.—1st. In a temperature electric-signal system, the combination of a thermostat and two electric circuits, each containing an electric signal and said thermostat, the said thermostat consisting of a thermometer, the mercury in whose bulb constitutes one terminal of said circuits, and contact points located at different heights in the stem of said thermometer constituting the other terminals of said circuits. 2nd. In a temperature alarm system, the combination of a central annunciator located in the office of a hotel or similar building, a fire alarm, electric bell, or similar signal located in the city fire department, thermostats located in the room or halls of said building, and two electric circuits, the one including said annunciator and normally open at all temperatures below a contact point fixed at say 65 degrees, or summer heat, the other including said bell and normally open at all temperature below a contact point normally adjustable at a higher temperature, substantially as described. 3rd. In a temperature alarm system, the combination of a central annunciator located in the office of a hotel or similar building, a fire alarm, electric bell, or similar signal located in the city fire department, two electric circuits, the one including the said annunciator and thermostat, and the other including said bell and said thermostat, the said thermostat consisting of the combination of a thermometer whose mercury or other fluid constitutes the terminals of both circuits, and whose tube contains the other terminals, one of which is fixed at a certain degree, say summer heat, and the other of which is adjustable at a higher degree, and is provided with a suitable locking device, as and for the purpose described. 4th. In a temperature alarm system, a thermostat consisting of a thermometer bulb and tube, a base plate therefor, a rod adjustable in said tube, a ring upon the upper end of said rod, a projection provided with holes adjacent to said ring and secured to said base plate, a locking device connecting said ring and said projection, and an electric signal circuit normally open and including said rod and the mercury of said thermometer, substantially as described.

No. 27,397. Tanner's Apron Support.

(Support de tablier de tanneur.)

Anthony V. Manley, Norwich, N. Y., U. S., 12th August, 1887; 5 years.

Claim.—1st. In an apron-support, the combination of the spring uprights to yield to the motions of the operator, and a cross-bar secured to the uprights and adapted to have an apron suspended therefrom, said apron being suspended from the cross bar and disconnected entirely from the uprights, substantially as described. 2nd. An apron-support consisting of the yielding upright adapted to be secured to a floor, and a vertically adjustable cross bar from which an apron is to be suspended, detachably connected to the uprights, substantially as described. 3rd. An apron support consisting of the flexible yielding supporting-uprights adapted to be secured to a floor, and cross-bar connecting the uprights and adjustably mounted thereon, said bar being adapted to be adjusted by means substantially as described, and held to an angle to the uprights and have an apron suspended therefrom, substantially as described. 4th. The combination of the hinged flexible uprights, an adjustable cross-bar connecting the same, and an apron suspended from the cross-bar, substantially as described. 5th. The combination of the supports, the flexible standards pivoted thereto, the brackets secured on the standards, and an adjustable cross-bar mounted in the brackets and having an apron suspended therefrom, substantially as described. 6th. The combination of the uprights, the brackets, a cross-bar having slotted arms, a clamping-screw G passing through each arm and entering the uprights, and an adjusting screw H mounted in the lower ends of the arms of the cross-bar, substantially as described. 7th. The combination of the main supporting-frame, the apron suspended therefrom, the supports having the supports having the perforated ears or lugs, and the pivot-pins for connecting the supports and frame together pivotally, substantially as described.

No. 27,398. Bee Hive. (Ruche.)

David Chalmers, Poole, Ont., 12th August, 1887; 5 years.

Claim.—1st. The movable side or end B B, substantially as and

for the purpose hereinbefore set forth. 2nd. The combination of the groove E E, and iron slides F, F, substantially as and for the purpose hereinbefore set forth.

No. 27,399. Sand Paper Cylinder.

(Tambour à papier de verre.)

James L. Perry, Watertown, Wis., U. S., 12th August, 1887; 5 years.

Claim.—1st. In a sand-paper cylinder, the combination of a barrel and its heads, and disks having eccentric-slots and teeth upon a portion of their peripheries, and pinions adapted to mesh with said teeth with draw-bolts and their pins, as set forth. 2nd. The combination, with the barrel and its heads, and the disks having slotted toothed segments, as described, of shafts F and its pinions and draw-bolts and their pins.

No. 27,400. Covering for Meats.

(Enveloppe pour les viandes.)

Edward Metzger, Pittsburg, Penn., U. S., 12th August, 1887; 5 years.

Claim.—1st. A covering for meats consisting of a layer of membranous paper enveloping the meat, and lays of paper enveloping the membranous paper and secured together by an adhesive paste, substantially as and for the purposes described. 2nd. A covering for meats, consisting of a layer of membranous paper enveloping the meat, and layers of paper enveloping the membranous paper, and secured together by an adhesive paste the outside layer being seized, substantially as and for the purposes described. 3rd. A covering for meats, consisting of layers of paper enveloping the meat, and secured together by an adhesive, the outside layer being seized with silicate of soda, substantially as and for the purposes described. 4th. A paper covering for hams, in combination with a cord holding the ham inside the covering, and projecting outside thereof, and a button covered by the covering and encircling the cord, substantially as and for the purposes described.

No. 27,401. Joint for Gas and other Mains.

(Manchon pour tuyaux à gaz et autres.)

Edmund C. Converse, Allegheny, Penn., U. S., 12th August, 1887; 15 years.

Claim.—1st. In joints for gas and similar mains, the combination of a cast metal inner shell, provided with locking seats for engaging with the tube sections, and an outer wrought metal shell fitting around and extending beyond the inner shell to form calking recesses, substantially as and for the purposes set forth. 2nd. In joints for gas and similar mains, the combination of a cast metal inner shell, provided with means for engaging with the tube sections, and an outer wrought metal shell fitting around and shrunken upon the inner shell, and extending beyond the same to form calking recesses, substantially as and for the purposes set forth. 3rd. In joints for gas and similar mains, the combination of the inner cast metal shell, having the locking recesses *b* for engaging with the tube sections, and the bevelled ends *l*, the outer wrought metal shell fitting around the inner shell, and having the inwardly flaring portions *k* extending beyond the same, substantially as and for the purposes set forth. 4th. In tube joints, the combination, with tubing having one or more lugs or other connecting devices at or near the ends thereof, of a coupling collar having an inner central face or faces, locking seats formed entirely within said face or faces, and calking recesses beyond said inner faces, substantially as and for the purposes set forth.

No. 27,402. Band Device for Running the Spindles of Spinning Machines.

(Appareil à eourroie pour actionner les bobines des machines à filer.)

Arthur McDonald, Holyoke, Mass., U. S., 12th August, 1887; 5 years.

Claim.—1st. The spindles 5, provided with the usual whirrs *c*, the shaft 4 having thereon the driving pulleys *a*, the guide pulleys 6, the endless spindle-driving band 17 passing around said driving-pulleys, driving pulleys, and spindle-whirrs, combined with the idler-pulley 20 and its supporting devices consisting of the rack 19, the shafts 22 having a pinion engagement with said rack, and the spring 23, substantially as set forth. 2nd. In combination, the driving shaft having thereon suitable spindle-driving pulleys, the spindles 5 provided with suitable whirrs, the guide-pulleys 6, the idler-pulley 20 and an endless driving band 17 engaging with said idler-pulley, and passing around said guide-pulleys, driving-pulleys and spindle-whirrs, substantially as set forth. 3rd. The spindle-driving shaft 4, provided with the gear *e*, the driving-shaft 8 having a groove 14 therein, the shaft 7 having a geared engagement with said gear *e*, combined with the gears 10 and 12 on said shaft 8, either one of which may be engaged with a pinion on said shaft 7, substantially as set forth.

No. 27,403. Cuff. (Poignet.)

Walter Kahler, Drummond, Wis., U. S., 12th August, 1887; 5 years.

Claim.—1st. In a cuff adapted to be sustained in place by the coat-sleeve, the button-holes *b*, *bi* formed at one end of the cuff, and the button-holes *c*, *d*, *e* and *f* at the other end, all arranged substantially as described, whereby the cuff is rendered reversible. 2nd. A cuff constructed with inward curved edges, and provided at one end the button-holes *b*, *bi*, and at the other end with the button-holes *c*, *d*, *e* and *f*, substantially as set forth.

No. 27,404. Cigar. (Cigare.)

George H. Beaudoin, Cornwall, Ont., 12th August, 1887; 5 years.

Claim.—1st. A cigar, provided with a cap or sheath around its mouth end, for preventing the unwinding of the casing strip, substantially as shown and described. 2nd. The combination of a cigar having both of its ends opened or uncovered by the casing, with the cap C provided with the spike D for holding said cap in place on the mouth end of the cigar, substantially as shown and described.

No. 27,405. Construction of Umbrellas and Parasols. (*Fabrication des parapluies et parasols.*)

Edwin B. Gaze, London, Eng., 12th August, 1887; 5 years.

Claim.—In umbrellas and parasols, the removable attachment or cap E passing over or fitting on to the end of each rib, whereby the cover is secured to the ends of the said ribs in a simple and efficient manner, in combination with the elongated screwed ferrule B, notch piece B, dome C and clip D, substantially as and for the purposes set forth.

No. 27,406. Cotton Waste Picker.

(*Eplucheur des déchets de coton.*)

James P. Hillard and William H. Goldsmith, Fall River, Mass., U.S., 12th August, 1887; 15 years.

Claim.—1st. In combination, an imperforate hollow cylinder, a series of fixed spines upon the internal walls of said cylinder, a rotary shaft disposed in the line of the major axis of said cylinder, a series of fixed beaters or arms arranged upon said shaft, and coacting with said spines. 2nd. In combination, an imperforate hollow cone cylinder, a series of short fixed spines upon the interior walls of said cylinder, and projecting towards the major axis thereof, a rotary shaft disposed in the line of said major axis, a series of graduated fixed radial beaters, and a set of fans arranged upon said shaft, said beaters and fans coacting with said spines, substantially as described. 3rd. In combination, a hollow truncated cone cylinder, provided with feed inlet and an outlet, said cylinder divided on its longitudinal centre, a series of fixed spines arranged upon the interior walls of said cylinder in longitudinal lines, a rotary shaft disposed in the line of the major axis, and provided with a longitudinal groove, a series of graduated fixed radial beaters, and a set of fans set upon said shaft, a toothed drum keyed upon said rotary shaft adjacent to said feed inlet, substantially as described. 4th. In combination, a series of hollow truncated cone cylinders, disposed with their major axis horizontal, and parallel communicating passages between said cylinders, said cylinders halved longitudinally, and provided with internal fixed spines, disposed in longitudinal lines, a rotary shaft lying in the line of the major axis of each cylinder, and provided with a series of graduated radial beaters, and a set of radial fans, the initial cylinder provided with a feed inlet and the terminal cylinder provided with an exit, a supporting frame for said parts, substantially as described.

No. 27,407. Manner of Lowering Persons from Buildings. (*Sauveteur d'incendie.*)

Henry G. Powell, London, Eng., 13th August, 1887; 5 years.

Claim.—1st. The combination, with an article of furniture, of the rope C and the body band *h*, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with the rope C and the body band *h*, of the rope box *d*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the rope C and the body band *h* and the rope box *d*, of the class receiver *l*, substantially as and for the purpose hereinbefore set forth. 4th. The combination, with the rope C, and the body band *h*, and the rope box *d*, and the glass receiver *l*, of the brake *g*, substantially as and for the purpose hereinbefore set forth. 5th. The combination, with the rope C, and the body-band *h*, and the rope box *d*, and the glass-receiver *l*, and the brake *g*, of the folding sill flaps *a, r*, substantially as and for the purpose hereinbefore set forth. 6th. The combination, with the rope C and the body band *h*, and the rope box *d*, and the brake *g*, of the traveller *n*, substantially as and for the purpose hereinbefore set forth. 7th. The combination, with the rope C, and the body-band *h*, and the rope box *d*, and the glass-receiver *l*, and the brake *g*, and the traveller *n*, of the chair foot hooks *J, I*, substantially as and for the purpose hereinbefore set forth.

No. 27,408. Harrow. (*Herse.*)

Ernst von Diest, Plauticon, Germany, 13th August, 1887; 5 years.

Claim.—The combination, in a harrow, of the chains *m, n*, the beams *a, b, c*, and the links *g, g*, with the smaller harrows *d, d*, having frames *i, h, h* and teeth *j*, being attached by links *q, q* to the beams *a, b, c*, and constructed and used substantially as and for the purpose set forth.

No. 27,409. Rotary Churn. (*Baratte rotatoire.*)

Charles M. Donelson, Salt Lake, Utah, U.S., 13th August, 1887; 5 years.

Claim.—1st. In a churn mechanism, the combination of the casting B, formed with bearing C, the downwardly-extending portion E having a cavity therein, provided with the annular groove I, and chamber K with the shaft M, bevelled pinion F having the shank H, bevelled gear wheel G and shaft D, substantially as described. 2nd. In a churn, the combination, with the body provided with the sockets P, of the legs Q, having the shoulders R, and the screw-rods S for clamping them tightly against the churn body, substantially as set forth. 3rd. In a churn, the combination of the bands or rods T, which have their lower ends to extend under and around the chimes, of the churn body, the screw-rods U, which have their lower ends flexibly and removably connected to the upper ends of the bands T, and provided at their upper ends with thumb-nuts, with the lid provided with the slotted plates N, substantially as specified.

No. 27,410. Bevel. (*Fausse-équerre.*)

Frank E. Witter, Canterbury, Conn., U.S., 13th August, 1887; 5 years.

Claim.—1st. The combination, with the body A, having end plates B provided with circular projections *b*, of the circular thumb nut F, screw bolt G and slotted blade, substantially as shown and described,

whereby the said thumb-nut is protected by said circular projections and held from interference with the use of the tool, as set forth. 2nd. The combination, with the body A, having bevelled edges *a* and concaved ends *a*, and end plates B bevelled to correspond with said said body, and provided with circular projections *b*, of the circular thumb nut F, having smooth faces, the screw-bolt G adapted to hold said thumb-nut between said circular projections *b*, the slotted blade D and a top plate covering said blade, substantially as shown and described. 3rd. The combination, with the body A, constructed substantially as described, having end plates B provided with circular projections *b*, circular thumb-nuts F, with smooth faces, held between said projections by screw bolts G, and a slotted blade D pivoted at one end of said body, of the top plate C having bottom and top offsets *c* and *d*, and a short blade E pivoted on said plate at the end of the bevel opposite said slotted blade D, substantially as shown and described and for the purpose herein set forth. 4th. The combination, with the body A, constructed as herein described, having end plates B, provided with circular projections *b*, circular thumb-nuts F, having smooth faces held between said projections *b* by screw-bolts G, and a slotted blade D pivoted to one end of said body, of the top plate C, having top and bottom offsets *c* and *d*, and a recess to receive a depression in the short blade of the bevel, at its intersection with the screw-bolt G, gauges H ranging to the right and left and intersecting each other on the upper face of the plate C, and the short blade E pivoted on the plate C at the end opposite the slotted blade D, said blade D having formed in it at its point of intersection by the screw bolt G, a depression entering the recess in the plate C, substantially as shown and described and for the purposes herein set forth.

No. 27,411. Apparatus for Roasting or Popping Grain. (*Appareil pour torréfier les grains.*)

Alexander W. Gillman and Samuel Spencer, Southwark, Eng., 13th August, 1887; 5 years.

Claim.—1st. The combination of rotating sheet-iron cylinder *a*, containing sand wire gauze or perforated sheet metal cylinder *b*, and screw or worm *c*, blades or lifters *d*, grooved rings *a*, toothed rings *a*, supporting rollers or wheels *e*, driving pinion *f*, end plates *a*, *a*, furnace *g*, feed tube *h*, exhaust tube *i*, discharge apertures *a*, and hinged doors or covers *a*, substantially as herein shown and described and for the purposes stated. 2nd. The combination of sheet metal cylinder *a*, containing sand, wire gauze, or perforated sheet metal cylinder *b*, and worm or screw *c*, mounted in a furnace *g*, said cylinders being provided with end plates *a*, *a*, feed tube *h*, exhaust tube *i* and discharge apertures *a*, substantially as herein shown and described and for the purpose stated.

No. 27,412. Apparatus for Signalling Policemen. (*Appareil pour faire les signaux aux policiers.*)

William C. Smith and James P. Brewer, New Haven, Conn., U.S., 13th August, 1887; 5 years.

Claim.—1st. An apparatus for communicating with policemen while on their beats from a directing station, consisting in electromagnetically operated visual signals, distributed throughout a field under surveillance, a common directing station and electrical connections between such signals and the directing station, substantially as set forth. 2nd. An apparatus for communicating with policemen while on their beats, from a directing station, consisting in visual distributed throughout a field under surveillance and adapted to be electrically operated, electrical connections between the signals and a directing station, annunciating apparatus located at the station and connected with the field, and telephonic or equivalent means of communication between the station and the field, substantially as set forth. 3rd. An apparatus for communicating with policemen while on their beats from a directing station, consisting of visual signals distributed throughout a field under surveillance, and adapted to be electrically operated, electrical connections between the signals and the directing station, call boxes and telephones located in said connections, and annunciating and telephonic apparatus located at the directing-station and connected with the said call-boxes and telephones, substantially as set forth. 4th. An apparatus for communicating with policemen while on their beats from a directing station, consisting of visual signals distributed throughout a field of surveillance, and adapted to be electrically operated, electrical connections between the signals and the directing-station call-boxes, and telephones located in such connections, annunciating and telephonic apparatus located at the station, light batteries for operating the said annunciating apparatus, and a heavy battery for operating the signals and switched into circuit upon occasion, substantially as set forth. 5th. An apparatus for communicating with policemen while on their beats from a directing station, consisting of visual signals employing colored lights distributed throughout a field under surveillance, and adapted to be electrically operated, a common directing station, and electrical connections between the signals and the directing station, substantially as set forth. 6th. An apparatus for communicating with policemen while on their beats from a directing station, consisting of visual signals employing colored shades, adapted to be electrically operated and applied to street lamps distributed throughout a field under surveillance, a common directing station for such signals and electrical connections between the signals and the directing station, substantially as set forth. 7th. A visual signal, consisting of a movable globe, a burner, electrically-controlled mechanism for keeping the globe in normal retirement, and weights for operating the globe to inclose the burner when it is released through the said mechanism, substantially as set forth. 8th. A visual signal, consisting of a globe attached to a fixture located upon a movable tube inclosing the supply pipe of a gas-burning street lamp, a burner, a latch engaging with the tube for holding the globe without the range of such burner, electro-magnets and an armature for controlling the latch in its engagement with the tube, and means for raising the tube for inclosing the burner by the globe, substantially as set forth.

No. 27,413. Machine for Making Tubes.*(Machine à faire les tubes.)*

Edward K. Coas, Gloucester, Mass., U.S., 13th August, 1887; 5 years.

Claim.—1st. The machine, substantially as specified, composed of the mandrel, provided with mechanism for supporting it, revolving it transversely, and moving it endwise, as described, the two strip-guides and the soldering tank, and its furnace arranged with such mandrel and to operate therewith, essentially as set forth. 2nd. The combination of the mandrel, provided with mechanism for supporting it, revolving it transversely, and moving it endwise, as described, with the two strip-guards and the soldering tank and its furnace, with the auxiliary tank arranged with and to extend below the main tank, such tanks being furnished with a tube or duct for discharging solder from the main into the auxiliary tank, substantially and for the purposes as set forth. 3rd. The combination of the mandrel, provided with mechanism for supporting it, revolving it transversely, and moving it endwise, as described, the two strip-guards and the soldering tank and its furnace, with the air-blower and its duct arranged and to operate with the said mandrel, substantially as set forth. 4th. The mandrel, essentially as described, composed of the hinged and rabbeted sections *a* and *b*, and the dovetailed and tapering section *c*, arranged as represented, and having to the latter section mechanism for moving it endwise between the others, as set forth. 5th. The combination of the mandrel, provided with mechanism for supporting it, revolving it transversely, and moving it endwise, as described, the two strip guides and the soldering-tank and its furnace, with supplementary means of heating the mandrel, and for the purposes specified.

No. 27,414. Feed Rack. (Râtelier d'étable.)

James R. Logan, Fargo, D.T., U.S., 13th August, 1887; 5 years.

Claim.—A feed rack for mangers, provided with a frame A, having lugs E integral with the outer lower horizontal edge, spring-actuating doors B, B, hinged to said frame, a space D intervening said doors at the top, and the said doors adapted to open inward only, substantially as shown and described for the purposes herein set forth.

No. 27,415. Receptacle for Ink, etc.*(Ecrivoire, etc.)*

Robert Marshall, Hamilton, Ont., 13th August, 1887; 5 years.

Claim.—1st. The combination, with a series of receptacles or fountains B, C, D, provided with lids or covers of levers or connections communicating with said lids, said levers or connections being made to operate by the opening of one lid to close the other lids, substantially as set forth. 2nd. The combination, with a series of receptacles or fountains, provided with lids or covers, of lid levers communicating with said lids, and closing levers connecting each lid lever with all the remaining lid levers, substantially as set forth.

No. 27,416. Carpet Lining. (Doublure de tapis.)

Charles H. Cole, Little Rock, Ark., U.S., 13th August, 1887; 5 years.

Claim.—1st. A carpet lining having oblique corrugations, and adapted to fold from either side, the side portions being of an aggregate width of the central portion, as and for the purposes set forth. 2nd. A carpet lining having transverse corrugations, and perforations, the lining adapted to fold from either side to form two layers in thickness, as and for the purpose set forth. 3rd. A corrugated carpet lining having perforations, the corrugations being mutilated transversely to allow the lining to fold into two layers in thickness, as and for the purpose set forth.

No. 27,417. Elliptic Spring. (Ressort elliptique.)

Thomas B. Chase, New York, and Elisha R. Wheelock, Brooklyn, N.Y., U.S., 13th August, 1887; 15 years.

Claim.—1st. The combination of the parts A, A, of an elliptic spring having hooked ends and oblong slots therein, nuts E, tension rods C and spring F, substantially as described. 2nd. The combination of leaves A, A, of an elliptic spring having hooked ends, and oblong slots therein, with tension rods C, C, spring F and nuts E having concave inner surfaces, substantially as described. 3rd. The combination of an elliptic spring, a leaf or leaves of which is composed of a plate or plates, longitudinally corrugated in the form of three reversed curves, with an auxiliary longitudinally expanding spring connected to the united ends of the upper, and lower parts of the elliptic spring by means of tension rods, substantially as described. 4th. The combination, with the upper and lower parts of an elliptic spring, a leaf or leaves of which is composed of a plate or plates longitudinally corrugated throughout their length, in the form of three reversed curves, of a spiral spring connected by two tension rods to the points of union of the upper and lower parts of the elliptic spring, said rods overlapping each other at their inner ends, and each passing centrally through the spiral spring, substantially as described.

No. 27,418. Railway Car Wheel.*(Roue de wagon de chemin de fer.)*

George Palmer, Littlestown, Penn., U.S., 15th August, 1887; 5 years.

Claim.—1st. The combination, with a car wheel, of an auxiliary yielding flange, provided with a segmental detachable section, whereby the said section may be applied to the wheel without being removed from the frame or truck, substantially as described. 2nd. The combination, in a yielding detachable flange for car wheels, consisting of two or more sections, said sections having projecting

flanges forming a cup for the reception of elastic bearings to prevent undue lateral play of the bolts, substantially as set forth.

No. 27,419. Telephone Register.*(Régistre de téléphone.)*

The Canadian Telephone Register Company (assignee of Charles Wittenberg), Indianapolis, Ind., U.S., 15th August, 1887; 5 years.

Claim.—1st. That improvement in telephone registers, which consists in the combination with the actuating mechanism of the register of an electro-magnet arranged in the telephone line circuit, a movable part of the telephone apparatus as the switch-lever by which the telephone is connected with the line, and intermediate mechanism connecting said movable part with the actuating mechanism of the register, whereby said actuating mechanism is moved in one direction by said electro-magnet, and moved in the opposite direction by the movement of said movable part of the telephone apparatus, and the carrying forward of the register becomes the result of the concurrent action of the user of the telephone at a subscriber's station and the operator at the exchange station, substantially as specified. 2nd. In a telephone register, the combination of a telephone apparatus, and a step by step registering mechanism, of an actuating bar arranged to have a reciprocating movement, whereby said registering mechanism is actuated an electro-magnet arranged to attract and move said actuating bar in one direction, and a movable part of the telephone apparatus as the switch-lever arranged to move the actuating bar in the opposite direction, substantially as specified. 3rd. In a telephone register, the revolvable indicating disk, the ratchet wheel arranged to revolve with said disk, the sliding actuating bar carrying a pawl arranged to engage said ratchet wheel, an electro-magnet arranged to attract and move said actuating bar, and thereby set the parts preparatory to carrying the register forward one point, the telephone receiver, the lever arranged to support the telephone receiver and intermediate mechanism connecting said lever and said actuating bar, all combined and arranged to co-operate as specified, whereby the registering mechanism is set by the action of the electro-magnet and the register is carried forward one point by the weight of the telephone receiver. 4th. The combination, with an electric circuit, two or more stations located in said circuit, and a telephone apparatus also located in said circuit, of a registering mechanism also connected with said electric circuit, and located at one of said stations, and adapted to be operated from the other station, substantially as specified.

No. 27,420. Lamp Post and Signal.*(Poteau de lampe et signal.)*

William C. Smith and James P. Brewer, New Haven, Conn., U.S., 15th August, 1887; 5 years.

Claim.—1st. The combination, with a lamp post having a box forming its central section, a standard forming its lower section, and a hollow top forming its upper section the lower end of the said box being connected with the upper end of the standard, and the lower end of the said hollow top being connected with the upper end of the said box, of a signaling apparatus located in part in the said box, and connecting through the hollow top of the post with a light, substantially as set forth. 2nd. The combination, with a lamp post provided at its upper end with a shield, of a signaling apparatus located in part within the post, and connected with the light through the hollow upper end thereof, and comprising signal adapted to be obscured by the said shield, substantially as set forth. 3rd. The combination, with a lamp post having a standard, a box and a hollow top, the box and standard being made independent and secured together, of a shield located upon the top of the post, and a visual signaling apparatus located in part in the box, and connected with the light through the said hollow top of the post, and comprising a signal adapted to be obscured by the said shield, substantially as set forth. 4th. The combination, with a lamp post, provided with a box having a tapering upward extension opening into the hollow top of the post, of a shield located at the upper end of such post, and a visual signaling apparatus located in part in the box and in the tapering extension thereof, and connecting through the hollow top of the post with the light, and comprising a signal adapted to be obscured by such shield, substantially as set forth. 5th. The combination, with a lamp post provided with a box located between its upper and lower ends, and opening into the hollow top of the post, and with a shield located at the top of the post, of a signaling apparatus located in part in the box and connecting through the hollow top of the post with the light thereof, and comprising a signal which is surrounded and obscured by the said shield when not in use, substantially as set forth. 6th. The combination, with a lamp post provided with a box located between its upper and lower ends, and opening into the hollow upper end of the post, of a case forming a shield and provided with a collar fitted to the upper end of the post, and a signaling apparatus located in part in the box and connecting with the light through the hollow upper end of the post, and comprising a movable glass globe, which is moved to surround the light and to be obscured in the said shield or case, substantially as set forth.

No. 27,421. Kaleidoscope combined with a Toy Cart and Child's Rattle.*(Kaleidoscope combiné avec une voiture-jouet et une crécelle.)*

William Atkins, Portland, James Stratton and Henry F. Coombs, St. John, N.B., 15th August, 1887; 5 years.

Claim.—1st. The combination, in a kaleidoscope, of the disks C and the rings or bands D, combined with a handle E, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in the interior construction of kaleidoscopes, of fixed casts or pictures of animals or other objects, substantially as and for the purpose hereinbefore set forth.

No. 27,422. Water Closet Valve.*(Valve de latrine.)*

William H. Meadows, Toronto, Ont., 15th August, 1887; 5 years.

Claim.—1st. Combination of valves K, K, being worked at right angles on spindle G, G, by pegs H, H, for the purpose herein set forth. 2nd. Combination of rubber packing D, being set on spindle G and in cavity C, cavity being tapered so when pressure comes against shoulder F and washer E, thereby causing the rubber to contract in thickness and expand in width, thus fitting tightly around spindle G and causing a water-tight joint, substantially for the purpose herein set forth. 3rd. Combination of casing C, C, C, connecting pipe D with tail piece D, substantially for the purpose herein set forth. 4th. Combination of bearing M for valve stem J, thereby causing an anti-rattle while water is passing valve, and also to keep valve level, substantially for the purpose herein set forth. 5th. Combination of peg J on spindle G and journal N to keep spindle G in position, substantially for the purpose herein set forth.

No. 27,423. Automatic Clothes Line Reel.*(Rouet automatique de ligne d'étendage.)*

Daniel N. Crowley and Eugene L. Kelley, Danvers, Mass., U. S., 15 August, 1887; 5 years.

Claim.—1st. In a clothes-line reel of the character described, the combination of the following instrumentalities, to wit: a box provided with a hinged cover, a reel for the clothes-line, said reel being secured to a shaft journalled horizontally in the sides of said box, and provided with a pinion, a spool secured to a shaft journalled horizontally in the sides of said box, and provided with a gear which intermeshes with said pinion, a crank and a ratchet-wheel mounted on the outer end of said spool-shaft, a pawl pivoted to said box and adapted to engage said ratchet, a pulley journalled in the front of said box around which the clothes-line passes, and a weight suspended on the outer side of said box from a line passing over a pulley in the front of the box and around said spool, all being constructed and arranged to operate substantially as described. 2nd. In a clothes-line reel, the box B provided with the pulleys E, J, in combination with the reel A, journalled horizontally in said box on the shaft Z and having the pinion *v*, the spool C secured to the shaft Z journalled horizontally in said box and having the gear *m* adapted to intermesh with said pinion, the weight K suspended from the spool C by the line H, and the clothes-line D, substantially as set forth. 3rd. In a clothes-line reel, the box B, in combination with the reel A journalled horizontally in said box and provided with the pinion *v*, the spool C journalled horizontally in said box and provided with the gear *m*, crank *h* and ratchet *t*, the pawl *d* adapted to engage the wheel *t* and pivoted to the box B, the weight-line H secured to the spool C and provided with the weight K, the pulleys E, J journalled in said box, and the hollow post R provided with the pulley *a*, substantially as described.

No. 27,424. Button Making Machine.*(Machine à fabriquer les boutons.)*

John C. Schott, Providence, R. I., U. S., 15th August, 1887; 5 years.

Claim.—1st. The combination, with a die, of a pivoted hand-lever a swinging plunger pivoted to said lever, and provided with a punch for said die, substantially as herein described. 2nd. The combination, with a die, of a pivoted fulcrum post, a hand lever pivoted to the fulcrum post, a swinging plunger provided with a punch for said die, and pivoted to the lever, substantially as herein described. 3rd. The combination, with a die, of a pivoted fulcrum post provided with a guide, a hand-lever pivoted to the fulcrum post, a plunger provided with a punch for the die, and pivoted to the hand-lever and working in the guide, substantially as herein described. 4th. The combination, with a die, of a pivoted hand-lever, a swinging plunger pivoted to the hand-lever, and provided with a punch for the die, an auxiliary lever pivoted to said hand-lever, a fixed standard provided with a shoulder adapted to be engaged by the auxiliary lever, substantially as herein described. 5th. The combination, with a bed-plate and a die, of a fulcrum post, a hand-lever pivoted to said post, a plunger pivoted to the hand-lever and provided with a punch, a fixed handle and a fixed standard secured to the bed-plate, and the latter formed with a shoulder, an auxiliary lever pivoted upon the hand-lever and adapted to engage the shoulder on the standard, substantially as herein described. 6th. The combination, with a bed-plate and a die, of a fulcrum post pivoted at the foot to the bed-plate, a hand-lever pivoted to the fulcrum-post, a guide fixed to said post, a plunger provided with a punch and pivoted to the hand-lever and working in the guide, a handle secured to the bed-plate, substantially as and for the purpose herein described. 7th. The combination, with a bed-plate, of a fulcrum post, a hand-lever pivoted to said post, a plunger pivoted to the hand-lever and provided with a punch, a die for said punch consisting of a fixed die-bed, and a removable die-collar, substantially as herein described. 8th. The combination, with a bed-plate, of a fulcrum post, a hand-lever pivoted to said post, a plunger pivoted to said hand-lever, a punch adjustably secured to the plunger, and a sleeve sliding on the punch, a die for said punch, substantially as herein described. 9th. The combination, with a bed-plate, of a fulcrum post, a hand-lever pivoted to said post, a plunger pivoted to the hand-lever, and provided with an adjustable punch having a sliding sleeve, a die consisting of a fixed die-bed, and a fixed removable die-collar, substantially as and for the purpose herein described. 10th. The combination, with a bed-plate, of a fulcrum post pivoted to said plate and provided with a guide, a hand-lever pivoted to said post, a plunger pivoted to the hand-lever and formed with a central socket having a set screw setting therein, a punch mounted in said socket and provided with a flange and a guide-screw, a sleeve sliding over said punch and formed with a longitudinal guide slot for said guide-screw, a die consisting of a fixed die-bed and a removable die-collar adapted to fit about said bed, substantially as herein described. 11th. The combination, with a bed-plate, of a fulcrum post provided with

a guide, a hand-lever pivoted to said post, a plunger pivoted to the hand-lever and provided with a punch and working in said guide, a removable cylindrical cutter adapted to fit about said punch, substantially as herein described. 12th. The combination, with a bed-plate and a die, of a fulcrum post pivoted to the bed-plate, and provided with a guide, a hand-lever pivoted to said post and formed with a slot, a plunger provided with a punch and having a pin working in the slot of the hand-lever, substantially as herein described. 13th. The combination, with a bed-plate and a die, of a fulcrum post pivoted to the bed-plate, and provided with a guide and having the upper end thereof forked, a hand-lever formed with a slot and having a hinge-pin set across the fork of the post, a plunger provided with a punch and having a pin working in the slot of the hand-lever, a handle fixed to said bed-plate, substantially as herein described. 14th. The combination with a bed-plate and a die, of a fulcrum post pivoted to said plate and provided with a guide, a hand-lever pivoted to said post and formed with a slot, a plunger provided with a punch and having a pin working in the slot of the hand-lever, an auxiliary lever formed with a forked end and pivoted to the hand-lever, a fixed standard having a forked end to receive the hand-lever, and provided with a shoulder adapted to be engaged by said auxiliary lever, substantially as herein described. 15th. The combination, with the bed-plate 10 formed with the die-bed 11, of the die-collar 12, the pivoted fulcrum post 17 provided with the guide 32, the pivoted hand-lever 19 formed with slot 20, the plunger 22 having the pin 21, and provided with the punch, the sleeve 29 sliding on the punch, the handle 33, all substantially as herein described. 16th. The combination of the bed-plate 10 formed with the die-bed 11, the die-collar 12, the fulcrum post 17 pivoted to the bed-plate and provided with guide 34, the hand-lever 19 formed with slot 20 and pivoted to the post 17, the plunger 22 having pin 21, the standard 34 provided with the shoulders 35, the auxiliary 36 pivoted to the hand-lever, substantially as herein described. 17th. The combination, with the pivoted hand-lever 19, provided with the slot 20, of the plunger 22 provided with pin 21 and formed with the socket 23, the set-screw 24, the punch 26 provided with flange 28 and the hollow 27, the sleeve 29 provided with the guide-slot 30, the guide-screw 31 fixed to the punch, substantially as herein described.

No. 27,425. Wood Polishing Machine.*(Machine à polir les bois.)*

James L. Perry, Watertown, Wis., U. S., 15th August, 1887; 5 years.

Claim.—1st. The combination, with the feed-roller, of a frame for supporting the bearings of its shafts, said frame slotted and flanged as described, and the eccentrics, and gearing for raising said frame. 2nd. The combination, with the rubber having a lug at each end, and projecting pins, of an adjusting support, oscillating arms and a lever worked to an operating eccentric, as set forth. 3rd. The presser frame having hollow standards, and the main frame having wells for the standards, and inwardly-projecting lugs in combination with the vertical adjusting-shaft, as set forth. 4th. The combination, with the stand or frame having the wings A₁ with bearings at their upper ends, of the main frame trunnioned in said bearings and having the openings 1, 2, substantially as and for the purpose described. 5th. The combination, with the stand or frame and the main frame trunnioned thereon, as described, of the front feed roll, and the sand-paper cylinder journalled in adjustable slides on the main frame, the shafts *a* and H with their eccentrics and worm-wheels and the shaft *a* H₃ with its worms *a*, *a*, *a* for actuating the gears and eccentrics and adjusting the slides, as set forth. 6th. The combination, with the feeding-roll, the sand-paper cylinder and their adjustable bearing slides, the worm-shaft and the shafts carrying the eccentrics and worm-wheels, of the cutter-head, the adjustable bearing for the same, and the hinged connection between one end of said cutter-head and the contiguous bearing, as specified. 7th. The combination, with the rubber having a lug and projecting pins at each end, of the adjustable support M₁ for said rubber, the pivoted arm m₃ having flanges *n*, shafts *n* carrying a worm-wheel and eccentric, and a shaft carrying a worm for operating said shaft and actuating the eccentric and arm, as described.

No. 27,426. Clamp for Lasting Machines.*(Pince pour machines à enformer.)*

Solomon E. Ellithorp, Buffalo, N. Y., U. S., 15th August, 1887; 5 years.

Claim. 1st. A clamp for lasting machines having its jaws made flat on their opposing faces, which flat opposing faces are formed with a series of cup-shaped recesses or cavities, as set forth. 2nd. In a clamp for lasting machines, the pivoted jaws having the flat opposing faces, which are provided with cavities *a*, a cam to close the jaws, and the spring to open the same when the cam is released, as set forth. 3rd. In a clamp for lasting machines, the combination of the pivoted jaws having the recesses or cavities *a* on their opposing sides, and the extending arms, the cam pivoted to one arm and adapted to bear against the other to close the jaw, and the spring to open the jaws when the cam is released, substantially as described. 4th. In a clamp for lasting machines, the jaw having their opposing engaging faces made flat and provided with recesses or cavities, which recesses or cavities are made in the flat faces of the jaws and separated from one another by a flat portion of the jaws, as set forth.

No. 26,427. Lasting Machine.*(Machine à enformer.)*

Solomon B. Ellithorp, Buffalo, N. Y., U. S., 10th August, 1887; 5 years.

Claim.—1st. The combination, in a lasting-machine, of the stationary bed or table having the duplicate set of clamping devices and supports for the lasts, with the swinging arm G pivoted midway between the duplicate support for the lasts, and carry ing at one end the stretching and holding devices, substan-

tially as described. 2nd. The combination, in a lasting-machine, of the bed or table having the clamping devices, and the supports for the lasts at opposite ends, with the swinging bar G pivoted above the table or bed, and having the stretching devices and the hand-lever α with the holding rod c , substantially as described. 3rd. The combination, in a lasting-machine, of the supporting bar G, the rocking levers e pivoted thereto and connected together, the yokes k suspended from the said levers, and the templet provided with a series of pinchers, and having its sides suspended from the said yoke, whereby the templet is maintained at all times in a horizontal position, substantially as described. 4th. The combination, in a lasting-machine, of the supporting bar G, the rocking levers i pivoted thereto, the vertically movable yoke-bars k attached to the levers i , the links or rods l depending from the yoke-bars, and the templet provided with a series of pinchers and suspended by the said links or rods l , for the purpose set forth substantially as described. 5th. The combination, in a lasting-machine, of the supporting bar G, the rocking lever i pivoted thereto, and having the pins or spindles j extending from their lower ends, the vertically movable yoke bars k having the slots k^2 with which the said pins or spindles j engage, the rods or links l having their upper ends pivoted to the yoke bars and suspended therefrom, and the templet provided with a series of pinchers and attached to the lower ends of the said links or bars, substantially as described. 6th. The combination, in a lasting-machine, of the supporting bar G, the lever frame g , the rocking levers i pivoted to the bar G and attached to the lever-frame g , the vertically movable yoke bars k attached to the levers i and movable thereby, and the templet provided with a series of pinchers and suspended at its sides from the said yoke bars, substantially as described. 7th. In a lasting-machine, the combination, with the levers α , of the last, the holding bar pivoted to the lever and adapted to rest upon the last, the pivot of the holding bar to the lever being capable of horizontal adjustment, and a guide to retain the holding-bar in a vertical position, said guide being adjustable laterally to effect the horizontal adjustment of the pivot-point of the holding bar, as set forth. 8th. In a lasting-machine, the combination, with the last, of the hand-lever α having the slot α^1 , and the holding bar pivoted to the said slot, whereby the holding bar may be adjusted laterally, and means substantially as described for holding the hand lever down, as set forth. 9th. The combination, in a lasting-machine, of the supporting-bar G having the depending yoke Y, the plate d movable on the said guide yoke, the holding rod extending through the said plate, and guided thereby the hand lever to which the said holding bar is attached, and the pinchers for grasping the upper, substantially as described. 10th. The combination, in a lasting machine, of the bed or table having, the clamping devices at opposite ends, and the supports for the lasts, with the swinging bar G pivoted above the centre of the table and carrying the stretching and holding devices, and the standard H suspended from the outer end of the said swinging bar and adapted to rest upon either end of the bed or table for the purpose set forth, substantially as described. 11th. The combination, in a lasting machine, of the supporting-bar G, the templet suspended therefrom by mechanism substantially as described, and vertically movable thereon, the hand-lever α fulcrumed below the supporting-bar, the holding rod attached to the said hand-lever, the spring to normally raise the hand-lever and the holding-rod, and the hook or catch to lock the said lever when lowered for the purpose set forth, substantially as described. 12th. The combination, in a lasting machine, with the gatherers and plungers for action upon the heel and toe and sides of the last respectively, of the operating-shafts having the right and left hand screw-threads, the toggle jointed lever connected to the gatherers and plungers for operating the same simultaneously, and the threaded collars working on the threaded shafts and engaging the toggle jointed levers, substantially as described. 13th. The gatherers having the head P₁, the central plate P₂ and the pivoted jaws P₄ on opposite sides of the said plate, and having the projecting plates V₇ on their inner sides to extend over the plate V₃, for the purpose set forth substantially as described. 14th. The gatherer having the curved head provided with the central plate V₃, and the pivoted jaws V₄ having the plates V₇, the inner ends of the said plates projecting over the plate V₃ and adapted to meet at the center thereof, and the outer ends of the said plates forming projecting arms V₅, for the purpose set forth, substantially as described. 15th. The gatherer having the central plate V₃ and the pivoted jaws V₄, the inner edges of the said plate and jaws being bevelled on their under sides, and adapted to fit the toe or heel of the last, for the purpose set forth substantially as described. 16th. In a lasting machine, the swinging top plate carrying the templet and the holding rod, whereby the said top plate templet and holding rod may be swung to one side out of the way, substantially as described. 17th. The combination, in a lasting-machine, of the adjustable standard carrying the plungers and gatherers, and the levers connected to the said standards for operating the said gatherers and plungers, substantially as described. 18th. The combination, in a lasting-machine, of the movable gatherers or plungers towards the last, and the springs for moving the said gatherers or plungers from the last, substantially as described. 19th. The combination, with a lasting machine having the standards G and E of the pin H and the rest F vertically adjustable in the said standards, substantially as described. 20th. The combination, in a lasting machine, of the adjustable standards carrying the movable gatherers and plungers, and the adjustable standards having the supports for the last, whereby the machine is adapted for lasting shoes of varying sizes, substantially as described. 21st. The combination in a lasting machine, of the templet and the holding bar or rod, the said templet and holding rod or bar being movably vertically in opposite directions simultaneously, substantially as described. 22nd. In a lasting machine, the combination of the templet having the devices to grasp the edges of the upper leather, the holding rod and the lever to move the said templet and holding rod simultaneously in opposite direction, substantially as described. 23rd. In a lasting-machine, the combination of the templet having the devices to grasp the edges of the upper leather, the holding bar or rod and the lever from which the holding rod or bar and the templet is suspended, whereby the movement of the lever causes the templet and the holding bar or rod to move simultaneously in opposite-directions, as set forth.

No. 27,428. Last for Boots and Shoes.

(*Forme de Chaussure.*)

Robert S. Ellison, Canton, Ohio, U.S., 15th August, 1887; 5 years.

Claim.—1st. The last support C having a rear socket P, and a forward supporting arm E, substantially as described. 2nd. The last support C having a rear socket D, and a forward supporting arm E, and provided with a flat supporting surface between said parts, substantially as described. 3rd. The combination of the support C, having rear socket D and arm E, the last A having an extension B, substantially as described. 4th. In combination, with the last A having the extension B, the support C having a socket D, and a channelled or concave arm E with an intermediate space H upon which the extension B rests, substantially as described.

No. 27,429. Device for Packing Butter, etc.

(*Vaisselle pour emballer le beurre, etc.*)

John G. Peppler, Bloomingdale, Ont., 15th August, 1887; 5 years.

Claim.—1st. A device for packing material of perishable nature, consisting of a prismoidal metal case with close-fitting cover, in which case detachable wooden boxes filled with the material to be carried are placed in tiers one over the other, and grooved side pieces fixed to the inside of a keg to receive the corners of the case which is square in section, the space between the outside of the prismoidal metal case when in place in the keg and the inside of the keg being filled with ice or some cooling material, also a head for the keg having a strip of elastic material on its rim to fit against a shoulder formed inside the barrel, the head and bottom of the keg being held firmly against the shoulders formed in said keg by metal rods threaded at one end for finger nuts and enlarged at the other, substantially as described and for the purpose specified. 2nd. The combination of a keg A having head C adapted to be held in place and form a tight joint by means of rubber strip r bearing against a shoulder, and the metal strips H, rods D and nuts D, the prismoidal metal case B and grooved guide pieces, a cover F and corrugations f , a series of detachable boxes g placed in metal case B to hold material to be packed, and ice placed in the space b between the sides of the metal case B and the inside of the keg A, substantially as described and for the purpose specified. 3rd. The combination of the prismoidal metal case B, which encloses the material to be packed, and having cover F, frame piece h and upper and lower corrugations f , the grooved guides a fixed inside the keg A, and a cooling substance placed between the sides of the metal case B, and the inside of the keg A the head of which is rigidly held in place so as to form a tight joint, substantially as specified. 4th. The combination of the prismoidal metal case B and cover F, the grooved guides a fixed inside the keg A, the detachable boxes g for the material packed, and a cooling material placed between the sides of the metal case B and the inside of the keg A, the head of which is rigidly held in place, substantially as specified. 5th. The combination of the metal case B adapted to be held securely in position within a keg A, and to enclose so as to exclude moisture the material to be packed, and ice placed between the sides of the metal case and the inside of the keg A, the head of which is rigidly held in position, substantially as specified.

No. 27,430. Self-Binding Harvester.

(*Moissonneuse-Lieuse*)

John C. McLachlan, London, Ont., 15th August, 1887; 5 years.

Claim.—1st. In a self-binding harvester, the sprocket wheels D and E and chain belt F or their substantial equivalent, in combination with the driving shaft A and shaft B driving the knotting mechanism, for communicating motion directly to the knotting mechanism from the driving shaft without the use of intermediate gear, substantially as described. 2nd. In a self-binding harvester, the driving of the packers by a separate crank shaft G from the driving shaft A, substantially as shown and described and for the purpose specified. 3rd. In a self-binding harvester, the shaft A separate and independent from the shaft G driving the packers, for the purpose of driving the knotting mechanism at a different rate of speed from that at which the packers are driven, substantially as described and for the purpose specified. 4th. In a self-binding harvester, the packer shaft G and the independent driving shaft A revolving in opposite directions, substantially as described. 5th. The wheel J formed with notch K or their substantial equivalent, in combination with the sprocket wheels D E and chain belt C for communicating power directly from the driving shaft A to the shaft B, driving the knotting mechanism substantially as described.

No. 27,431. Universal Joiner.

(*Assembleur universelle.*)

Thomas Walker, Portland, Oregon, U.S., 15th August, 1887; 5 years.

Claim.—1st. In combination, with bed B, sliding frame C and pivoted A-shaped frame G, constructed substantially as shown and described, bolt D, collars E, F, mounted thereon, and provided with elongated journals b , mounted on frame C, supporting the journals cutter E, mounted upon the bolt D between the collars E, F, and a nut D upon the end of bolt D, substantially as shown and described. 2nd. In combination with frames C, provided with braces b , pivoted frame G, a bolt D, collars E, F, mounted thereon and provided with elongated journals, a cutter E mounted upon the bolt D, between the collars E, F, a nut D upon the end of bolt D, where the d mounted respectively upon the journals and the bolts outside the boxes b , as and for the purposes described. 3rd. In combination with post or standard N and leaves hinged thereto, a lifting device connected with the standard, and independently adjustable braces connecting the standard and leaves, whereby the table may be readily raised and lowered, and its leaves adjusted independently relatively to the standard, as described and shown. 4th. In a machine of the class described and shown, the combination of a post or standard N, a table, consisting of leaves L, L¹ hinged to said standard, a block

movable upon the latter, connecting bars extending from the block to the leaves of the table, a bolt or locking device serving to make the block fast to the standard or release it therefrom, and a lifting or elevating mechanism connected with the block and serving to raise or lower the table bodily, to raise and lower the leaves relatively to the standard, as the block is secured to or released from the standard, as described. 5th. In combination with post N, leaves L, Li pivoted thereto, block T mounted upon the post and adapted to be secured thereto, rods R, R, pivotally connecting the leaves and the sliding block T for raising and lowering the same, as described. 6th. In combination with frame A, upright post N mounted therein, leaves L, Li hinged to said post at its upper end, a block T mounted upon the post, rods R, R pivotally connecting the leaves L, Li and block T, a fastening *n* for locking the block to the post N, a fastening *m* for locking the post to the frame A, and an operating mechanism connected to the block T, whereby the entire table may be raised and lowered bodily without changing the inclination of the leaves, or the latter may be raised and lowered while the post remains stationary to vary their inclination, as described and shown. 7th. In combination with post N, pivoted leaves L, Li, a block T mounted loosely upon the post, a fastening *n* for securing the block to the post, blocks S upon the under side of the leaves, rods R connecting the blocks S and T, mechanism for adjusting the blocks S, and mechanism, substantially as shown, for raising and lowering the block T, as described. 8th. In combination with post N, leaves L, Li pivoted thereto, block T mounted upon post N and adapted to be connected with or disconnected from the post and blocks S upon the under face of leaves L, Li, rods R connected at one end to the block T, and at the other end to the blocks S, screws V connected with the blocks S for adjusting the latter, pointers W connected to the blocks S and adapted to move over a scale *c* upon the leaves, and mechanism, substantially as shown, for raising and lowering the block T, as described. 9th. In combination with frame A and the vertically-adjustable table L, Li, pulleys P, Pi mounted upon the frame A, a chain or band *Q* passing about the pulleys P, Pi and connected with the table, a worm wheel P₂ mounted upon the frame and connected with wheel P, or its shaft, and a worm Q mounted upon frame A and engaging with wheel P, substantially as shown and described. 10th. In combination with frame A and vertically-adjustable table L, Li, pulleys P, Pi mounted upon the frame A, a chain or band *Q* passing about the pulleys P, Pi and connected with the table, a worm wheel P₂ mounted upon the frame and connected with a wheel P or its shaft, a worm Q mounted upon frame A and engaging with the wheel P₂, and a belt tightener pivoted to the frame A, substantially as shown. 11th. In combination with frame A, and locking with supports L, Li, post N mounted therein, a fastening *n* for locking the post to the frame, a block T mounted upon post N and provided with fastening *n*, leaves L, Li pivoted to post N and provided with adjustable blocks S, pointers W and a scale *c* along the edge rods R, connecting the blocks S and T, a chain *Q* connected to block T and passing about sprocket wheel P and a pulley Q meshing with wheel P, as and for the purposes described. 12th. In combination with upright post N and the leaves L, Li pivoted thereto, the blocks S adjustable on the under surface of the leaves, a block T mounted upon the post and arranged to be connected therewith or disconnected therefrom at will, rods R connecting the block T with the blocks S, pointers W secured to the blocks S, pointers W secured to the blocks S and arranged to move over a scale upon the edge of the leaves, whereby the relative inclination of the leaves may be accurately read or determined, as described and shown. 13th. In a machine of the class described, the combination, with a bed or frame A, of an upright post N mounted thereon, and adjustable vertically in relation thereto, a series of graduations upon the face of said post, a block T also mounted upon the post and adapted to be secured thereto, a device for locking the post to the bed or frame, leaves L, Li pivoted at their inner ends to the top of post N, and rods R connecting the leaves and the block, all substantially as shown and described. 14th. In combination with a travelling cutter, a table composed of the pivoted leaves L, Li, adjustable vertically to and from the cutter, and relatively to each other, as shown and described. 15th. In a machine of the class described, the combination, with a frame A, of the adjustable leaves L, Li and the bars *p* pivoted thereto and adapted to swing across the face thereof, substantially as shown. 16th. In combination, with the bed or frame A, post N mounted upon and adjustable vertically in relation thereto, and leaves L, Li pivoted or hinged to the upper end of said post, the leaves being adjustable independently of each other, and adjustable together with or independently of the post N, substantially as described and shown. 17th. In combination, with the pivoted leaves L, Li, the bars *p* pivoted thereto, rods *x* journaled upon the bars *p* and adapted to be rocked thereupon, and stops Z adjustable lengthwise upon the rod *x*, substantially as shown and described. 18th. In combination with bed or frame A and the adjustable leaves L, Li, bars *p* pivoted to and adapted to swing across the face of the latter, and adjustable stops *z* secured to the bed or frame A to act in connection with the bars *p* to support the material being operated upon, as described. 19th. The combination with leaves L, Li, bars *p* pivoted thereto, rods *x* journaled on the bar *p*, bracket *w* for supporting one end of the rods and threaded to receive an extension piece *x* as shown and described. 20th. In combination with bed A, the leaves L, Li adjustable in relation thereto, and provided with curved slots in their upper faces, having graduations along their edges, bars *p* pivoted at one end to the leaves, rods *x* journaled on the bars *p* and provided with adjustable stops Z, headed bolt or stem *t* working in the slot and threaded at one end, and a hand-nut *v* screwing upon the stem *t* and bearing upon the arm *p*, as described and shown.

No. 27,432. Car-Coupler. (*Attelage de chars.*)

William R. Thomas, New York, N. Y. (assignee of Samuel H. Harrington, Columbus, Ohio), U.S., 15th August, 1887; 15 years.

Claim.—1st. The combination of the knuckle or jaw C, having an arm C₁ formed as specified, and the coupler-body A having a perforation E in its upper face, whereby a straight pin of the dimensions of an ordinary coupler-pin may be introduced to serve as a latch-pin,

substantially as shown and described. 2nd. The combination of the knuckle or jaw C, having an arm C₁ formed as specified, and the coupler-body A having a perforation E in its upper face, and a smaller perforation E₁ in its lower face, whereby it is adapted to receive a special pin D, D₁, or a straight pin of the dimensions of an ordinary coupler-pin may be introduced to serve as a latch-pin, substantially as shown and described. 3rd. The combination of the knuckle C, C₁ formed substantially as described, the coupler-body A having a recess B and perforations E, E₁, and the pin D having a guide rod or pin D₁ all substantially as and for the purpose specified. 4th. In combination with a coupler, having a movable jaw or knuckle, substantially as specified, a chain O attached directly to said jaw at one end, and to or near the corner of the car at its other end, as described, so as to afford a means of opening the jaw and of retaining it in its open position. 5th. In combination with an actuating-shaft and lever J and N journaled on the car-body, the cam K, having a slotted bearing K₃, and engaging with the shaft J by means of a pin L, the chain M secured to the cam and a latch-pin D, all substantially as and for the purpose shown and described.

No. 27,433. Surfacing Machine for Smoothing and Polishing School Slates. (*Machine à égriser et polir les ardoises des écoles.*)

Richard M. Pritchard, and John J. Williams, New Rockland, Que., 15th August, 1887; 5 years.

Claim.—1st. The combination, with any machine for surfacing, polishing or grinding, of an annular revolving grinder carried on a hollow shaft, serving as a water pipe, substantially as set forth. 2nd. The combination, with a vertical revolving shaft, of a disc secured on the end of same, grinder placed on underside of disc, and ring bolted to disc for holding grinder in place. 3rd. The combination, in a slate grinding machine, of an endless revolving band of plates carried on revolving drums, and carrying slates and a water trough through which such band passes.

No. 27,434. Metal Founding Machine.

(*Machine à fonder les métaux.*)

The Tabor Manufacturing Company (assignee of Harris Tabor, New York, N. Y., U.S., 15th August, 1887; 5 years.

Claim.—1st. In metal-founding machines, a rammer composed of a group of blocks, in combination with levers articulately attached to, and uniting the blocks in pairs, a lever articulately attached to, and uniting such first-mentioned levers, and a ram-rod arranged, substantially as set forth, to transmit pressure to said last-mentioned levers. 2nd. In metal founding machines, a rammer, composed of a group of marginal and interior blocks, in combination with levers articulately attached to, and uniting the blocks in pairs, the ends of such levers which attach to the inner blocks of the groups, being of greater length than the ends which attach to the marginal blocks of the groups, levers articulately attached to, and uniting said first-mentioned levers in pairs, and a ram-rod arranged, substantially as set forth, to transmit pressure to said last-mentioned levers.

No. 27,435. Automatic Railroad Switch.

(*Aiguille automatique de chemin de fer.*)

William S. Boyd, 3rd, Chicago, Ill., U.S., 16th August, 1887; 5 years.

Claim.—1st. The main operating shaft, provided at one end with right and left-hand spiral flanges or grooves, intersecting each other and adapted to be operated by a shoe or shoes of a passing train, whereby the said operating shaft may be turned in either direction and thus operating a switch, the free end of which is connected by a pitman with an arm or crank upon the operating-shaft, substantially as set forth. 2nd. The herein described guides or covers, having flared ends arranged over the spiral flanges upon the operating shafts, a sufficient distance apart to admit of the passage of the operating shoe, which is thereby guided and held in engagement with the said spiral flanges, substantially as set forth. 3rd. In an automatic switch, a main operating shaft arranged longitudinally between the rails of the main track, and having at one end two spiral intersecting flanges or grooves, and at the other end a single spiral flange or groove, a pitman connecting the free end of the shaft, with an arm or crank upon the said shaft, a shaft arranged longitudinally between the rails of the siding, and having a single spiral flange or groove, and a counter-shaft having pinions meshing with pinions or racks upon the end of the operating shafts, all arranged and operated substantially as set forth. 4th. The inclined guides, arranged at the ends of the spiral flanges upon the operating shafts, and at the points where the operating shoe will cross the siding rails for the purpose of guiding the said shoe gradually in an upward direction, and thereby avoiding breakage, substantially as set forth. 5th. The main operating shaft, arranged between the rails of the main track, and extending from a point beyond the pivoted end of the switch to a point beyond the frog, where the inner siding rail crosses the main track, said shaft being provided at its former end with two intersecting spiral flanges or grooves, and at its latter end with a single spiral flange or groove, substantially as set forth. 6th. The automatic switch-operating mechanism, consisting of a shoe mounted upon a vertically-sliding rod attached to the locomotive or rear car of a train, or both, said shoe being constructed and adapted to engage the spiral grooves or flanges on the operating shafts of the switch, substantially as and for the purpose set forth. 7th. The operating shoe, consisting of a rectangular block, provided on its under side with parallel downwardly-extending flanges, bevelled at their ends and adapted to engage spiral flanges upon the switch-operating shafts, substantially as set forth. 8th. The operating shoe mounted upon a vertically-sliding rod, arranged in a tubular casing, which is in turn attached to a longitudinal horizontal shaft, whereby the said casing may be swung laterally, so as to raise the shoe out of engagement with the spiral flanges or grooves upon the switch-operating shafts, in combination with the shaft and spiral flanges, substantially as set forth. 9th. The operated shoe, mounted upon a verti-

cally sliding rod, arranged in a casing which is attached to a shaft, having near one end an annular collar, and near the other end a pivoted latch, whereby the said shaft with its attachments may be mounted detachably in hangers, one of which is provided with a horizontal slot, substantially as set forth. 10th. In an automatic switch, the operating-shafts having spiral flanges or grooves, the covers or guides for the same having inclined or bevelled ends and laterally swing and adjustable vertically movable and slightly oscillating or laterally-movable operating shoe attached to the underside of the train, and adapted to enter between the guides or covers and thereby be held in engagement with the spiral flanges or grooves of the operating-shafts, substantially as and for the purpose set forth. 11th. In an automatic switch operated by a spiral cam, the operating shoe hung by springs to have a slight freedom of motion as indicated so as to accommodate itself to the guides, substantially as specified. 12th. In a switch operating spirally-flanged cam, constructed to lie lengthwise with the track and to be operated by the moving train through the medium of a dependent arm, the employment of two spiral flanges crossing each other and furnished at their intersection with a diamond-shaped piece at the centre to cause the arm to follow the flange in the direction in which it started, substantially as specified. 13th. In combination with the shaft E, a pinion mounted on same near the crank L, a rack connected to same, and a signal and switch stand carrying pinion or crank, all and for the purpose set forth.

No. 27,436. Lasting Machine for Boots and Shoes. (*Machine à enformer les chaussures.*)

Solomon B. Ellithorp, Buffalo, N. Y., U. S., 16th August, 1887; 5 years.

Claim.—1st. The combination, in a lasting-machine, of the top plate A⁴ having the levers P, the lever-frame connected to the said levers, the rods depending from the levers P and the templet suspended by the said rods and carrying the stretching devices, whereby both ends of the templet will be raised or lowered simultaneously, and the templet thus maintained always in a horizontal position, and means substantially as described for holding the last down, substantially as described. 2nd. The combination, in a lasting-machine, having the lugs or standards O on its upper side, of the levers P fulcrumed to the said lugs or standards, the lever frame connecting the upper free ends of the levers, the templet suspended from the outer ends of the levers and carrying the stretching devices, and the holding rod or bar connected to the inner end of one of the levers, whereby the said templet and holding rod will be moved in opposite directions simultaneously, substantially as described. 3rd. The combination, in a lasting-machine, of the top-plate A⁴, the lugs or standards O longitudinally adjustable thereon, the levers fulcrumed to the said lugs or standards, and the templet suspended from the said levers and carrying the stretching devices, substantially as described. 4th. The combination of the top plate A⁴ having the lugs or standards O, the guide-yoke M on the underside of the top plate, the levers P fulcrumed in the lugs or standards, the rods R attached to the said levers and extending downwardly through the top plate, and the guide-yoke and the templet attached to the lower ends of the said rods and having the gripping devices, substantially as described. 5th. The combination of the top plate having the lugs or standards O, the lever frame N, the links or arms connecting the said lever-frame to the top plate, whereby the lever-frame may be raised or lowered and maintained at all time in a horizontal position, the levers P fulcrumed to the lugs or standards O, and connected with the lever-frame and the templet suspended from the said levers, and having the gripping devices, substantially as described. 6th. The lasting-machine having the toggle jointed levers U and U¹, and the plungers and gatherers attached to the said toggle-jointed levers, and adapted to be forced thereby against the last, substantially as described. 7th. The combination, in a lasting-machine, of the toggle-jointed levers U and U¹, the vertically adjustable heads V¹ and the gatherers secured to the said heads and longitudinally movable therein, and connected to the levers U¹, substantially as described. 8th. The combination of the levers U³ adapted to move in opposite directions simultaneously, by means substantially as described, the levers U¹ adapted to move in opposite directions from the levers U³ at the same time, the gatherers attached to the levers U¹ and movable therewith, and the jaws X⁴ pivoted to the said gatherers and connected to the levers U², for the purpose set forth. 9th. The combination in a lasting-machine, of the vertically adjustable heads V¹, the horizontally movable sleeves W¹ secured in the said heads, the levers for moving the sleeves and the gatherers or plungers having the spindles entering the said sleeves, substantially as described. 10th. The combination, in a lasting-machine, of the heads V¹, the sleeves W¹ secured therein and movable longitudinally in the heads, the gatherers or plungers having the spindles entering the sleeves, and the set-screws for clamping the said spindle to the sleeves, whereby the gatherers or plungers may be adjusted independently of the sleeves, substantially as described. 11th. The gatherers having the curved heads X¹, the central inwardly projecting rigid tongues or plates X², and the pivoted swinging jaws X⁴, in combination with the levers connected to the said jaws, for the purpose set forth substantially as described. 12th. The combination, in a lasting-machine, of the movable gatherers having the pivoted jaws X³, and the projecting tongues or plates X², the toggle-jointed levers U and U¹ for moving the gatherers, the said levers U having arms U² connected to the jaws X³, for the purpose set forth substantially as described. 12th. The combination, in a lasting-machine, of the movable gatherers, the toggle-jointed levers U and U¹ for operating the gatherers the lever-arms U³ extending from the levers U, and having the cross heads and the rods Y¹ connecting the said cross-heads with the gatherers, substantially as described. 14th. The combination, in a lasting-machine, of the movable gatherers having the pivoted jaws X⁴, the levers to move the gatherers, the lever U³, the rods Y¹ connecting the jaws X⁴ with the lever U³, the said rods being adjustable longitudinally for the purpose set forth, substantially as described. 15th. The combination, in a lasting-machine, of the movable gatherers having the pivoted jaws X⁴, the lever arms U² having the cross-heads, the rods Y¹ attached to the jaws X⁴, and having the threaded outer ends extending through the cross-heads, and the clamping nuts

on the said threaded rod for adjusting the same on the cross-heads, for the purpose set forth, substantially as described. 16th. In a lasting-machine, the combination of the standards, the gatherers carried by the standards, the jointed levers for operating the gatherers, and the adjustable rods connecting the levers to the standards, as set forth. 17th. The combination, in a lasting-machine, of the movable standards T carrying the movable gatherers, and the levers for operating the same, the movable standards arranged at right angles to the gatherers and carrying the movable plungers, and the levers for operating the same, and the shafts I and K arranged at right angles to each other, and means connecting the said shafts with the operating levers of the gatherers and plungers, substantially as described. 18th. The combination of the standards having the vertically adjustable head for the plungers or gatherers, with the toggle-jointed levers U and U¹ fulcrumed to the said standards, and the levers U¹ having the slots U² working on their fulcrum pins, substantially as described. 10th. The combination, in a lasting-machine, of the frame having the radial slots C and D arranged at right angles to each other, with the standards carrying the movable gatherers and plungers, and the levers for operating the same, the said standards having the depending shanks extending through the slots C and D, and the clamping nuts on the said shanks to secure the standards to the frame at its desired adjustment, substantially as described. 20th. The combination, in a lasting-machine, of the frame having the support at its centre for the last, the slots C and D radiating from the centre of the frame, and the standards at right angles from each other, and the standards secured in the said slots and adjustable therein and carrying the movable gatherers and plungers, and the levers for operating the same, substantially as described. 21st. The herein described method of lasting boots and shoes, consisting in stretching the upper on the last, then simultaneously forcing the edges of the upper over the spring of the last at all points while the leather is stretched taut, whereby the upper will be smoothly drawn and secured on the last, as set forth. 22nd. The method of lasting a boot or shoe, consists in stretching the upper on the last, forcing the edges of the upper over the spring of the last onto the insole while the leather is taut, and securing the edges to the insole before the tension on the upper is released, substantially as described. 23rd. The combination, in a lasting-machine, of the devices to stretch the upper on the last, and the movable gatherers and plungers, and means, substantially as set forth, to cause the said gatherers and plungers to simultaneously compress the edges of the upper over the spring of the last while the leather is stretched, substantially as described. 24th. The combination, in a lasting-machine, of the hand-lever a, and the holding-rod attached to said lever and adjustable thereon, substantially as described. 25th. The combination, in a lasting-machine, of the hand-lever a, the holding-rod attached to said lever, and the spring to normally raise the hand-lever, for the purpose set forth substantially as described. 26th. The combination, in a lasting-machine, of the hand-lever a, and the holding-bar pivoted in the said slot, whereby the said holding-bar may be adjusted onto the hand-lever, substantially as described. 27th. The combination, in a lasting-machine, with the gatherers and plungers for acting upon the heel and toe and sides of the last respectively, of the operating shafts for actuating the plungers and gatherers simultaneously, the said shafts being arranged at an angle to each other, and gearing connecting the said shafts, whereby the same may be rotated simultaneously, for the purpose set forth substantially as described. 28th. The plungers for acting upon the leather having the outwardly projecting flange adapted to fit the spring of the last, the said flange being bevelled or inclined on their inner sides to wedge or crowd the leather over the spring of the last, substantially as described.

No. 27,437. Apparatus for Planing Cakes of Ice for Storing. (*Appareil pour raboter la glace pour l'emmagasiner.*)

John N. Briggs, Colymans, N. Y., U. S., 16th August, 1887; 5 years.

Claim.—1st. The cutter-head C, provided with a series of narrow cutters or chisels, which are separately removable from said cutter-head, as and for the purpose specified. 2nd. The combination, with the cutter head and the racks directly attached thereto, of the guides for both cutter-heads and racks, arranged perpendicularly to the plane of the elevator, the pinions mounted on said guides and engaging in said racks, and levers or arms for operating said pinions, all constructed substantially as described, so that the depth of the cut may be directly and positively regulated by means of said levers, as herein specified. 3rd. The combination, with a cutter-head held in a fixed unyielding position during the operation of planing a cake of ice, of the springs 3 fixed to the rear-most side of said cutter-head, and adapted to bear upon said cake and prevent it from being displaced during the said operation of planing, as herein specified. 4th. The chisel or cutter E, formed of a prismatic bar having a sharp entering point at its lower end, with cutting edges formed at acute angles to the front line of the cutter, and two facets 10 which are bevelled back from the cutting edges, and by which a central ridge or heel 11 is formed at such an angle that said ridge will conform to the cut produced by the entering point of said cutter, as and for the purpose herein specified.

No. 27,438. Pulverizing Harrow. (*Herse brise-motte.*)

Richard L. Lukens, Peoria, Ill., U. S., 16th August, 1887; 5 years.

Claim.—1st. In a pulverizing-harrow, the combination, with a central section, of two side sections hinged to the central section, and cutting-blades rigidly fastened to said side sections, the frame of each of said side sections consisting of two parallel bars separated by a suitable space, and having their ends joined by preferably integral transverse connections, substantially as and for the purpose set forth. 2nd. The combination of the three hinged frames A, A, A, each consisting of two suitably separated parallel bars, joined at their ends by transverse connections, and the outer bar of each of the frames A, A, being bored and the inner one slotted, substantially as shown and described, and stirring-blades having their front

ends fastened by bolts passing through the holes in said outer bars, and their rear ends adjustably secured by bolts passing through the slots in said inner bars, substantially as and for the purpose set forth.

No. 27,439. Contrivance for Holding Open the Mouth of Mail Bags and other Sacks when being filled.

(Appareil pour tenir ouverts les valises à lettres et les sacs.)

Charles W. Allen, Deer Park, Ont., 16th August, 1887; 5 years.

Claim.—1st. The combination of a metal frame having jaws to attach it to its support, and also having certain vertical studs more or less in number upon its upper side, substantially as and for the purposes hereinbefore set forth. 2nd. The studs, whereby a bag or sack is held with mouth distended by means of tension, as shown, in the cases of the bags marked M and N, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, whereby my holder is capable of supporting a single bag, or two or more bags, within a single frame, substantially as and for the purposes hereinbefore stated. 4th. The combination, whereby my holder is capable of supporting by means of tension 1 bag of the kind ordinarily used by farmers, and 2 mail bags or other sacks fitted with rings, eyelet-holes, loops, cords, or other special facilities for attaching them.

No. 27,440. Art of Making Sheet Metal Cans, for packing Meats, Fruits, Vegetables, etc. (Mode de fabrication des boîtes à conserves.)

James T. Walsh and Charles B. McDonald, Chicago, Ill., U.S., 16th August, 1887; 5 years.

Claim.—1st. The process of constructing sheet-metal cans, which consists in uniting to a straight can-body ends having parallel walls *b* and *d* united together, and of which one is upon the inner and the other opposite upon the outer wall of the can-body, substantially as specified. 2nd. A sheet-metal can having a straight body, and ends having parallel walls *b* and *d* united together, and of which one is upon the inner and the other opposite upon the outer wall of the can-body, substantially as specified.

No. 27,441. Fire and Burglar Alarm.

(Avertisseur d'incendie et d'effraction.)

Frank G. Lyon, Jersey City, N.J., U.S., 16th August, 1887; 5 years.

Claim.—1st. In an apparatus for indicating fires, or variations in temperatures, the combination of a main circuit, an office where watchmen are kept, a local circuit at premises to be protected, a number of signalling instruments in said local circuit and shunting or short circuiting thermostats in said local circuit, substantially as specified. 2nd. In an apparatus for indicating fires, or variations in temperature, the combination of a main circuit, an office where watchmen are kept, a local circuit at premises to be protected, a number of signalling instruments in said local circuit severally adapted to give a distinct signal, and shunting or short circuiting thermostats in said local circuit, substantially as specified. 3rd. In an apparatus for indicating fires, or variations in temperature, the combination of a series of signalling instruments severally adapted to give a distinct signal, an office where watchmen are stationed, a main circuit extending from the signalling instruments to the said office, a local circuit at premises to be protected in which said signalling instruments are connected up, and thermostats in said local circuit, all being arranged and combined substantially as described, whereby in case of fire or variations in temperature, a predetermined signal will be sent from one of the signalling instruments, but in case of weakening of or accident to battery, or break or corrosion of wire or other part in the local circuit, a confused signal will be sent from the instruments. 4th. In an apparatus for indicating fires, or variations in temperature, the combination of a number of signalling instruments severally adapted to give a distinct signal, an office where watchmen are stationed, a main circuit extending from the signalling instruments to the said office, a local circuit at premises to be protected, and hand-shunting instruments connected with said local circuit, and adapted to cause the predetermined signals to be at the office, where watchmen are kept, substantially as specified. 5th. In an apparatus for indicating fires, or variations in temperature, the combination of a number of signalling instruments severally adapted to give a distinct signal, an office where watchmen are stationed, a main circuit extending from the said signalling instruments to the said office, a local circuit at premises to be protected and self-locking hand-shunting instruments connected with said local circuit, and adapted to cause the predetermined signals to be given at the office where watchmen are kept, substantially as specified. 6th. In an apparatus for indicating fires, or variations in temperature, the combination of a series of signalling instruments severally adapted to give a distinct signal, an office where watchmen are kept, a main circuit extending from the signalling instruments to the said office, a local circuit at premises to be protected, shunting or short circuiting thermostats in said local circuit, bell instruments controlled by electromagnets also in said local circuit operated to give a signal in case of action of the thermostats or weakening or accident to battery, or break or corrosion of wire or other part in the local circuit, substantially as specified. 7th. In an apparatus for indicating fires, or variations in temperature, the combination of a series of signalling instruments severally adapted to give a distinct signal, an office where watchmen are kept, a main circuit extending from the signalling instruments to the said office, a local circuit at premises to be protected and shunting or short circuiting devices in said local circuit, whereby the operation of one signalling device results in increasing the magnetism of the electromagnets of the others, and therefore increases their ability to resist unlocking, substantially as specified. 8th. In an apparatus for indicating fires, or variations in temperature, the combination of a series of signalling in-

struments severally adapted to give a distinct signal, an office where watchmen are kept, a main circuit extending from the signalling instruments to the said office, a local circuit at premises to be protected, bell instruments controlled by electromagnets also in said local circuit, and shunting or short circuiting devices in said local circuit, whereby one of the signalling instruments and a bell instrument may be shunted or short-circuited out, and the magnetism of the magnets of all the other instruments increased, substantially as specified. 9th. In an apparatus for indicating fires, or variations in temperature, the combination of a series of signalling instruments, severally comprising a train of wheels adapted to give a distinct signal, and an electromagnets controlling the operation of the train of wheels, a main circuit extending from the train of wheels of the signalling instruments to an office where watchmen are stationed, a local circuit at premises to be protected in which said signalling instruments are connected up, and thermostats in said local circuit, whereby in case of fire or variation in temperature, a predetermined signal will be sent from one of the signalling instruments, but in case of weakening of or accident to battery, or break or corrosion of wire or other part in the local circuit, a confused signal will be sent from the instruments. 10th. In an apparatus for indicating fires or variations in temperature, the combination of a series of signalling instruments severally adapted to give a distinct signal, an office where watchmen are stationed, a main circuit extending from said signalling instruments to said office, a local circuit at premises to be protected, hand-shunting or short-circuiting instruments in said local circuit, and inaccessible detents for locking said instruments after the same have been operated to cause a signal to be sent to said office, substantially as specified. 17th. In an apparatus for indicating the variations in temperature, the combination of a signalling instrument comprising a mechanical motor for producing a signal, an electromagnet for controlling said motor, and a normally closed electric circuit connected with said electromagnet, said signalling instrument having a lever carrying the armature for such electromagnet operating in conjunction with a locking lever, substantially as specified. 13th. The combination, with an apparatus for indicating fires or variations in temperature, of a main circuit in which said apparatus is included, and burglar-alarm also included in said main circuit, both operating a signalling instrument at an office where watchmen are kept, substantially as specified. 13th. The combination, with an apparatus for indicating fires or variations in temperature, of a burglar-alarm and connections between a circuit break wheel forming part of the fire alarm and the ground, substantially as specified. 14th. The combination, with an apparatus for indicating fires or variations in temperature, of a burglar-alarm connections between signalling instruments comprised in the fire alarm and the ground, and means forming part of said signalling instruments, whereby a permanent connection will be made with the ground when said signalling instruments shall have run down, substantially as specified.

No. 27,442. Vegetable Cutter. (Coupe-racine.)

Stephen D. Wetherby, Bolivar, N. Y., U.S., 16th August, 1887; 5 years.

Claim.—1st. The combination, with the frame, the hopper having the cross-pieces *i* slotted at *l*, of the knife-frame *A* below the hopper having an opening *f*, a transverse two-edge knife *g* above said opening, and the vertical knives in front of each cutting-edge of the knife *g* and in alignment with the slots *i*, substantially as set forth. 2nd. The combination, with the knife-frame having an aperture therein, and a metal plate *e*, also apertured and having one edge or wall of the said aperture extending slightly across the aperture; in the knife-frame, of the knife *h* passed through said apertures and having notches *h*, one of which receives the said projecting edge and a key *z* entering said apertures at a point opposite the notches, substantially as set forth.

No. 27,443. Method of Welding Wrought and Cast Iron and Steel. (Procédé pour souder le fer, l'acier et la fonte.)

Damase Martel, St. Thomas de Pierreville, Que., 16th August, 1887; 5 years.

Résumé.—1o. La méthode de souder le fer, l'acier, et la fonte dans leurs diverses conditions moléculaires, tel que décrit. 2o. Une composition pour souder, composée de borax, de sel ammoniac, d'oxide de fer communément appelé limailles de fer, et de glaise ordinaire, dans les proportions et pour les fins décrites.

No. 27,444. Machine for the Cleaning of Vessels' Bottoms. (Machine à nettoyage les fonds des vaisseaux.)

Theodor Thorsen, Yarmouth, N.S., 16th August, 1887; 5 years.

Claim.—A machine to clean vessels' bottoms while at sea and in motion, consisting of a combination of brush, scraper, propeller, and shearing boards for raising and lowering, constructed and operated as hereinbefore substantially as set forth.

No. 27,445. Machine for Grinding Valves on their Seats. (Machine à roder les soupapes sur leurs sièges.)

Elijah U. Scoville and Clinton Owen, Manlius, N. Y., U. S., 16th August, 1887; 5 years.

Claim.—1st. A machine for grinding slide valves on their seats, comprising holders for the valve seats, reciprocating valve-carriers arranged over the valve-seat holders, and pivoted connection between the valves and valve-carriers, whereby said valves are allowed to conform their position to the contours of the valves-seat, substantially as set forth. 2nd. In a machine for grinding slide valves on their seats, the combination of a main supporting frame, a series of valve-seat holders arranged in a row on said frame, a reciprocating head, a series of valve-carriers connected to said head and

extending over the valve-seat holders, and pivoted connections between the valves and their carriers, substantially as and for the purposes set forth. 3rd. The combination of a main supporting-frame, a series of valve-seat holders arranged in a row on said frame, a reciprocating head, a series of valve-carriers extending from the said head over the valve-seat holders, and a spring pressing the aforesaid carriers toward the valve-seat holders, substantially as and for the purposes set forth. 4th. The combination of a main supporting frame, a series of valve-seat holders arranged in a row on said frame, a reciprocating head arranged movable toward and from the valve-seat holders, valve-carriers extending from the said head over the valve-seat holders, and a reciprocating bar arranged movable at right angles to the movement of the aforesaid head, and carrying with it the free ends of the valve-carriers, substantially as described and shown. 5th. In combination with the valve-seat holders H, H', I, I' and L, the reciprocating head A, the valve-carrying arms B, B' pivoted at one end on the said head, and having the opposite end over the said holders, the reciprocating bar C arranged movable at right angles to the movement of the head A, guides *a, a* on the bar C, and guide arms *b, b* on the arms B, B' sliding on the guides *a, a*, whereby the free ends of the valve-carrying arms are moved laterally simultaneously with their longitudinal movement, substantially as described and shown. 6th. In combination with the valve-seat holders H, H', I, I' and L, and reciprocating head A, the valve-carrying arm B flexible vertically and pivoted at one end on the head A, and having its free end over the said holders, and the spring D arranged to press on the intermediate portion of the arm B, substantially as set forth. 7th. In combination with the frame F and the series of valve-seat holders H, H', I, I' and L arranged in a row on said frame, the reciprocating head A, flexible valve-carrying arms B, B' pivoted on said head and having their free ends over the said holders, the arms *b, b* clamped on the arms B, B', the bar C extending across the arms *b, b* and reciprocating at right angles to the movement of the head A, and guides *a, a* pivoted on the bar C and having sliding through them the arms *b, b*, and the spring D pressing on the bar C, substantially as described and shown. 8th. In combination with the frame F and a series of valve-seat holders H, H', I, I' and L arranged in a row on said frame, the reciprocating head A, valve-carrying arms B, B' pivoted on said head, guide arms *b, b* on the arms B, B', the bar C extending across the arms *b, b*, and reciprocating at right angles to the head A, guides *a, a* pivoted on the bar C, the guide E on the frame F, and the slide *e* mounted on said guide and connected with the bar C, substantially as described and shown. 9th. In combination with the frame F add reciprocating valve-carriers B, B', the bars I, I', I' extended across the front of the frame F underneath the carriers B, B', the set-screws H, H' extending through the bars I, I', and the arms H' connected to the bar I' and having their free ends bifurcated, substantially as described and shown. 10th. In combination with the reciprocating head A, arms B, B' pivoted on said head, and the reciprocating bar C arranged to move at right angles to the movement of said head A, and carrying with it the free ends of the arms B, B', the driving shaft *d*, the cam-wheel K, and the crank L attached to said shaft *d*, the pivoted lever M arranged to transmit motion from the cam-wheel to the bar C, the slide N, connected to the head A, and the pitman O connecting said slide with the crank L, substantially as described and shown. 12th. In combination with the reciprocating head A, valve-carrying arms B, B' connected therewith, slide N, and pitman O, the crank-pin L secured on the crank L adjustably in relation to its distance from the axis of the crank, substantially as and for the purpose set forth.

No. 27,446. Knob Attachment.

(*Ajustage de bouton de porte.*)

George T. Moore, New York, N.Y., U.S., 16th August, 1887; 5 years.

Claim.—The combination, with the knob A having a cavity provided with recesses B, of the shank sections C, C beveled from the diameter towards the circumference and provided with projections D, and a sleeve F fitting over the shank sections when inserted in the knob, as set forth.

No. 27,447. Nut Lock. (*Arrête-écrou.*)

Edwin C. Rolls, Chatham, Ont., 16th August, 1887; 5 years.

Claim.—1st. In a nut lock, the combination, with a rail and bolt and nut, of a back plate placed behind the nut, having an elongated vertical slot through which the bolt passes, and two locking plates hinged to said back plate at the upper edge, and adapted to fold down on either side of the nut, substantially as and for the purpose described. 2nd. In a nut lock, the combination, with a rail and bolt, of a back plate having an elongated vertical slot through which the bolt passes, two locking plates hinged to said back plate, and a nut having its rear corners channelled, as described, said locking plates being adapted to fold down upon either side of the nut, and said nut to be turned so that two of its corners will overlap said locking plates, substantially as and for the purpose specified. 3rd. The combination, with a flangeless rail and a bolt and nut, of the back plate E having elongated slot *e*, and flange *e*₃ and locking plates E₁, E₂ hinged to said back plate, substantially as and for the purpose described.

No. 27,448. Window. (*Fenêtre.*)

Silas S. Bradshaw, Chicago, Ill., U.S., 16th August, 1887; 5 years.

Claim.—1st. The combination of a grooved window frame, slides fitted to run in the grooves of said frame, a sash wholly detachable from said slides, sash weights attached to the slides, fastenings which detachably secure the sash to the slides, and other fastenings on the several slides which detachably engage said slides within the window frame, as described. 2nd. The combination, with a window frame and a vertically movable sash, of weighted slides at the vertical margins of the sash fitted to run in guides or grooves of the frame stiles, means for detachably securing the sash to the slides, whereby the sash may be entirely removed from the slides while the latter are retained in the frame, and movable fastenings on the slides for

retaining said slides in place at the lower part of the window frame, when the sash is being removed and when absent, as described. 3rd. The combination, with a window frame and a sliding sash, of slides movably secured to the vertical margins of the sash, and catches which engage the slides with the adjacent stiles, said catches each having a bearing engagement with the sash, whereby the catch is held disengaged from the stile by the sash when the latter is in place, as described. 4th. The combination, with a window frame and a sliding sash, of a slide movably secured to the sash, and an automatic catch which engages the slide with the frame when the sash is absent, and is held clear of the frame by the sash when said sash is absent, as described. 5th. The combination, with a window frame, a sash and a slide applied removably to the vertical margins of the sash, and having a weight attached thereto, of a pivoted rotatable button on the inner vertical face of the slide, which button engages with the frame, a spring which tends to rotate the button into engagement with the frame, and a part or projection belonging to the button arranged to stand in the way of the sash, whereby the sash when inserted in place forces the button out of engagement with the frame, and leaves said slide free to move with the sash while upon withdrawal of the sash the button is free to engage the frame, substantially as described. 6th. The combination, with a window frame having stops between which are grooves for guiding the sash, a sash provided with slides removably applied to the vertical margins thereof, and weight cords secured to the slides, of a centrally pivoted button in the inner face of each of the slides, and between the ends thereof interior recesses in the proximate faces of both adjacent stops of each groove of the window frame, whereby both ends of each button simultaneously engage with the stops to more securely retain the slides within the grooves of the frame when the sash is removed, substantially as described. 7th. In combination, with a window sash and detachable slides applied to vertical margins of the sash, of pivoted pins on the lower ends of the slides, corresponding recesses in the lower ends of the sash to receive said pins, plates secured at their rear margins to the slides and projecting forward clear of said slides, and plates secured at their front margins to the sash and projecting backward clear of the sash in position to enter behind the plates on the slides, the surfaces of the thus engaging plates being inclined, as set forth, whereby the sash when rotated on the lower pin into the same plane with the slides, draws the slides closely to itself, substantially as described. 8th. The combination, with a grooved window frame, a sash, and detachable slides secured to the sash and running in the grooves of the frame, of means for drawing the slides against the sash and away from the bottom of the frame, grooves and weatherstrips applied to the slides in position to bear upon a wall of the frame grooves, whereby they prevent spaces from being opened between the slides and the window frame upon the movement of the slides towards the sash in being clamped closely thereto, substantially as described.

No. 27,449. Lozenge Machine.

(*Machine à pastilles*)

Thomas Robertson, Toronto, Ont., 16th August, 1887; 5 years.

Claim.—1st. In a lozenge machine in which the lozenges are formed by cutters, a bar or plate having holes in it substantially the same shape and substantially the same distance apart as the cutters, in combination with plungers operated by mechanism, so that when the lozenges are in the holes they are pressed therein by the action of the plungers. 2nd. In a lozenge machine, an intermittently moving moulding cylinder pierced with holes *g*, in combination with the plungers *r*, arranged to operate substantially as and for the purpose specified. 3rd. A bar or plate *n*, pierced with two or more holes *g*, and supported on the axle *o* by the head *p*, in combination, with the plungers *r* fitting into the holes *g*, and attached to the bar *s* which is provided with friction rollers *t* arranged to fit into cam grooves *u*. 4th. A bar or plate *n*, pierced with two or more holes *g*, and supported on the axle *o* by the head *p*, in combination with the plungers *r* fitting into the holes *g*, and attached to the bar *s*, which is provided with friction rollers *t* arranged to fit into cam grooves *u* having a movable gate *z*, arranged and operating substantially as and for the purposes specified. 5th. A bar or plate *n* having two or more holes *g* pierced in it, in combination with the series of plungers *R* supported in the carriage *I*, which derives a reciprocating motion, substantially as and for the purpose specified. 6th. A movable carriage *I* arranged to support a series of plungers *R*, in combination with a pivoted lever *6* having a series of brushes *8*, the whole being arranged and operating substantially as and for the purpose specified. 7th. A pivoted arm *K* connected to the carriage *I* by the link *L*, in combination, with the rod *P* arranged to connect the arm *K* to a crank pin attached to and operated by the shut *Q*, substantially as and for the purposes specified. 8th. A pivoted arm *M*, connected at one end to the carriage *J* by the link *O*, in combination with the rod *N* arranged to connect the arm *M* to the arm *K*, substantially as and for the purpose specified. 9th. The plungers *r*, adjustably contained within the bar or plate *n*, which is connected to the revolving axle *o*, in combination with the brushes *9*, arranged substantially as and for the purpose specified. 10th. An arm *S* journaled on the axle *o*, and deriving a rocking movement from the machine, as specified, a pawl *y* pivoted on the said arm, in combination with the notches *z* cut in the periphery of the disc *V*, which is fastened to the axle *o*, substantially as and for the purpose specified. 11th. In a lozenge machine, in which the lozenges are withdrawn from the cutters by fingers, as described, a head arranged to carry the said fingers and hinged or pivoted to the reciprocating frame from which the fingers derive their motion, in combination with a finger or pawl *y* pivoted to the head and arranged to lift the said head at each return stroke, substantially as and for the purpose specified. 12th. The table *D*, pivoted at the hinge *a*, and having the cutter head *C* attached to its other end, in combination with the rod *12* arranged to connect the table *D* to the crank *b*. 13th. The combination of the pivoted table *D*, with a weighted lever *d*, substantially as and for the purpose specified. 14th. The plungers *r* operating in the holes *g*, as specified, in combination with a stationary plate *13*, substantially as and for the purposes specified. 15th. The combination, with the revolving cylinder *G*, of a stop *14*, arranged substantially as and for the purpose specified.

No. 27,450. Lock. (Serrure.)

Ephraim Hambuger, Detroit, Mich., U.S., 16th August, 1887; 5 years.

Claim.—1st. The combination, with the latch A having notch *c*, of the spring-pressed tumbler C having lip *e* engaging said notch, and the key D formed with projection *d*, substantially as and for the purpose specified. 2nd. In a lock the case consisting of the front cap and top plates, the latter provided with slot *h*, combined with the latch pivoted on the stud B and having a disc E and notch *c*, the spring-pressed pivoted tumbler C having bevel lip *e* and the key D formed with projection *d*, all arranged for joint operation as set forth.

No. 27,451. Cleansing Filters by Granular Abrading Material. (Nettoyage des filtres au moyen de matières rudes en grain.)

John W. Hyatt, Newark, N.J., U.S., 16th August, 1887; 5 years.

Claim.—1st. In a filter in which the filtration is performed by filter agents of solid material, the combination, with such filter agents, of loose particles of abrading material arranged movably in the unfiltered fluid in contact with the filtering surfaces, and agitated against such filtering surfaces to remove the impurities therefrom. 2nd. In a filter, the combination, with the filter agents, of loose particles of abrading material in contact with the filtering surfaces, and means for agitating the filter agents in contact with such loose particles. 3rd. In a filter, the combination, with the filter agents, of loose particles of abrading material in contact with the filtering surfaces, and agitated against the same to remove the impurities therefrom by means of the current of inflowing fluid. 4th. In a filter, the combination, with a casing containing filter agents of solid substance, of abrading material within the casing about such agents, and a pump arranged and operated as in Fig. 6 to draw the abrading material from the bottom of the casing and deliver it again to the top, for the purpose set forth. 5th. In a filter, the combination, with a casing containing filter agents surrounded by granular abrading material in the unfiltered fluid of a rotating arm, as *n*, arranged and operated as shown in Fig. 1, to distribute the inlet fluid beneath different portions of the abrading material to agitate the same successively. 6th. In a filter, the combination, with a casing containing filter agents surrounded by granular abrading material in the unfiltered fluid, of means, as the strainer pipe *n*, for withdrawing the fluid from the upper part of the casing, and a pump, as *o*, connected with such strainer pipe, and with an inlet at the bottom of the casing, and operated to circulate the fluid through the casing to agitate the abrading material against the filtering surfaces. 7th. In a filter, the combination, with a casing containing filter agents surrounded by granular abrading material in the unfiltered fluid, of a pump having its suction connected by a pipe, as *o*, with the fluid in the upper part of the casing, and also with a water supply pipe, as *p*, and having a reducing valve *o* inserted in the pipe *o*, and having its outlet *o* connected with the bottom of the filter, the whole being operated for the pump to draw the water from the supply pipe *p* or from the top of the filter at pleasure, and to force the fluid beneath the abrading material in the casing to agitate the same in the desired manner. 8th. The particular construction for the filter agents consisting in the porous cups *e* having their mouths cemented to one side of the plate, and connected through suitable openings to a water channel or passage upon the opposite side of the plate, and the unfiltered fluid being pressed upon the exterior of the cups and delivered through the apertures in the plate, substantially as set forth. 9th. The filter shown in Figs. 1 and 2, consisting in the rotary casing *a*, containing one or more series of porous cups attached by their open mouths to hollow metallic plates, and surrounded by the unfiltered fluid containing granular abrading material, the fluid being received and discharged through the trunnions of the casing *a*, and the abrading material being agitated against the surfaces of the porous cups by the rotation of the casing.

No. 27,452. Envelope and Note Paper, or other Paper or Card used or combined therewith. (Enveloppe et Papier à Note, en usage ou Combinés avec d'autre Papier ou Carte)

Jacob Hertz, London, Eng., 16th August, 1887; 5 years.

Claim.—1st. A combined envelope and note paper, consisting of a part *e*, with flaps *d*, *d* and *f*, a part *h* for writing on, and a connecting part *g*, substantially as set forth. 2nd. An envelope *d*, *d*, *e*, *f*, provided with a hole *b* through, and a part *h* for writing on, and adapted to receive a postal stamp which, when the part *h* is inserted in the envelope, shews through the hole *b* in the latter, substantially as set forth.

No. 27,453. Lamp. (Lampe.)

William C. Baird, Scarborough, and James W. Williams, Brooklyn, N.Y., U.S., 17th August, 1887; 5 years.

Claim.—1st. In combination, in an argand lamp, the fount provided with a slot *e*, the guide-plates *e* secured on the top of the fount, one on each side of said slot, and provided with a groove *e*, the wick-tube B, the wick-shifter *b* on said tube and fitted to sustain and hold the wick C, the bar E connected by an arm *b* to the wick shifter, and extending upward above the top of the fount between the plates *e*, and provided with a rib *e*, fitted to slide in said groove, whereby said bar and wick-shifter in their vertical movement are held parallel to the tube B while the slot is unobstructed to permit the wick-shifter arm and bar to be introduced into and removed from the lamp, all as and for the purpose described. 2nd. The combination, in an argand lamp, with the fount A provided with the slot *e*, the guide-plates *e* secured on the top of the fount, one on each side of said slot, and provided with a groove *e*, the wick-tube B wick shifter *b* on said tube bar E connected by arm *b* to the wick-shifter, and extending upward above the top of the fount between the plates *e*, and provided with a rib *e* fitted to slide in groove *e*, of the described

rack and pinion adapted to raise and lower the said bar and wick-shifter, all as and for the purpose described.

No. 27,454. Adjustable Weather Strip.

(Bourrelet de Porte Mobile)

Kirk S. Blanchard, Clarendon, N.Y., U.S., 17th August, 1887; 5 years.

Claim.—1st. The combination of a door having a longitudinal groove in its lower edge, formed with an upwardly-extending recess, and with a vertical groove at the middle of one side, and having a horizontal bore extending from the hinge-edge to the upwardly extending recess, a strip extending the entire length of the groove and sliding in the same, a flat bar sliding in the vertical groove and having three studs upon its face, the lower one of which is inserted into the strip at its middle, a plate secured in the bottom of the groove of the door and having two perforated ears, an elbow-lever pivoted upon a pin between said ears, and having its inner end pivoted to the upper stud of the flat bar, and having its upper arm projecting in the recess of the groove, a bolt sliding in the horizontal bore in the door and bearing with its inner end against the upwardly projecting arm of the elbow lever, and a spring bearing against the underside of the central stud of the flat bar with its free end, and secured in a casting in the bottom of the groove near the latch end of the same, as and for the purpose shown and set forth. 2nd. The combination of the casting having the groove in one face, and two perforations connecting with each other and extending through the casting, with the spring having its inner portion resting in the groove, and having its end bent and inserted through the perforation, and bent at the other side, and the screw passing through the perforation bearing against the bent end of the spring, as and for the purpose shown and set forth. 3rd. The combination of a weather strip device having the strip E connected by the bar O, with the elbow lever F, and the bolt L arranged to operate the same with the casing Y made in several sections telescoping together, substantially as shown and for the purpose set forth.

No. 27,455. Sulky Plow. (Charrue à Siège.)

George Ross, Petrolea, Ont., 17th August, 1887; 5 years.

Claim.—1st. In a sulky-plow, the combination, with the end bars of the frame A and the plow-beams B, of the coupling-blocks C, the yokes D and the bolts E, substantially as herein shown and described, whereby the said plow-beams are firmly secured to the said frame and can be readily adjusted, as set forth. 2nd. In a sulky-plow, the combination, with the shaft S journaled to the frame A, and the sliding bar O carrying the axle Y, of the side furrow-wheel Z and provided with gear teeth on its rear edge of the unequal-armed lever *e* having gear-teeth on its ends, and the lever *f* having gear-segment, substantially as herein shown and described, whereby the said furrow-wheel can be readily raised and lowered to adjust the machine to cut a deeper or shallower furrow, as set forth. 3rd. In a sulky-plow, the combination, with the sliding bars N, O carrying the axles P Y of the side wheels Q, Z, of the shaft S, the gear segment P and the lever T, and the unequal-armed lever *e* having gear-teeth on its ends, the lever *f* having gear teeth and the spring lever-pawl *g* connected with the said lever, and engaging with the catch-plate *h* attached to the shaft S, substantially as herein shown and described, whereby both the side wheels can be raised and lowered at the same time, as set forth. 4th. In a sulky-plow, the combination, with the rear end of the frame A and the plow beams B, of the socket-bracket C, the standard *i* carrying the rear-wheel J, and provided with annular corrugations and the gear-lever *l*, substantially as herein shown and described, whereby the rear end of the machine can be readily raised or lowered, as set forth. 5th. In a sulky-plow, the combination, with the sliding bar O having lugs W, and the side furrow-wheel Z, of the vertical rod X, the hinged axle Y, the rigid lever *a* attached to the said hinged axle, the slotted arm *b* attached to the said rod, and the bolt *d*, substantially as herein shown and described, whereby the said furrow-wheel can be tilted laterally to hold the machine against side draft, as set forth. 6th. In a sulky-plow, the combination, with the rear furrow-wheel J, the side furrow-wheel Z and the tilting lever *a*, of the forwardly projecting arm *p* attached to the said lever the connecting-rod *q*, the tongue-plate *r* provided with the arm *t*, the connecting rod *u* and the arms *v* attached to the upper end of the standard *t* of the wheel J, substantially as and for the purpose set forth.

No. 27,456 Fire-Extinguishing Apparatus.

(Extincteur d'incendie.)

Russell A. Ballou, Auburndale, Mass., U.S., 17th August, 1887; 5 years.

Claim.—1st. The combination of a receptacle, a removable cover therefor and a faucet attached to said cover, said faucet having a pipe or branch extending into the contents of the receptacle, and an outlet pipe or branch extending outwardly through the cover, the faucet and pipe being removable from the receptacle with the cover, as set forth. 2nd. The combination of the receptacle, the removable cover therefor and the faucet, the spring hammer and its holder, all supported by, and removable with said cover, as set forth. 3rd. The combination of the receptacle, the removable cover therefor and the faucet, the spring hammer and its holder and the bottle holder, all supported by and removable from the receptacle with the cover, as set forth. 4th. The combined cover or cap and faucet consisting of the cover having the faucet casing formed integral therewith, the said cover being provided with a screw-threaded flange adapted to engage with and be screwed upon the screw threaded portion of the receptacle to which it is to be applied, a plug socket extending through the casing and the top of the receptacle, a branch passage formed in the casing and communicating with the interior of the receptacle and with the plug, and an outlet passage formed in the casing or cover communicating with the plug and the exterior of the cover, and a locking device consisting of an adjustable plate provided with a key-hole shaped slot through which the stem of the plug passes, the construction and arrangement being such as that when the

smaller or square shaped part of the slot engages said stem, the plug is held from rotating and, when said stem is in the larger or circular portion of the slot, the plug may be rotated, as set forth. 5th. In a chemical fire-extinguisher, the combination of a main receptacle having an outlet pipe and a faucet therefor, a spring impelled hammer within the receptacle, a holding and releasing device for said hammer, and two or more bottle holders within the receptacle, said holders being arranged to hold two or more bottles in the path through which the hammer is impelled when released, whereby all of said bottles will be broken by each impulse given to the hammer, as set forth. 6th. In a chemical fire-extinguisher, the combination of a main receptacle, two or more bottles therein, a multiple hammer, whereby said bottles may be simultaneously broken, and an operating spring and a retaining and releasing device for said hammer, as set forth. 7th. The combination of the receptacle, a series of bottle holders therein, and a multiple hammer formed to simultaneously break the bottles in said holders, as set forth. 8th. The combination of the receptacle, the perforated partition or strainer and the bottle holding pipe or standard, as set forth. 9th. The multiple hammer having guide pins or projections, combined with the fixed sockets for said pins, as set forth. 10th. In a chemical fire-extinguisher, the combination of a strong receptacle, two or more glass bottles therein hermetically closed by the material of which it is made and containing suitable chemicals, and means for breaking said bottles.

No. 27,457. Washing Machine.

(Machine à Blanchir.)

William W. Weisell, Bluffton, Ind., U.S., 17th August, 1887; 5 years.

Claim.—1st. The combination, with the suds-box, of the reciprocating rubber hung upon crank shafts, the cranked portions of which are outside of the suds-box, and springs having one end secured to the suds-box near its lower edge, and loops secured to the other ends of the springs and encircling the cranked portion of the said shafts, substantially as described and shown. 2nd. In a reciprocating-rubber washing-machine, the combination, with the suds-box and the reciprocating rubber having a crank-shaft, of springs secured to the sides of the box, and bearing on the cranked ends of the shaft to reverse its stroke, substantially as set forth. 3rd. In a reciprocating rubber washing machine, the combination, with the suds-box and the reciprocating rubber having a crank shaft, of coiled springs secured to the sides of the box near its bottom, and spring-rods secured to the sides of the box near the end thereof, the said coiled springs and spring-rods bearing on the cranked ends of the rubber-shaft to reverse its stroke substantially as specified. 4th. The combination of the suds-box, the divided standards pivotally secured upon the upper edges of the suds-box, and the rubber having its shaft resting in the base of said standards below their swinging portions, substantially as described.

No. 27,458. Wire Matting. (Natte de fil de fer.)

Israel Kinney, Windsor, Ont., 17th August, 1887; 5 years.

Claim.—1st. A wire fabric consisting of a series of spiral wires A, and in connection therewith, a series of spiral wires B subsequently interwoven with the wires A, both series laid in the same direction, each wire B serving to lock the adjacent wires A, substantially as described. 2nd. A wire fabric consisting of a series of wires A, each wound into the form of a right hand spiral, and in connection therewith, a series of wires B, each wound into the form of a left hand spiral, and subsequently interwoven with the wires A, both series laid in the same direction, each wire B serving to lock the adjacent wires A against shifting together, substantially as described. 3rd. A wire fabric consisting of spirally wound wires A, and spiral wires B, and subsequently flattened down by pressure substantially as described. 4th. A wire fabric consisting of righthand spiral wires A, and left hand spiral wires B, interwoven as described, and subsequently flattened down by pressure, substantially as described. 5th. A wire fabric consisting of spirally wound, wires interwoven with each other, said fabric subsequently flattened down by pressure between two surfaces, one of which as pressure as being applied is caused shift with respect to the other in the direction of the length of the said wires, thereby simultaneously tilting over and flattening down the convolutions, substantially as described. 6th. A wire fabric consisting of right and left spiral wires A, B, interwoven as described, said fabric subsequently flattened down by pressure between two surfaces, one of which as pressure is being applied is caused to shift with respect to the other in the direction of the length of the wires A, B, thereby simultaneously tilting over and flattening down the convolutions, substantially as described. 7th. A wire fabric consisting of a series of spiral wires A interwoven together, and in connection therewith a series of locking wires B interwoven with the wires A, both series laid in the same direction each wire B serving to lock the adjacent wires A, substantially as described. 8th. The combination, with a spirally wound wire A, of one or more locking wires B interwoven therewith, substantially as described. 9th. A wire fabric consisting of spirally wound wires interwoven with each other, the convolutions of said wires tilted over and flattened down, substantially as described. 10th. A wire fabric consisting of flattened spirally wound wires, having in combination therewith locking wires B, said locking wires extending in a direction parallel with the wires A, the fabric and coiled in the same direction, substantially as described. 11th. A wire fabric consisting of spirally wound wires A, having in combination therewith wires B located at the edges of said fabric, and constituting a selvage at the sides of said fabric, substantially as described. 12th. A fabric of spirally wound wires, the convolutions at each end of said wires being wound closely together, and reduced in diameter, as and for the purpose set forth. 13th. A wire fabric composed of a continuous strand of spirally wound wire, folded back and forth upon itself into parallel strands, having in combination therewith locking wires B between each strand and the adjacent ones, substantially as and for the purpose described. 14th. A mat consisting of a wire fabric made of spirally wound wires interlaced with each other, and with locking wires B, having in combination therewith, metallic binding the inner edges of said binding indented so as to engage and partially sur-

round the convolutions of wire, substantially as described. 15th. The combination, with a wire fabric constructed of spirally wound wires interlaced with each other and flattened by pressure, in combination with locking wires B, and metallic binding engaged with the edges of said fabric at the end of the wires, substantially as described. 16th. In combination with a wire fabric composed of a spirally wound wires flattened down, of two or more thin flexible strips of metal interwoven with the fabric and secured to end strips, substantially as described. 17th. In combination with a wire fabric composed of spirally wound wire flattened down, of two or more thin flexible strips of metal interwoven with the fabric, said wire passed through said strips, substantially as set forth.

No. 27,459. Vehicle Axle. (Essieu de voiture.)

John M. Brosius, Atlanta, Ga., U.S., 17th August, 1887; 5 years.

Claim.—1st. A vehicle-axle, consisting of a channel iron axle-tree, to which are adjustably attached spindles formed from sheet metal, substantially as described. 2nd. In a vehicle axle, the combination of the axle-tree *d*, the spindle *S* and the shims or wedges *W*, by means of which the axes of the wheels may be adjusted, as described and for the purpose specified.

No. 27,460. Fire Box and Ash Pan for Locomotive Engines. (Boîte à feu et cendrier pour locomotives.)

Christopher Knaggs, Detroit, Mich., U.S., 17th August, 1887; 5 years.

Claim.—1st. The sectional grate in a fire-box, of an engine so arranged that the grate bars of the different sections turn inward, as and for the purposes set forth. 2nd. The combination of the fire-box of an engine, a grate divided into two sections, so arranged that the grate-bars of the one section will turn independently of the other section, substantially as and for the purpose specified. 3rd. The grate bar *D*, provided with the slotted arm *Dr*, as and for the purposes set forth. 4th. In combination, with a fire-box of an engine, the grate bar *D*, constructed as described. 5th. In combination, with the fire-box of an engine, the grate bar *D* pivoted, as described, and provided with the arm *E*, for the uses and purposes specified. 6th. The combination of the fire-box of an engine, with the pivoted grate bars *D*, provided with the arms *E* and rods *F*, as described. 7th. The combination of the fire-box of an engine, with the pivoted grate bar *D*, the rod *F* and the lever *N*, substantially as and for the purposes described. 8th. The pivot pin *K*, constructed as described. 9th. The combination, in the ash-pan of the fire-box of an engine, of the grate-bar *I* with the pivot pin *K*, substantially as described. 10th. In the ash-pan of a fire-box of an engine, the combination of the pivot pin *K*, the grate bar *I* provided with the arm *L* and the bar *M*, substantially as described. 11th. The combination of the ash-pan of the fire-box of an engine, with the pivot *K*, the grate bar *H*, constructed as described, and the rod *M*, with the lever *N*, substantially as and for the purposes specified. 12th. The combination of the ash-pan of the fire-box of an engine, with the pivot *K*, the grate-bar *H*, constructed as described, the rod *M*, the lever *N* and the steam and water pipe, constructed as described for the purposes set forth.

No. 27,461. Vehicle Spring. (Resort de voiture.)

Harry A. Myers, Franklin, Penn., U.S., 17th August, 1887; 5 years.

Claim.—1st. The combination, with the body of a vehicle, of the brackets or blocks on the under side thereof, having bearings or sockets for the springs therein, and the torsion springs adapted to pass through the bearing in one of the said brackets, and have the end at the opposite side of the body bent at right angles, and flattened to be fastened by bolts or otherwise over the said blocks, and secure the same to the body of the vehicle, substantially as and for the purpose set forth. 2nd. The combination, with a vehicle, of the leaf-springs *E*, *F*, having the depending ears *f*, *f*1 at each end, provided with aligned perforations body *A*, journal block secured there to near the sides, torsion springs *H*, *H*, passing through the said blocks, and having the arms *K* provided with the eyes *k*, which are inserted between the ears *f*, and the bolt passing through the said aligned openings in the ears and the said eye to pivot the arms *K* to the springs *E*, *F*, substantially as specified.

No. 27,462. Steam Boiler. (Chaudière à vapeur.)

George Steel, New York, N.Y., U.S., 17th August, 1887; 5 years.

Claim.—1st. The combination, in a steam generator, of the portions *E*, *E*, of different diameter, comprising heating tubes and a magazine tube, the circular water-jacket upon which the portion *E* of larger diameter rests and is supported, and a grate at the lower end of the jacket, substantially as herein described. 2nd. The combination, in a steam jacket, of the portions *E*, *E*, of different diameters, comprising heating tubes and a magazine tube, the circular water-jacket extending downward from the portion *E* of larger diameter, and receiving within it the portion *E*1 of smaller diameter, the heating tubes *f* projecting radially inward from the inner wall of the water-jacket, and a grate arranged at the lower end of the water-jacket, substantially as herein described. 3rd. The combination, with the portions *E*, *E*1 of different diameter, and comprising heating tubes and a magazine tube of the circular water-jacket, provided with inwardly-projecting radial heating tubes *f*, the heating-coil *y* arranged within the jacket and connected with the jacket and the boiler portions *E*, *E*, and a grate arranged below the coil, substantially as herein described. 4th. The combination, with the circular water-jacket and a grate at the lower end thereof, of a boiler structure comprising heating-tubes, and a magazine tube superposed on the jacket, an outer fire-jacket inclosing the water-jacket and boiler structure and smoke pipes leading from the upper and lower portions of the fire-jacket, substantially as herein described. 5th. The combination, with the circular water-jacket, provided with inwardly-projecting radial heating tubes, of a boiler structure mounted above the jacket and comprising heating tubes and a magazine tube, and a circular series of heating tubes extending downward within the

water-jacket and forming a continuation of the magazine tube, a heating coil arranged within the water-jacket, below the radial heating tubes, and connected with the jacket and the said boiler structure, and a grate at the lower end of the jacket, substantially as herein described.

No. 27,463. Refrigerator. (*Glacière.*)

Vincent Brosseau, Sherbrooke, Que., 18th August, 1887; 5 years.

Claim.—A refrigerator or preserving room R, having a double partition with space S filled with saw-dust, space I filled with ice, double outside partitions S¹ filled with saw-dust or other suitable material, passage F, floor F, ventilator v, top w and doors D, all combined and arranged as described and shown.

No. 27,464. Attachment for Car Seats.

(*Coussin pour sièges de chars.*)

Max Russack, St. Louis, Mo., U. S., 18th August, 1887; 5 years.

Claim.—1st. In an attachment for car seats, the combination of a back or support made of two solid parts hinged together, and one bearing a head rest, and a compressible fastening secured to the back of one part for securing the latter to one arm or back of the seat, but not interfering with the folding together of the two parts, substantially as set forth. 2nd. An attachment for car-seats, made in two parts hinged together and adapted to be folded, and provided with hooks or their equivalents for engaging with the seat, substantially as set forth.

No. 27,465. Manufacture of Whiting.

(*Fabrication du blanc de craie.*)

James Quinn, Jr., Grand Rapids, Mich., U. S., 18th August, 1887; 5 years.

Claim.—1st. A method of producing a whiting from chalk, made from calcined gypsum, which consists, first, in mixing ground calcined gypsum with a sufficient quantity of water to set the same into a solid mass, secondly, placing the same in a strong heat to produce a hard chalk, and, thirdly, grinding this chalk very fine, whereby a pure superior article of whiting is produced, substantially as described. 2nd. A pure whiting, consisting of finely pulverized chalk, produced from calcine ground gypsum, which has been previously set and hardened, substantially as described.

No. 27,466. Construction and Propulsion of Vessels. (*Construction et propulsion des vaisseaux.*)

Thomas J. Hanlen, Macon, Ga., U. S., 18th August, 1887; 5 years.

Claim.—1st. The combination, in a vessel, of the hull having a central longitudinally-ranging channel B in its bottom, and provided above said channel with bottomless casings M, opening therein to the hangers E having bearings for the shaft F, the shaft F journaled in said bearings, and provided with cranks I, and propellers G, the pillow block N, the shaft K journaled in said block and in the casings M, and provided with cranks k within said casings, and with cranks L, L, between the same, and the pitmen J connecting crank k and I, substantially as and for the purpose specified. 2nd. A vessel, having its hull formed with a longitudinal channel B, and with openings J leading through its bottom into said channel, and provided with bottomless casings M fitted over the openings J, the vertical walls of said casings being cast with a bed-plate A, and bolts connecting said bed-plate with the hull, substantially as set forth.

No. 27,467. Nursing Bottle. (*Biberon.*)

Walter F. Ware, Camden, N. J., U. S., 18th August, 1887; 5 years.

Claim.—1st. In a nursing bottle, the combination of a stopper B, sucking tube D, air inlet E piercing the said stopper and open above, but closed below, said tube F provided with side air opening G and flexible ring or collar S covering said opening, the said parts arranged and operating substantially as described. 2nd. In a nursing bottle, the combination of a stopper B, sucking tube D, air inlet E, tube F provided with side opening G from said inlet E, flexible ring or collar I covering said opening, the said parts arranged and operating substantially as described. 3rd. In a nursing bottle, the combination of a stopper B provided with soft packing B¹, sucking tube D, air inlet E, tube F, provided with side opening G, from said inlet E, flexible ring or collar I covering said opening, the said parts arranged and operating substantially as described.

No. 27,468. Art of Electric Welding.

(*Mode de soudage électrique.*)

Elihu Thomson, Lynn, Mass., U. S., 18th August, 1887; 5 years.

Claim.—1st. The herein described improvement in electric welding, consisting in applying heat from an external source to the parts to be joined at or near the welding junction simultaneously with the flow of the electric current. 2nd. The herein described improvement in electric welding, consisting in condensing the welding junction by hammering simultaneously with the heating of the parts by the electric current. 3rd. The combination, with the clamps for holding metal pieces for welding by electric currents, of means, such as pipes and passages, for circulation of cooling fluid for cooling said clamps.

No. 27,469. Apparatus for Electric Welding.

(*Appareil de soudage électrique.*)

Elihu Thomson, Lynn, Mass., U. S., 18th August, 1887; 5 years.

Claim.—1st. The herein described art of effecting union between two pieces of metal, consisting in holding the same in contact at the point of union, and simultaneously passing a current of electricity through the joint of a power to fuse and unite the pieces, as and for

the purpose described. 2nd. The process or art of electric welding, consisting in the application of heavy currents to traverse a joint to be welded, and the simultaneous application of a pressure or force tending to move together the pieces to be welded. 3rd. The process or art of causing union between the ends of metal pieces in contact, by simultaneous application of fusing currents of electricity, an mechanical pressure of the contact. 4th. In an apparatus for electric jointing of metals, suitable clamps for holding the pieces to be joined movable toward one another, and means, such as a spring, for exerting a pressure for forcing the pieces into contact, and means of applying fusing currents of electricity, while such pieces rest in pressure contact, as described. 5th. The combination, in an apparatus for electric welding, of two arms or supports L, L, connected with a source of electric current, removable dies or holding clamps carried by said arms, and means whereby said arms may be pressed toward one another, as and for the purpose described. 6th. The combination, in an apparatus for electric welding, of clamps or holders for grasping the pieces to be welded, connections from said clamps to a suitable source of electric current, and an adjustable spring, or its equivalent, as described, for adjusting the force with which the pieces are pressed toward one another during the operation of welding. 7th. In an apparatus for electric jointing of metal wires, bars, etc., a primary feeding line connected to any suitable source of current and controlled by a switch, and a secondary fusing or welding circuit connected to the piece to be welded, and which are held in pressure contact, together with suitable means of transfer of energy from said primary line to the circuit of the fusing or welding apparatus, as described. 8th. The art or process of electric welding, consisting in applying to suitably guided and clamped pieces to be joined, a powerful electric current at the junction, simultaneously with a pressure whereby upon incipient fusion at the joint a complete union is effected.

No. 27,470. Apparatus for Electric Welding. (*Appareil de soudage électrique.*)

Elihu Thomson, Lynn, Mass., U. S., 18th August, 1887; 5 years.

Claim.—1st. In an apparatus for electric jointing or welding, a source of heavy currents and means for regulating the same, in combination with devices for holding the pieces to be welded, and with a means of imparting a pressure tending to force such pieces together. 2nd. In an apparatus for electric jointing or welding, the combination, with devices for holding pieces to be welded, of a coil wound upon an iron core and connected with a source of electricity, a secondary coil or circuit of low resistance connections from said secondary coil to the holding devices, and means for varying the magnetic inductive effects of the core upon the secondary, as and for the purpose described. 3rd. In an apparatus for electric jointing or welding, the combination, with devices for holding the pieces to be welded, of an induction apparatus wound with two coils, one of low resistance as compared with the other connections from the low resistance coil to the holding devices, and a source of electric current connected with the coil of comparatively high resistance. 4th. The combination, with the clamping blocks and means for connecting the same with a source of electricity, of a stop-plate O having a thin portion against which the parts to be welded may be abutted, and a thicker portion against which the clamp blocks may abut so as to determine their distance apart in the operation of inserting parts to be welded. 5th. In an apparatus for electric welding, a regulable source of current of electricity, and means of passing the same through the pieces to be welded, and across their surfaces of contact, in combination with means for exerting a regulable pressure upon such surfaces, as described. 6th. An apparatus for electric welding, consisting of a primary coil fed by alternating currents, means for regulating the effect of said currents upon the secondary coil in inductive relation thereto, clamps for holding the pieces to be joined so as to contact with each other at the point of junction, and means for pressing said pieces together at the point of junction, as described.

No. 27,471. Hand Fire-Extinguisher.

(*Extincteur d'incendie à main.*)

John E. Long, New York, N. Y., U. S., 18th August, 1887; 5 years.

Claim.—1st. In a hand fire-extinguisher, the combination, with a portable reservoir and with a pump thereto, of a valvular device attached to and actuated by the piston rod of the pump to control the flow of the fluid from the reservoir to the pump. 2nd. In a hand fire-extinguisher, the combination, with a portable reservoir and a pump attached thereto, of a valve mounted upon the piston rod to close the passage leading from the reservoir to the pump. 3rd. In a hand fire-extinguisher, having a reservoir and a pump connected therewith, a valve arranged upon the piston rod of the pump adapted to close the passage leading from the reservoir to the pump, substantially as and for the purpose set forth. 4th. In a hand fire-extinguisher, the combination, with a reservoir, a pump connected therewith, and a valve mounted upon the piston rod of the pump, adapted to close the passage between the reservoir and the pump, of devices, substantially such as described, for retaining the valve in its closed position. 5th. In a hand fire-extinguisher, the combination of a reservoir, a force pump connected therewith, a valve operated by the piston rod of the pump to close the passage from the reservoir to the pump, and mechanism whereby the valve may be held in its closed position. 6th. In a hand fire-extinguisher, the combination of a portable reservoir, a pump connected therewith and adapted to withdraw fluid from the reservoir and eject it through a nozzle, a valve mounted upon the piston rod of the pump and adapted to close the passage from the reservoir to the pump and locking device to hold the valve in its closed position or to release the same. 7th. In a hand fire-extinguisher, the combination, with a reservoir, and a pump connected therewith, of a combined air vent and filling orifice, substantially such as described. 8th. In a hand fire-extinguisher, the combination, with a portable reservoir and with a force pump attached to and connected therewith, of a valvular device interposed between the pump and the reservoir, and adapted to close or open the passage from the one to the other, substantially as and for the pur-

pose set forth. 9th. In a hand fire-extinguisher, the combination, with a reservoir for containing the extinguishing fluid, of a combined air-vent and replenishing orifice consisting of a cylindrical projection, a valve-seat thereon, and a valve adapted to close said orifice or to be removed to leave said orifice clear for the introduction of the fluid into the reservoir. 10th. In a hand fire-extinguisher, the combination, with a reservoir for holding the extinguisher fluid, of a cylindrical projection M thereon, a valve-seat *m*1, a closing-cap N, a valve P and operating stem O and vent-opening *m*2, all substantially as and for the purpose set forth.

No. 27,472. Barbed Wire. (*Fil de fer barbelé.*)

Edwin A. Beers, North Springfield, Mo., U.S., 18th August, 1887; 5 years.

Claim.—The herein-described barbed wire, the same consisting of the line-wires, the barb-wire and the shield, combined substantially as described.

No. 27,473. Edge Trimming Machine for Boots and Shoes. (*Astic de cordonnier.*)

Victor Beauregard, St. Hyacinthe, Que., 18th August, 1887; 5 years.

Claim.—1st. In an edge trimming machine, the herein-described combination, with a tubular knife, of a hollow shaft carrying same, all substantially as set forth. 2nd. The combination, in an edge trimmer, of a tubular knife with open cutting edges, and a hollow shaft on which it is mounted, all substantially as described. 3rd. The combination, with the shaft B carried in frame and suitably rotated, of knife C, sole guard D and welt guard E both secured to frame, all as and for the purposes set forth. 4th. The combination, in an edge trimmer, of a rotating shaft, a tubular knife carried on the end of same, and a tube F secured to knife, all as and for the purposes described.

No. 26,474. Manufacture of Laundry and other Soaps. (*Fabrication du savon de buanderie et autre.*)

Nicholas J. Clute, James M. Aubrey and Preston A. Rose, Chicago, Ill., U.S., 18th August, 1887; 5 years.

Claim.—1st. The making of soaps by the combination of the so-called "tank-water" or the water formed in the rendering of lard, tallow or other fats, with resin and an alkali, substantially as set forth. 2nd. The combination, in soap-making, of the so-called "tank water" or the water formed in the rendering of lard, tallow, or other fats, with resin, tallow or other adipose or oleaginous substances usually used in making soaps, and an alkali, substantially as described. 3rd. In the making of soaps by the combination of the so-called "tank-water" or the water formed in the rendering of lard, tallow, or other fats, with tallow or other oleaginous or adipose substances usually used in the making of soaps and an alkali, substantially as described.

No. 27,475. Hydrocarbon Furnace.

(*Foyer à hydrocarbure.*)

Benjamin A. Moody, Boston, and Charles Carroll, Dedham, Mass., U.S., 18th August, 1887; 5 years.

Claim.—1st. The combination, with a furnace having a closed bottom in place of the usual grate, a bed of refractory material supported by said bottom and means for spraying liquid hydrocarbon onto the refractory material, substantially as set forth. 2nd. The combination, with a furnace provided with a bottom layer of fire-brick, suitably supported at the bottom of the furnace, of a bed of refractory material overlying said fire-brick, and a liquid hydrocarbon burner, to which steam is led to spray the hydrocarbon onto the refractory material, substantially as described. 3rd. The combination, with a furnace provided with a bottom layer of fire-brick, of a super-heater supported thereon, a bed of refractory material overlying said fire-brick and superheater, and a liquid hydrocarbon burner to which steam is led to spray the hydrocarbon onto the refractory material, substantially as described. 4th. The combination, with a furnace provided with a bottom layer of fire-brick, and having an air orifice 11, of a superheater supported on said fire-brick and connected with a steam-generator, a bed of refractory material overlying said fire-brick and superheater, and a liquid hydrocarbon burner to which the steam from said superheater is led to spray the hydrocarbon onto the refractory material, substantially as described. 5th. The combination, with a furnace provided with refractory material, as a heat retainer, of a hydrocarbon burner provided with steam and oil chambers, and having orifices and a valve for controlling one of said orifices, substantially as described. 6th. A hydrocarbon burner provided with steam and oil chambers, and supply pipes leading thereto, substantially as described. 7th. A hydrocarbon burner provided with steam and oil chambers and having orifices leading therefrom, one of said orifices being adjustable with relation to the other, substantially as described. 8th. The combination, with a hydrocarbon burner provided with steam and oil chambers, and supply pipes leading thereto, of a valve carried by the burner for controlling one of its orifices, substantially as described. 9th. The combination, with a hydrocarbon burner provided with steam and oil orifices, of an extending face, as 4, substantially as described. 10th. The combination, with a hydrocarbon burner provided with steam and oil orifices, of a vertically adjustable extending face, as 4, substantially as described. 11th. The combination, with a hydrocarbon burner, provided with a steam orifice, of an oil orifice capable of vertical adjustment with relation to said steam orifice, substantially as described. 12th. The combination, with a hydrocarbon burner provided with steam and oil orifices and a valve for controlling one of said orifices of an extending force, as 4, substantially as described. 13th. The combination, with a hydrocarbon burner provided with steam and oil chambers, and steam and oil orifices leading therefrom, of a valve for control-

ling the size of one of said orifices and an extending face, as 4, substantially as described. 14th. The combination, with a hydrocarbon burner provided with chambers 22, 25 and orifices 23, of a valve, as 28, for controlling the size of the orifice 3, substantially as described. 15th. The combination, with a hydrocarbon burner provided with chambers 22, 25, having orifices 2, 3, of a valve, as 28, for controlling the size of the orifice 3, and an extending face, as 4, substantially as described. 16th. The combination, with a hydrocarbon burner, of a pipe for supplying steam to said burner to spray the hydrocarbon, and a regulating valve, as 18, whereby the pressure of the steam admitted may be controlled, as set forth. 17th. The combination of a hydrocarbon burner, pipes, as 20 and 27, to respectively supply steam and oil to said burner, valves, as 30 and 31 in said pipes, and devices, substantially as described, whereby said valves may be operated simultaneously or either one singly, as set forth. 18th. The combination of the hydrocarbon burner, the pipes 20 and 27, the valves 30 and 31, the tubular rod 34, having a lever 36 on which is a segment 41 and a spring dog, a fixed segment 37 adapted to lock said dog, connections between said rod and the valve 30, the rod 38 passing through the rod 34, and provided with a spring dog adapted to engage the segment 41 and connections between the rod 38 and the valve 31, as set forth.

No. 27,476. Land Cultivator. (*Scarificateur.*)

Thomas Condon and Alma Pickett, Kensington, P.E.I., 18th August, 1887; 5 years.

Claim.—1st. The peculiar shape or twist of the shears A, substantially as and for the purpose herein set forth. 2nd. The zigzag shape of frame, substantially as and for the purpose hereinbefore set forth.

No. 27,477. Wire Nail Machine.

(*Machine à clou de fil de fer.*)

Louis A. Fontaine, Rochester, N.Y., and Christian F. Collot, Chicago, Ill., U.S., 18th August, 1887; 5 years.

Claim.—1st. The combination, with a wire-nail machine, of a stationary recessed guide-block H, and cutting and pointing dies I, I, fitting within the recess in the guide-block, and reciprocated by power applied directly to them, substantially as and for the purpose set forth. 2nd. The combination, with a wire-nail machine, of a stationary recessed guide-block H, and adjustable cutting and pointing dies I, I, fitting within the recess in the guide-block, and reciprocated by power applied directly to them, substantially as and for the purpose set forth. 3rd. In a wire-nail machine, the combination, with the driving shaft, operating the plunger and feed devices, and the heading-dies, of cam-pulleys L on the driving-shaft, cutting and pointing dies I, I, and rock-shafts K connecting the dies I, I, with the cam-pulleys L, whereby rotation of the driving-shaft oscillates the rock-shafts to reciprocate the cutting and pointing dies in the same plane at right angles to the wire, substantially as described. 4th. In a wire-nail machine, the combination, with the driving-shaft operating the plunger and feed devices and the heading dies, of pulleys L on the driving-shaft provided with cam-grooves *l*, cutting and pointing dies I, I, supported in a guide-block on the frame of the machine, and rock-shafts K supported in bearings at the sides of the machine, and having each a vertical arm K₁ linked to a cutting and pointing die, and a vertical arm K₂ carrying a friction roller within a groove *i*, whereby rotation of the driving-shaft and pulleys L oscillates the rock-shafts K, and reciprocates the dies I, I, laterally in the same plane at right angles to the wire, substantially as described. 5th. In a wire-nail machine, the combination, with the driving-shaft operating the plunger and feed devices and the heading-dies, of pulleys L on the driving-shaft provided with cam-grooves *l*, adjustable cutting and pointing dies I, I, supported in a covered guide-block on the frame of the machine, rock-shafts K supported in bearings at the sides of the machine, and having each a vertical arm K₁ linked to a cutting and pointing die, and a vertical arm K₂ carrying a friction-roller within a groove *i*, whereby rotation of the driving-shaft and pulleys L oscillates the rock-shafts K and reciprocates the dies I, I, laterally in the same plane at right angles to the wire, and an oscillatory striker-arm M actuated to strike by a spring P and raised after each stroke by a notched pulley N on the driving-shaft, substantially as described.

No. 27,478. Machine for Producing Type-Bars. (*Machine à faire les barres de caractères.*)

The National Typographic Company, New York, N.Y., (assignee of Ottmar Mergenthaler, Baltimore, Md.), U.S., 18th August, 1887; 5 years.

Claim.—1st. The magazine for a type-composing mechanism, consisting of the series of independent vertical tubes, and the transverse connecting-bars secured to the tubes at their upper and lower ends, substantially as described. 2nd. The combination, substantially as described and shown, of a main frame, the elevated distributing mechanism, the assembling mechanism, and the intermediate series of magazine tubes connected with each other and attached to the frame for instantaneous removal, whereby the entire magazine may be removed for inspection or to permit the introduction of another magazine. 3rd. In combination with the notched bars at the top and bottom, the removable magazine-tubes provided with projections to sustain them. 4th. In combination with the magazine-tubes, the key mechanism, sustained thereby. 5th. In combination with the overhead frame, the magazine tubes suspended therefrom, and the key mechanism sustained by the tubes, whereby the simultaneous removal of the magazine and the keys is permitted. 6th. In combination with the magazine-tube, an oscillating key located thereunder, provided with a slot or recess for the passage of the type there-through. 7th. In combination with a magazine tube, an oscillating key located thereunder, its upper edge acting to close the mouth of the magazine-tube, and sustain the column of type therein. 8th. In combination with the magazine tube and a plate thereunder perforated for the passage of the type, an intermediate movable key provided with a type-passage, which registers alternately with the

magazine above and the perforation in the plate below, whereby the matrices are delivered one at a time. 9th. In combination with the magazine-tube above, and a receiving throat or opening below, the intermediate key provided with a vertical type-passage and pivoted midway of its height, whereby its upper and lower edges are caused to move in opposite directions, to register alternately with the magazine and the throat. 10th. The feeding key, consisting of the body provided with a type-passage, a shaft or spindle, and a finger-lever rigidly connected thereto. 11th. The series of oscillating keys, with type-passages and lateral arms or levers, arranged in parallel lines, the arm or finger-piece of one overlying the body of another, as described. 12th. The finger-keys provided with vertical passages for the type, and with the upright arms, in combination with the bar having elongated notches, the vibratory nozzle and its arm connected with the notched bar, as shown. 13th. The series of oscillating keys with type passages and rigid oblique arms or finger-pieces, their bodies arranged parallel with each other, and the arms alternated in arrangement, as described, so that the arms of the adjacent keys do not lie adjacent to each other, whereby the arrangement of the keys in close order is permitted. 14th. The combination, substantially as herein described and shown, of a stationary type passage or guide, a pipe or conductor for delivering a blast longitudinally through said passage, a series of magazine tubes located above the passage, and a key mechanism, whereby the type are permitted to descend by gravity into the passage. 15th. A continuous stationary type-passage, and a series of magazine-tubes having their delivery ends directly over said passage, a blast-pipe to direct a blast longitudinally through the passage, key mechanism, substantially as described, to discharge the type one at a time into said passage, and mechanisms, substantially as described, operated by the keys to stop the action of the blast during the descent of the type. 16th. The longitudinal type-passage and the pipe directing a blast there-through, in combination with a series of finger-keys to deliver type therein, and a single blast-stopping device connected with and operated by the series of keys, whereby the action of either key is caused to stop the blast. 17th. In a machine having a horizontal guide or channel into which type are delivered in an upright position, and in combination with said guide, a blast mechanism which delivers the blast against the side faces of the type, whereby the type may be assembled side by side by the direct action of the blast. 18th. In an assembling or composing mechanism, a substantially horizontal guide or channel provided with longitudinal shoulders at its top to sustain the upper ends of the type, and a pipe to direct a blast lengthwise of said channel, whereby the type may be maintained in an upright position, delivered through the channel, and assembled side by side. 19th. In combination with a horizontal type-channel, and a pipe directing a blast therethrough, magazines and key mechanism, substantially as described, acting to deliver the type endwise onto and across the channel, whereby they are presented in position to receive the blast on their side faces instead of their ends. 20th. In combination with the type with sustaining shoulders and the notch at the base, the guide or channel and the bottom rail to enter the base of the type and prevent the type from turning in the channel. 21st. In combination, with type having sustaining shoulders, horizontal guides supporting the type both at the top and bottom in an upright slightly inclined position. 22nd. In combination with the externally-shouldered type, the horizontal guide to support the shoulders and a bottom support for the type. 23rd. In a mechanism for assembling type, a type-guide, adapted, substantially as described, to maintain the type in an upright position, a pipe for delivering a blast to advance the type through the guide in an upright position, and detent devices, substantially as described, to engage the advancing type and prevent them from rebounding upon coming in contact with those which preceded them. 25th. In combination with a type-guide or channel, two blast-delivering throats located at different points in the length of the guide, and directing their blasts in the same direction, whereby the type are subjected to their successive action. 25th. In combination with a type-channel or guide, and a blast pipe or throat located at one end, a series of type-magazines adjacent thereto, those which contain the heaviest type arranged nearest the blast device. 26th. In combination with a guide or channel adapted to sustain shouldered type in an upright position, as described, the two blast pipes located in opposite sides of the channel and opposite each other, whereby the blast is delivered against the two edges of a type simultaneously. 27th. The type-guide or channel, in combination with the finger-keys to deliver type therein, the blast-nozzle and devices, substantially as shown, connecting the keys with the nozzle, whereby the blast is diverted from the channel during the entrance of the type. 28th. In combination with the type-channel, the vibratory blast nozzle, the mould, and the air-passage from the nozzle to the mould, whereby the blast may be applied alternately for advancing the type and cooling the mould. 29th. A type-guide or channel through which the type advance in an upright position, in combination with a resisting-arm to arrest the advance of the type, and a blast device directing the blast lengthwise of the guide, whereby the type are assembled by the action of the blast side by side. 30th. A type-guide or channel, type formed to advance in an upright position therethrough, a blast-pipe directing air lengthwise of the channel, a resistant, as *a*, to arrest the advancing type, and a detent *H* to prevent the rebound of the type. 31st. In combination with the type-guide and the yielding resistant pawls or detents *H*, and means substantially as described, for imparting an automatic reciprocation thereto, whereby the type advancing between the pawls are carried forward in a compact line. 32nd. In combination with the type-guide or channel, the two pawls, their carrier and the weighted cord and cam for reciprocating the pawls. 33rd. In combination with the pawls and pawl carrier, the weighted retracting-cord, and the advancing cam, and a device for advancing the carrier beyond the point to which it is advanced by the cam, whereby the type are first assembled in compact order, and subsequently advanced in a body. 34th. In combination with the movable type-sustaining head, the clamp provided with the rib to engage the head, substantially as described. 35th. In combination with the type, the mould provided with an aligning rib, to engage the series of type, substantially as described. 36th. In combination with the sustaining-head *L*, the clamp *O* provided with the rib to engage the head, and the opposing mould provided with the aligning

rib to engage the type. 37th. In combination with a blast-delivery pipe, the type-guide or channel having its bottom closed for a portion of its length and open for the remainder, whereby the type are relieved in part from the force of the blast and the introduction of long space-bars permitted. 38th. The type having external sustaining-shoulders, and a recessed upper end, as described, each type being adapted to receive the lower end of a second type, whereby the type are arranged to guide one another in the magazine. 39th. A series of type having their ends adapted, substantially as described and shown, each to interlock at the lower end with the upper end of another, when they are arranged in column form one upon another, whereby the type are prevented from turning cornerwise and binding in the magazine-tubes. 40th. The series of externally-shouldered type, provided with aligning notches *i*, adapted to register with each other when the type are assembled side by side. 41st. A series of type differing in thickness according to the characters borne by them respectively, but all reduced to an equal thickness at one or more points by a groove or recess *a*, to permit the separating devices to remove one type at a time from the line. 42nd. A type having in its upper edge a flaring or V-shaped notch, with duplicate suspending shoulders in its edges, as described, whereby different pairs of opposing shoulders are separated horizontally different distances. 43rd. A type having in its upper edge, a series of opposing shoulders arranged in pairs, two or more pairs separated horizontally an equal distance, and the remaining pairs separated horizontally different distances. 44th. A type-distributing rail having its surface divided into longitudinal sections, provided with longitudinal type-sustaining ribs or teeth, one section differing from another in the number of its ribs. 45th. A type-distributing rail divided into longitudinal sections, provided with longitudinal type-sustaining ribs or teeth at different heights, each section differing from each other in the number or the relative positions of the ribs, or both. 46th. The sustaining-rail divided into longitudinal sections having longitudinal ribs, each section differing from all the others in the number or relative arrangement of its shoulders, or both, in combination with a series of type toothed to engage the rib, their teeth being arranged as to number and relative position so that type bearing the same character differ from all others, so as to disengage from their individual sections of the bar and no others. 47th. A distributing-rail provided with type-sustaining shoulders, differing in number at different points in its length, in combination with a series of type provided with corresponding shoulders differing in number on the respective type. 48th. A distributing-rail divided into two or more longitudinal sections, each section provided with two or more pairs of shoulders, differing in their vertical arrangement from those on the other sections, in combination with a series of type, each provided with two or more pairs of shoulders differing in their vertical position or relation from those of the other type, whereby each type may be separated from others having like number of shoulders. 49th. The sectional distributing-rail having one or more pairs of ribs on each section in line with ribs of the next section, and others out of line therewith, whereby the transfer of type from one section to the next is secured. 50th. In combination with the distributing-rail, the travelling plates provided with independent gravitating pins to engage the type. 51st. In combination with the distributor-rail, the travelling blocks, their gravitating pins and the plate *e* to sustain the pins until they have advanced to the proper point for action. 52nd. In combination with the distributing-rail, the travelling plates, the type advancing pins therein, and the reciprocating depressor *f* to insure the descent of the pins. 53rd. The rails *A* having the elevated delivery ends, in combination with the slide to advance the type and the lifting-finger, whereby the type are lifted to and advanced upon the elevated ends of the rails. 54th. In combination with the sustaining-rails *A*, the lifting-finger and overlying rail to prevent the rising of any other than the forward type. 55th. In combination with the distributor-rail and the lifting-finger, the rails *A*, and the travelling plates *D* provided with gravitating pins, the pin depressing arm connected to and operated by the arm which carries the lifting-finger, whereby the descent of the pins is insured before a matrix is lifted behind them. 56th. The combination, substantially as shown, of the casting mechanism, the ejector for delivering the castings therefrom, the galley provided with spring-catches or detents at its lower end, and the vertically-reciprocating carrier or lifting device to which the castings are delivered by the ejector, substantially as described and shown, whereby the castings are assembled automatically in the order of their delivery. 57th. The rotary mould and the ejector *Q*, in the combination with the inclined plate *R*, the lifting-plate *S*, and the galley provided with automatic dogs or catches in the lower end to retain the type-bars. 58th. In combination with the type-guide or channel, the rails *V* to sustain the space-bars, the feed-slide *W* and the finger-key connected with and arranged to operate the slide, substantially as described, whereby the operator is enabled to place the space-bars directly and instantly in line with the assembled type. 59th. In combination with the rails *V* to sustain the space-bars, the tube or guide extending upward therefrom, and the type-sustaining rails located above the tube and adapted, as described, to release the space-bars, and permit their descent into the tube before releasing the type. 60th. In combination with the distributor rail, the carrying plates *d*, the flexible bands having the plates secured thereto and the pulleys to guide said bands.

No. 27,479. Watch. (*Montre*)

The Waterbury Watch Company, (assignee of George E. Hart), Waterbury, Conn., U.S., 18th August, 1887; 5 years.

Claim.—1st. A watch movement having a time train, which is composed of a going barrel and arbor, a second arbor having a pinion and toothed wheel, a third arbor provided with a pinion and toothed wheel, a fourth arbor having a pinion and a duplex escape wheel, and a balance wheel and arbor, said parts being combined substantially as and for the purpose specified. 2nd. In a time piece, the combination of a balance wheel and arbor, a duplex escape wheel with its arbor and pinion, a third arbor provided with a toothed wheel and pinion, a second arbor having a toothed wheel and pinion, a spring barrel and arbor, a toothed wheel upon the spring barrel,

and dial wheels which engage with and receive motion from said spring barrel toothed wheel, substantially as and for the purpose shown. 3rd. In a time piece, the combination of independently journaled dial wheels, with a tooth wheel which is placed upon and rotates with the main spring barrel or arbor, and engages directly with one of said dial wheels, substantially as and for the purpose set forth. 4th. In a time piece, in combination with independently journaled dial wheels, and an engaging wheel which is journaled upon and connected by friction with the spring barrel or arbor, means whereby said friction moved wheels may be rotated in either direction upon its bearing, substantially as and for the purpose shown and described. 5th. In a time piece, the combination of a main spring arbor upon which is journaled a going barrel, a winding wheel that is secured upon and is adapted to rotate said arbor, a setting wheel which is journaled upon said barrel and caused to rotate therewith by friction, a stem arbor which has journaled thereon a winding pinion that is in constant engagement with said winding wheel, and has rigidly secured to inner end a setting pinion, which by the longitudinal inward movement of said stem arbor may be caused to engage with said setting wheel, together with means whereby said winding pinion will be connected with and rotatable by said stem arbor when the latter is at the outer limit of its longitudinal motion, and will be disconnected from said stem arbor when the same is moved longitudinally inward, substantially as and for the purpose specified. 6th. As a means for winding the main spring of a watch, a pinion secured to the inner end of the stem arbor, a second pinion journaled upon said arbor in rear of the fixed pinion, and provided with a pawl or tooth which is adapted to be engaged by the teeth of said fixed pinion, thereby cause the motion of said stem arbor to be transmitted to the main spring arbor, substantially as and for the purpose shown. 7th. As a means for winding the main spring of a watch, a pinion secured to the inner end of a stem arbor, a second pinion journaled upon said arbor in rear of the fixed pinion, and provided with a spring pawl which is adapted to be engaged by said journaled pinion, and is adapted to transmit the motion of the same to the main spring arbor, substantially as and for the purpose specified. 8th. As a means for connecting the fixed pinion of the stem arbor with the pinion journaled upon said arbor, a pawl or tooth which projects from one of said pinions, and is adapted to engage with or to be engaged by the teeth of the other pinion, substantially as and for the purpose set forth. 9th. As a means for connecting the fixed pinion of the stem arbor with the pinion journaled upon said arbor, a spring pawl which is secured to the face of one of said pinions, and is adapted to engage with or to be engaged by the teeth of the other pinion, substantially as and for the purpose shown. 10th. As a means for combining an enamelled or porcelain dial with a watch movement, a metal plate which is cemented upon the back side of the dial, and is fitted to and adapted to be secured upon the movement plate, substantially as and for the purpose specified. 11th. As an improvement in watches, in combination with an enamelled or porcelain dial, a metal plate which is secured to or upon its arbor face, and is adapted to be fitted over and attached to the movement plate of a watch, substantially as and for the purpose shown. 12th. As an improvement in watches, a dial plate which is fitted over and adapted to be secured upon the movement plate of a watch, in combination with said movement plate and with an enamelled or porcelain dial that is cemented upon or attached to the front side of said dial plate, substantially as and for the purpose set forth. 13th. As an improvement in watches, the combination of an enamelled or porcelain dial, a metal plate which is secured upon its rear face, and a front movement plate that is adapted to receive said dial plate, and to have the same attached thereto, substantially as and for the purpose shown and described. 14th. As a means for limiting the depth of engagement of the teeth of a stem rotated spur wheel with the teeth of a dial spur wheel that rotates in a plane having a right angle to the plane of rotation of the same, a metal disc which is angled upon or against the outer face of said stem rotated wheel, and impinged upon the ends of the teeth of said dial wheel, substantially as and for the purpose specified. 15th. As a means for limiting the depth of engagement of the free end of a spring pawl with the teeth of a spur toothed ratchet wheel, a metal disc which is secured upon the outer side of said wheel, and is adapted to be impinged by the end of said spring, substantially as and for the purpose shown. 16th. In combination with the dial wheels of a watch, and with a winding wheel which is journaled upon a rotatable longitudinal movable stem arbor, and is provided with or upon its face with a spring pawl, two toothed pinions that are secured rigidly upon the inner end of said arbor, and a metal disc which is placed between the contiguous faces of said pinions, substantially as and for the purpose set forth. 17th. As an improvement in watches, a movement plate composed of two feet sections which are adapted to be secured together with their inner ends in contact, in combination with each other and with a regulator that is pivoted between and projects from said sections, substantially as and for the purpose specified. 18th. As an improvement in watches, a movement plate which is composed of two super-imposed separable sections, in combination with each other and with a regulator arm, and a balance jewel that are placed between the sections and are held in place, by the means employed for securing said sections together, substantially as and for the purpose shown. 19th. As an improvement in watches, a movement plate which is composed of two super-imposed separable sections, in combination with each other, and with a regulator that is pivoted at one end between said sections, and at its opposite outer end is adapted to be moved over a scale which is formed upon the inner section, substantially as and for the purpose set forth. 20th. As an improvement in watches, a movement plate which is composed of two super-imposed separable sections, in combination with each other and with a regulator which has one end pivoted between said sections, and its opposite outer end contained within a recess that is formed in the outer section, and adapted to be moved over a scale which is provided upon the inner section, substantially as and for the purpose shown and described. 21st. As an improvement in watches, a movement plate which is composed of two super-imposed separable sections, that are adapted to contain between their inner faces, and to hold in operative position therein a regulator arm, a balance jewel and winding wheels, in combination with said parts and with means for securing said sec-

tions together, substantially as and for the purpose specified. 22nd. The method employed for blanking out watch balances, which consists in impressing the general form of the rim and peripheral projections of a balance upon a disc of metal, by means of a forging die, and then forming the central arm and removing the surplus metal from the inner and outer peripheries of said rim by means of a cutting die, substantially as and for the purpose specified. 23rd. The method employed for forming watch balances, which consists in impressing the general form of the rim and peripheral projections of a balance upon a disc of metal, by means of a forging die then forming the central arm, and removing the surplus metal from the outer and inner peripheries of said rim by means of a cutting die and lastly subjecting the wheel thus formed to the action of a forging die, that is provided with a recess which corresponds to the size and shape of the finished balance, substantially as and for the purpose shown.

No. 27,480. Sash Fastener for Windows.

(Arrête-croisée.)

Frederick J. Biggs (co-inventor with Samuel Pardoe), London, Eng., 18th August, 1887; 5 years.

Claim.—1st. The combination, to form a sash fastener, of a back-plate formed with a projecting flange at its front edge, a front plate formed with a channel piece at its rear edge, to engage said flange when the window is closed, and a latch pivoted to the back plate, adapted to turn horizontally outward over the front plate, and formed with an inclined under surface, which presses downwardly on said channel piece, when the latch is turned outwardly, substantially as set forth. 2nd. The combination to form a sash fastener of the plate B, the plate C formed with a projecting channel piece, and with the hook F bevelled on its under side, and the latch D pivoted to the plate B and constructed when turned out to stand over said channel-piece and under said bevelled hook, substantially as set forth, whereby the latch is pressed down by the bevel of said hook, bears downwardly upon said channel-piece and draws upwardly at its pivot. 3rd. The combination to form a sash fastener, of the plate B formed with a projecting flange at its front edge, the plate C formed with a channel-piece at its rear edge to engage said flange when the window is closed, and with a hook F in front of said channel-piece bevelled on its under side, and the latch D pivoted to the plate B and adapted to turn outwardly over the channel-piece and under the hook, and bevelled on its under side, whereby it wedges downwardly against the channel-piece, being itself pressed downwardly by the hook, substantially as set forth.

No. 27,481. Laying Out and Embalming Table. (Table pour exposer et embaumer les cadavres.)

The Enterprise Manufacturing Company (assignee of Noah T. Shaw), Columbus, Ohio, U.S., 18th August, 1887; 5 years.

Claim.—1st. The combination, with the hinged frame sections, of the hinged tubular legs of unequal lengths, each having a vertical L slot of unequal length, a telescoping foot-section of equal length, and the stop pins *k* fixed to said foot-sections, as shown and for the purpose described. 2nd. The hinged frame sections, provided with hinged legs, and the L-shaped plate-springs *h* having their angle ends secured to the vertical sides of the frame end parts, their straight parts fastened by keepers *h'* to the horizontal part of said end bars, and their free ends bearing upon the cross-bars of the hinged legs, as shown and described.

No. 27,482. Farm Gate. (Barrière de champ.)

John W. Craig and Merchant Randall, Kirkwood, Ill., U.S., 20th August, 1887; 5 years.

Claim.—1st. The combination, with the gate post, of the hanger C secured thereto, and provided with curved slots C₃, C₄, a flanged or channelled roller track-plate D, provided with bolts which pass through the curved slots of the base plate, and a gate, provided with a rail supported upon the rollers and between the flanges of the track-plate, substantially as described. 2nd. In combination, a hanger-plate C, provided with a butt C₂, and with segmental slots C₃, C₄, and a roller track-plate D, provided with bolts *d*₃, *d*₄ to pass through said slots, and with flanges and friction rollers extending respectively above and beyond said base plate, substantially as and for the purpose specified. 3rd. In combination in a sliding and swinging gate, a post, a hanger C having segmental slots C₃, C₄, and a track-plate D provided with bolts *d*₃, *d*₄, substantially as and for the purpose specified. 4th. In combination in a sliding and swinging gate, a post, a hanger C having segmental slots C₃, C₄, a track-plate D provided with bolts *d*₃, *d*₄, and a post E, having brackets *f*₁, carrying pulleys *f*₂, substantially as and for the purpose specified. 5th. In combination in a sliding and swinging gate, a post, a hanger C having segmental slots C₃, C₄, a track-plate D provided with bolts *d*₃, *d*₄, and a bracket G having an arm *g*, substantially as and for the purpose specified.

No. 27,483. Type Matrice, etc., and Mechanism for Distributing the Same.

(Matrice de caractères, etc., et appareil pour distribuer.)

The National Typographic Company, New York, N. Y., (assignee of Ottmar Mergenthaler, Baltimore, Md.), U.S., 20th August, 1887; 5 years.

Claim.—1st. A character matrix or die, having a plurality of suspending shoulders, one above another, each pair separated horizontally to the same extent as those of the other pairs. 2nd. A character matrix or die, having undercut sustaining shoulders at opposite edges, and a central notch or recess having shouldered or undercut edges to engage a sustaining rail, whereby it is adapted to co-operate with two distinct and independent means of suspension. 3rd. A

series of matrices or dies, bearing different letters or characters, and provided with sustaining shoulders, those which bear one character differing in the number of their shoulders from those which bear other characters, whereby the number of the shoulders is rendered available in distributing or assorting the matrices. 4th. A series of matrices or dies, bearing letters or characters, each having suspending shoulders at the sides and also a suspending notch or recess at the middle, those matrices which bear any given character differing in the number of their shoulders of the size of the notch from those which bear other characters, whereby the series is adapted for use in connection with two distinct sustaining and distributing devices. 5th. A series of matrices or dies, provided with sustaining shoulders at the edges, one above another, the number of shoulders differing on the respective matrices, in combination with the sustaining rails, having successive sections with edges or lips at different heights to engage the corresponding shoulders, substantially as described and shown, whereby matrices are carried greater or less distances, according to the number of their shoulders. 6th. In combination, with a series of dies having sustaining shoulders separated horizontally, a uniform distance, but differing in number on the respective dies, two parallel sustaining rails, with inner lips or edges adapted to engage and sustain shoulders, said lips consisting of successive sections differing in height, whereby the matrices passing in from one section to another will be sustained by different shoulders. 7th. A series of matrices, provided with shoulders at different heights, the number of shoulders differing on matrices bearing different characters, in combination with sustaining rails having at different points in their length lips or shoulders at different heights to engage the different shoulders in succession. 8th. A series of matrices, provided with sustaining shoulders, one above another, the number of shoulders differing on different matrices, in combination with sustaining rails, adapted substantially as described, to engage the successive shoulders, as the matrices are advanced thereover. 9th. In combination with main distributing rails, having sections of different heights, and a secondary central rail having sections of different widths, the series of matrices or dies having the shoulders to engage the main rails and the notches to receive the secondary rail, said notches and shoulders graduated, as described, to cause the release of the matrices at different points. 10th. In combination with the distributing mechanism, adapted to sustain the advancing matrices, the endless carrier provided with fingers or forks to advance the matrices, and a lifting mechanism, substantially as described, to place the matrices one at a time, between the forks. 11th. In combination with a series of matrices or types, rails to sustain said matrices, an endless carrier provided with fingers or forks to act upon the matrices, a vertically-reciprocating finger and operating mechanism, substantially as described, whereby the matrices are lifted, one at a time, and inserted between the succeeding fingers. 12th. In a distributing mechanism, a carrier, consisting of an endless chain, a series of blocks carried thereby, fingers or forks arranged to rise and fall endwise on said blocks, and means, substantially as described, for raising and lowering said fingers. 13th. The endless chain, the plates *d* and *e*, connected thereto by springs and guides, the fingers or forks and the rails or cams to effect the depression of the plates. 14th. In combination with the rail *D*, to give central support to the matrices, the carrier having the divided fingers or forks to straddle said rail. 15th. In a distributing mechanism, rails whereon the matrices or dies are supported, and an endless carrier provided with fingers having a vertical motion independent of the carrier, substantially as described, whereby they are adapted to be thrust downward between the rails and between the matrices.

No. 27,484. Feed Water Heater and Purifier. (*Réchauffeur épurateur de l'eau d'alimentation.*)

The Smith Feed Water Heater and Purifier Company (assignee of William J. Smith), Chicago, Ill., U.S., 20th August, 1887; 15 years.

Claim.—1st. In a feed-water heater, the horizontal tubular chamber extending into the boiler, having its inner end hermetically closed, and having perforations in the top, near the entering end, in combination with a horizontal diaphragm fixed within the tubular chamber, and having perforations through the inner end, together with a closed head fitting the outer end of the tubular chamber, and a passage through said head, by which water is admitted into the lower compartment, substantially as herein described. 2nd. A horizontal tubular chamber, extending into the boiler, having the inner end closed, the outer end fixed in the boiler head or sheet, horizontal diaphragm extending through the tubular chamber, perforations being made at the inner end of the diaphragm and near the entering end of the upper part of the tube, in combination with a head fitting the entering end of the tube, and having a slot into which the edge of the diaphragm fits, substantially as herein described. 3rd. A horizontal tubular chamber, extending into the boiler, having its upper part perforated near the entering end, the horizontal diaphragm fitting in said tube, and having perforations through its inner end, in combination with a head fitting the entering end of the tube, and slotted to receive the edge of the diaphragm, a flange and bolts, by which said head is secured in place, and a soft metal packing ring secured to the flange, so as to be compressed by the plate through which the tube passes to make a joint, substantially as herein described.

No. 27,485. Refrigerator Car.

(*Char frigorifique.*)

Willard L. Cook, Omaha, Neb., Collins F. Newton, Topeka, Ks., Charles N. Pratt, William S. Wingard and Howard A. Worley, Omaha, Neb., U.S., 20th August, 1887; 5 years.

Claim.—1st. In a refrigerator car, the combination of the ice chest in the top thereof, the drip troughs and a cold air flue in the bottom of said chest, and capillary conductors entering said troughs and lying against the interior of the walls of the ice chest, and passing through them, substantially as described. 2nd. In a refrigerator car, the ice chest in the top thereof, the cold or descending air flue in the centre, and warm or ascending air flues on the sides of said ice

chest the drip troughs in the bottom of said chest, and the capillary conductors having their lower end within said troughs, and lying against the interior of its walls and passing through them and through the warm air flues, substantially as and for the purpose described. 3rd. The combination of the frame of a refrigerator car, the ice chest in the top thereof, the drip troughs in the bottom of said chest, the cold or descending air flue in the centre and warm or ascending air flues on its sides, with capillary conductors, having one end in the drip troughs in the interior of said chest and passing through its walls, substantially as and for the purpose described. 4th. The combination of the frame of a refrigerator car, the ice chest in the top thereof, the cold or descending air flue in the centre, and warm or ascending air flues on its sides, and horizontal pipes *J* on the outside of the warm air flues, with capillary conductors having one end in the interior of said chest and passing through its walls, and warm air flues, and having the opposite end within the pipes *J*, substantially as and for the purpose described. 5th. The combination of the frame of a refrigerator car, the ice chest in the top thereof, having the central portion of its floor higher than its sides, a cold air descending flue in the centre, having cloths *m* on each side, extending above said floor, and said flue extending beyond the bottom of the hollow walls of said ice chest, with drip pipes in the sides having capillary material entering therein and extending up against the walls of the ice-chest, substantially as and for the purpose described.

No. 27,486. Step Ladder. (*Echelle de vitrier.*)

Samuel Wright and Henry C. Lincoln, Peoria, Ill., U.S., 20th August, 1887; 5 years.

Claim.—1st. The combination, with the step-ladder having the prop-sticks loosely hinged to it, of the brace consisting of the three bars secured together to form the rigid triangle, and loosely attached at its vertices to the prop-sticks and ladder, substantially as and for the purpose specified. 2nd. The combination, with the step-ladder having its prop-sticks loosely hinged thereto, of the triangular brace attached at its lowest corners to the prop-sticks, and at its vertex to the platform of the ladder, and having the cross-bar and link connecting the same to a step of the ladder, substantially as and for the purposes set forth. 3rd. In a joint for permitting the triangular brace to have a reciprocal oscillatory and rotative movement, the combination, with the said brace *C* having the hole *J*₂ of the pin *J* removable in said hole and having the eye *J*₁, and a socket-piece for said eye, substantially as and for the purpose specified. 4th. The combination, with the step-ladder, its prop-sticks and the triangular brace *C*, of the triangular block *J*₄ having the hole *J*₂ therein, the pin *J* removable in said hole and having the eye *J*₁, and the socket-piece *J*₃ for said eye, for the purpose set forth. 5th. The combination, with the step-ladder, its prop-sticks, and the triangular brace, of the block *J*₄ having the hole *J*₂, the strap *J*₅, the pin *J* having eye *J*₁, and the socket-piece *J*₃ for pivoting said pin to the upper step of the ladder, substantially as and for the purpose specified. 6th. In a joint for attaching the lower corner of the triangular brace *C* to the prop-stick *B*, the bolt *K* passing through the prop-stick, and having nut *K*₂, and the strap *K*₁ affixed about the corner of said brace, all combined as and for the purpose set forth. 7th. In a ball and socket joint, the socket *E* having notch *E*₁, in combination with the ball *F* formed of three zones meeting at right angles, and having the clips *F*₂ projecting from its neck *F*₁, as set forth. 8th. The combination, with the step-ladder and its prop-sticks, of the bracket *D* attached to the said ladder, and having the dove-tailed projection *D*₂ and the socket *E* having the dove-tailed notch *E*₂, and the ears *E*₃. 9th. The combination, with a step-ladder and its prop-sticks, of the bracket *D* having the projection *D*₂, dovetailed at *D*₃ and bent downward at its end, the socket *E* having notch *E*₂ adapted to fit said dovetail, and also having the deep notch *E*₁, and the ears *E*₃, and the ball *F* adapted to fit within said socket, and having the clips *F*₂ projecting from its neck *F*₁, substantially as and for the purpose set forth. 10th. In a cross-bar, the bar *G* formed of malleable metal and having the lugs *G*₁ and the lips *G*₂, as and for the purpose specified. 11th. The combination, with a ladder having split side bars, of the torqued brace *R* having its bifurcated ends *R*₁ secured to the said split side bars, and having its single end attached to the step, substantially as set forth. 12th. In a step-ladder of the kind having slides at the lower ends of the stiles, longitudinally adjustable by means of serrations in the slides, and dogs engaging therewith, the combination, with the step-ladder, of the slides having longitudinal grooves therein and serrated metallic strips inserted in said grooves, and the dogs engaging with said serrations, as and for the purpose set forth. 13th. In a step-ladder of the kind having slides at the lower ends of the stiles, longitudinally adjustable by means of serrations in the slides, and dogs engaging therewith, the combination, with the step-ladder, of the slides having longitudinal grooves therein, and the serrated metallic strips in said grooves, the dogs engaging with said serrations and having the lugs, and the coiled springs kept in place by means of said lugs and recesses in the ladder, as and for the purpose specified. 14th. The combination, with the step-ladder and the slides adapted to be longitudinally removable at the lower end thereof, of the crescent springs *O* held between said slides and the contiguous faces of the ladder, for the purpose specified.

No. 27,487. Machine for Producing Type Bars and Matrices for Type Bars. (*Machine à faire les barres de caractères et les matrices des barres.*)

The National Typographic Company, New York, N. Y., (assignee of Ottmar Mergenthauer, Baltimore, Ind.,) U.S., 20th August, 1887; 5 years.

Claim.—1st. In an organized machine for producing type surfaces or matrices therefor, the combination, substantially as described, of a line of matrices or dies, a series of independent space-bars mounted on rails or guides, and movable thereon laterally across the entire field of the matrices that they may be brought opposite the desired point in the line of matrices, and also movable longitudinally that they may be thrust into the line between the matrices. 2nd. A line

of matrices or dies, in combination with a series of tapered space-bars, and guide-rails adapted to permit the latter to be moved both laterally and longitudinally, whereby the bars may be first brought opposite the desired points in the lines and then thrust between the matrices to spread or separate them. 3d. In combination with a line of matrices, adjacent guides extending lengthwise of, and beyond the line of matrices, and a series of tapered space-bars suspended freely upon and between the guides, whereby the space-bars are permitted to pass beyond the field occupied by the matrices or to be inserted between the matrices at any desired point or points in the line. 4th. In combination with the pendent matrix-bars having a rising and falling motion, the guide-rails H lying beneath and extended beyond the bars in position to admit the latter between them, and the two part space-bars suspended upon and between the rails, as described and shown. 5th. The pendent vertically-moving matrix-bars, in combination with the rails H, the two-part space-bars suspended on said rails, and stops *y* to limit the rising motion of the heads of the bars while permitting their body portions to be thrust forward between the matrices. 6th. A line of matrices or dies, and clamps or stop devices to limit the lateral separation of the matrices, in combination with a series of tapered space-bars to effect the separation of the matrices, a weight, and a pressure-head connected to said weight, and arranged to advance the space-bars simultaneously between the matrices, whereby the line of matrices is automatically expanded to the limit permitted by the clamps. 7th. The combination, substantially as described and shown, of a series of matrices or dies, the series of space-bars and the laterally-movable frame I, provided with adjustable slides J to effect the distribution of the space-bars. 8th. The series of space-bars differing in width, in combination with the sliding-frame I, the slides J in said frame to distribute the space-bars, the laterally-movable head L provided with devices to adjust the slides J and the finger-key connected by devices, substantially as described, with said adjusting devices, whereby the operation of the finger-key is caused to effect the adjustment of the slides. 9th. In combination with the slides J, and the adjusting-levers M, N, the eccentric wheel R operating in connection therewith to limit the movement of the slides, whereby the successive bars or slides are adjusted to engage the successive space-bars. 10th. In combination with the laterally-movable space-bars, the sliding-frame I, its slides J adjustable to engage the successive space-bars, and the inclined plates K by which the slides are forced inward after the engagement with the space-bars, whereby the space-bars are locked between the slides and prevented from turning or twisting. 11th. In combination with the distributing slides J mounted in frame I, the inclined blocks *d*, *d*¹, whereby all the slides may be restored to their normal positions for the correction of errors. 12th. The combination of a line of matrices or dies, automatic clamps movable into and out of position to limit the expansion of the matrix line, and operating device common to the series of space-bars, and automatic mechanism, substantially as described, for actuating the same subsequent to the adjustment of the clamp. 13th. The combination, substantially as shown, of a line of matrices or dies, a series of space-bars arranged in a single line, guides or rails whereby said bars are sustained, and wherein they are movable laterally within or beyond the field of the matrices, and a pressure device D adapted to engage only those space-bars which are brought for the time being within the field of the matrices, whereby those space-bars which are not called into use are permitted to remain at rest unaffected by the pressure device. 14th. In an automatic machine for producing type-surfaces or matrix impressions therefor, the combination of a series of dies or matrices adapted to be assembled in line, clamps to confine the line of dies and limit its elongation operating mechanism, substantially as described, acting to advance said clamps to their operative positions, and to retract them clear of the matrices, and automatic mechanism, substantially as described, acting to advance the space-bars while the clamps are in operative position. 15th. In combination with the eccentric wheel K mounted on the movable head, the spring to turn the same in a backward direction, the ratchet wheel and pawls to effect its forward rotation, and the studs for automatically releasing the pawls, whereby the wheel is permitted to resume its original position. 16th. In combination with the movable space-bars, the frame I and its slides J for distributing the space-bars, the movable blades I, I¹, whereby the slide are retracted and disengaged from the space-bars. 17th. In an organized machine, substantially such as herein described, the blades I, I¹ for effecting the retraction of the slides J, in combination with the spring to operate said blades, and rod *q* connecting the blades with the head *s* by which the matrix-bars are lifted, whereby the slides J are automatically disconnected from the space-bars as the matrix-bars commence their descent between the space-bars. 18th. In combination with the slides J for distributing the space-bars, the blades I, I¹ to effect the retraction of the slides, and the plates *n*, *n*¹ connected with the blades and arranged to guide the matrix-bars in their descent. 19th. The series of longitudinally-movable space-bars, in combination with the pressure-head *v*, the weighted lever to actuate said head, and the ratchet mechanism to lock said head in its depressed position. 20th. In combination with the matrix-bars, the space-bars and the lifting-head for the space-bars actuated by a weight, the ratchet mechanism to lock the head in its depressed position, and an arm *e*¹ to disconnect the ratchet mechanism, whereby the pressure-head is automatically released at the proper time to actuate the space-bars. 21st. The combination of the space-bars, the pressure-head acting thereon, the weighted lever to actuate the head and the cam to control the movement of said lever. 22nd. In combination with a series of aligned matrices or type, a series of independent tapered space-bars arranged for motion in the direction of their length, mechanism, substantially as described, for distributing said space-bars adjacent to the matrices, and mechanism, substantially as described, for restoring the space-bars laterally to their original positions. 23rd. In combination with the matrix-bars and the laterally-confining clamps C, C¹, the gauge-bar *b*₂ acting to limit the approximation of the clamps. 24th. In combination with the matrices or dies, and the lateral clamps C, C¹, the gauge-bar *b*₂, the locking device *e*₂ connecting said bar with the clamps and the trip device *e*₂, whereby the locking device is automatically disengaged to release the gauge-bar when required. 25th. The divided separable mould, combined with the pressure-lever, and a movable melting-pot arranged to operate

said lever. 26th. The divided separable mould, in combination with the yielding device *p*. 27th. In combination with the matrix-bars having notches therein, the clamp G and the aligning device consisting of the two blades movable to and from each other, and also movable forward and backward with respect to the clamp and matrix-bars. 28th. The lever X connected with the starting-clutch, in combination with the sliding-frame I, and the spring connection between said frame and lever, whereby the lever is enabled to first move the frame and subsequently to operate the clutch to effect the starting of the machine.

No. 27,488. Wire Rope Machine.

(Machine à câble en fil de fer.)

James B. Stone, Worcester, Mass., U.S., 24th August, 1887; 5 years.

Claim.—1st. In a wire rope machine, the combination, with a flyer-frame upon which the twisted strand is spooled, and means for operating the same, of a series of simultaneously revolving flyers carrying delivery spools, each of said flyers revolving about its own axis, and means for operating the same, substantially as set forth. 2nd. The combination, with the flyer-frame B carrying a receiving spool and distributing device, and shaft *e* operating said spool and distributing device, of the grooved pulley F on said shaft *g*, a carrier for said arms, cords *f*, means for adjusting the tension thereof and means for revolving the flyer upon its axis and rotating the carrier, substantially as described. 3rd. The combination, with a flyer-frame B carrying a receiving spool and distributing device, and shaft *e* operating said spool and distributing device, grooved pulley F on said shaft, arm G, a carrier for said arm, cords *f*, means for adjusting the tension thereof, and means for revolving the flyer upon its axis and rotating the carrier, of a series of flyers O carrying delivery spools, and provided with a pin or button, tension regulating device R located on said flyers O and revolving with them, and means for revolving said flyers, substantially as set forth. 4th. The combination, with flyer O carrying the delivery spool, and means for operating the same, of the tension regulating device R consisting of three or more pins or wheels *r* placed out of line with each other, and located upon the flyer O to revolve with said flyer, for the purpose stated, substantially as set forth.

No. 27,489. Veneering. (Bois de placage.)

Charles W. Spurr, Boston, Mass., U.S., 24th August, 1887; 5 years.

Claim.—1st. As a new or improved manufacture veneering, substantially as described, consisting of thin veneers of wood arranged in pack and connected by vulcanized cement or india rubber arranged between them, essentially as set forth. 2nd. Veneering, consisting of thin veneers of wood, and a backing of other material arranged in pack, and connected by vulcanized cement or india rubber extending between their next contiguous surfaces, as set forth. 3rd. Veneering, substantially as described, moulded or embossed, as specified, and consisting of thin veneers of wood or such, and a backing of the same or of other material arranged in pack, and connected by vulcanized cement or india rubber extending between their next contiguous surfaces, as set forth. 4th. Veneering, substantially as described, moulded as specified, and consisting not only of thin veneers of wood, or such, and a backing arranged in pack and connected by vulcanized cement or rubber extending between their next contiguous surfaces, but of an auxiliary backing or fillings, essentially as described, inserted in the cavities or interstices of the primary backing, essentially as explained.

No. 27,490. Completing Electric Circuits.

(Manière de compléter les circuits électriques.)

Percival Everitt, London, Eng., 24th August, 1887; 5 years.

Claim.—1st. The method herein described of setting up or establishing and utilizing electric currents by the use of a coin, in combination with a suitably applied weight. 2nd. A new kind of apparatus, such as is herein described, being adapted to communicate an electric current or shock, and indicate the degree of intensity of the current or shock by the combined application of a coin or the like, and a suitably applied weight. 3rd. The combination of parts forming an improved machine, such as is hereinbefore described and illustrated in the several figures of the accompanying drawings.

No. 27,491. Sachet. (Sachet.)

Edward E. Thorpe, New York, N. Y., U. S. 24th August, 1887; 5 years.

Claim.—1st. A sachet made of chamois skin, and provided with a perforated pocket of the same material. 2nd. A sachet, provided with a chamois-skin powder-pocket, having perforations in one face. 3rd. A sachet, provided with a chamois-skin powder-pocket, having elongated proportions or slits in one face.

No. 27,492. Doctor for Paper Calendar Rolls. (Doctor de Rouleaux à calendrer le papier.)

Richard Smith, Sherbrooke, Que., 24th August, 1887; 5 years.

Claim.—1st. A deflector-plate or doctor, composed of a tubular back or rib, to which is secured a curved metallic plate, the latter provided longitudinally with apertures opening into the tubular rib, whereby a flow of air may be continuously discharged, substantially for purposes herein described. 2nd. Two continuously rotating rolls, one partially enclosed by and the other in contact with a deflector-plate or doctor, in combination with said deflector-plate pivotally mounted and swinging in horizontal paths of movement toward or away from the rolls, for the purposes herein set forth. 3rd. In combination with a series of continuously revolving rolls, the pivotal spring actuated deflector plates alternating at the meeting surfaces, the rolls, and adapted to supply air continuously, substantially for the purposes described. 4th. In combination, with a pair of revol-

ing rolls, a pivotally mounted doctor, composed of a tubular back to which is secured a curved metallic plate, the latter to contact against the upper roll and partially enclose, but not touch, the lower roll, substantially as herein stated. 5th. The series of revolving rolls, provided with a series of alternately oppositely-disposed pivotally-arranged doctors, in combination with the actuating shaft, eccentric disks and connecting-rods united with the doctors, whereby simultaneous movements of the latter are effected, substantially as herein stated. 6th. In combination with a series of continuously-rotating rolls, and the alternately oppositely-arranged doctors pivotally mounted, the doctors P, P' secured upon the standards and permanently impinging upon their co-operating rolls, as and for the purposes set forth. 7th. The combination, with the curved plate c, perforated, as described, and attached to a tubular rib a pivotally mounted, of the sliding jib j, bracket G and actuating rod J, with its connecting mechanism, all operating substantially as described. 8th. In combination with a pair of revolving rolls adapted to and pass between them, a continuous paper web, the doctors longitudinally disposed thereof, but oppositely inclined and adjusted to rest in contact with said rolls while in rotation, substantially as herein stated. 9th. In combination with a pair of rolls, the deflector-plate D and the shaft J provided with the eccentric hub n, ring p and screw-threaded rod g, the rod s adjustably connected with the doctor by the coupling r, substantially as described. 10th. The cheek-pieces I and the bracket G, which supports one end of the doctor D, in combination with the jib j, its springs k, k', and the terminal support e of said doctor, whereby vertical movement thereof is obtained, substantially for purposes herein set forth. 11th. In combination with two adjacent rolls, and the doctors vertically disposed as to each other, but oppositely and permanently inclined against the surface of said rolls, the adjustable disks 2, 2', and face plates 3, 3', slotted at 5, 5', and carrying the journals 4, 4', all operating as herein described. 12th. The combination, with two adjacent rolls and the oppositely-inclined doctors longitudinally arranged and normally resting thereon, of the supporting plates 6, 6', slotted disks 7, 7', journals 8, 8', substantially as and for the purposes stated.

No. 27,493. Glazier's Point.

(Rabot à diamant.)

Bartlett B. Chandler, Hyde Park, Mass., U. S., 24th August, 1887; 5 years.

Claim.—1st. A glazier's point, formed with an entering tongue b, having a spur and a lip a on the side of said point, turned down to fit the edge of a pane of glass, substantially as herein set forth. 2nd. A glazier's point having a lip a and the entering point b, the latter formed with an oblique side 2 adjacent to the lip and with a normal side l, provided with a spur, for purposes herein described.

No. 27,494. Chimney. (Cheminée.)

Ephrem Martin, Durham Sud, Que., 24th August, 1887; 5 years.

Résumé.—Une cheminée métallique, préférablement faite de tôle galvanisée ou de tôle noire, composée de deux enveloppes concentriques A et B, séparées par des pièces en D, D', de manière à laisser des espaces libres ou compartiments C, utilisables pour la ventilation des appartements, la dite cheminée étant en outre munie à la base d'un trou d'homme I, et d'un trou de tuyau J, et à la tête d'un rebord F, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 27,495. Type-Writing Machine.

(Graphotype.)

Eugene Fitch, Des Moines, Iowa, U. S., 24th August, 1887; 5 years.

Claim.—1st. In a type-writing machine, type blocks secured on the ends of wire arms by means of fine screw-threads, and having series of type formed on opposite faces thereof, either of which may be brought into active position by turning the blocks on the wire arms, substantially as described. 2nd. In a type-writing machine, in combination, the pivoted frame j, the hinged type-carriers e, e', e'', having bearings on the shaft d held in the frame j, and the stop bar f, provided with the slots f', f'' and attached to the frame j, substantially as and for the purpose set forth. 3rd. In a type-writing machine, in combination, the pivoted frame j, the shaft d, the type-carriers e, e', e'', the stop bar f, the guide pins j₃ on a bar located in front of the shaft d, and secured to or forming part of the frame j, and the fixed directing guides h, h', substantially as and for the purpose set forth. 4th. In a type-writing machine, in combination, the pivoted frame j, the shaft d, the type-carriers e, e', e'', type blocks on the ends of the parts e₂, the upwardly-projecting arms j₁, j₁' of the frame j and the general plate j₂ extending from the arms j₁, j₁' around the ends of the type blocks, when they are in normal position, substantially as and for the purpose set forth. 5th. In a type-writing machine, the combination, with a key bar a and link q, of a connecting device, consisting of a piece of sheet metal g₂, bent around and secured to the end of the bar a, having a lip g₃ arranged to set into a slot formed in the side of a link g, and a projecting strip which is bent around the link to hold the lip g₃ in the slot of the link, substantially as set forth. 6th. In a type-writing machine, the combination, with the shaft n having a square projecting end, and the spring n₂ arranged to bear against the shaft to hold it in any position in which it may be placed, of the ink roller m and its frame m₁, provided with square holes adapted to fit on the squared end of the shaft n, substantially as and for the purpose set forth. 7th. In a type-writing machine, the combination, with a pivoted frame and type arms carried thereby, of a spring bearing on the frame, a stop against which the frame is held by the spring when in normal position, and levers arranged to act independently on an arm projecting from the frame, and provided with finger pieces, by the manipulation of which the frame and the type on the ends of the type arms are set in different positions, substantially as and for the purpose set forth. 8th. In a type-writing machine, in combination, the frame j, j₄, the spring k, the stop k₁, the levers l, l₁, l₂, and the adjustable stops l₄, l₅, l₆, substantially as and for the purpose set forth. 9th. In a type-writing machine, in combination, the frame

j, j₄, the spring k, the stop k₁, the lever l, the adjustable stop l₄ and the lever l₅ pivoted to the frame in close proximity to the lever l, having a cam stud l₉ arranged to bear on the lever l to fully depress it when the lever l₅ is raised, and a pin l₁₀ arranged to bear on, and partly depress the lever when the front end of the lever l₅ is depressed, substantially as and for the purpose set forth. 10th. In a type-writing machine, in combination, the frame j, j₄, the spring k, the stop k₁, the lever l and the spring stop l₇, by which the number and character type are caused to print below the line, substantially as and for the purpose set forth. 11th. In a type-writing machine, in combination, the frame j, j₄, spring k, stop k₁ and lever l₂, by which the number and character type are caused to print above the line, substantially as and for the purpose set forth. 12th. In a type-writing machine, in combination, a laterally moving spring actuated carriage, a fine toothed rack pivoted thereto, a fixed tooth with which the rack engages when in one position, a spring-actuated tooth with which the rack engages when in another position, a stop in contact with which the spring actuated tooth is brought by the forward movement of the rack and carriage, a stop against which this tooth rests when released by the rack, and a spacing bar actuated by the operating keys, connected substantially as described, to the pivoted rack to move it down from the spring-actuated tooth on to the fixed tooth when any of the keys are depressed, as and for the purpose set forth. 13th. In a type-writing machine, in combination, a pivoted frame carrying type arms, having two or more sets of type on their ends, levers for setting the frame in different positions, a laterally moving spring actuated carriage, a fine toothed rack pivoted thereto, a fixed tooth with which the rack engages when in one position, a spring-actuated tooth with which the rack engages when in another position, and a variable stop controlled by the pivoted type frame, against which the spring-actuated tooth rests, substantially as and for the purpose set forth. 14th. In a type-writing machine, in combination, the spring-actuated carriage p, toothed rack u, the spring-actuated tooth u₂, the fixed tooth v₁, the controlling plate w, the slide w₁, link w₂ and type-carrying frame j, substantially as and for the purpose set forth. 15th. In a type-writing machine, in combination, the carriage p, toothed rack u, the spring-actuated tooth u₂, fixed tooth v₁, the lever t₂, provided with the yielding roller t, the shaft t, the link s₄, the spacing bar s and the handle u₅ on the rack-bar u, substantially as and for the purpose set forth. 16th. In a type-writing machine, in combination, the spring-actuated carriage p, the toothed rack u, the spring-actuated tooth u₂, the fixed tooth v₁, the controlling plate w, slide w₁, link w₂, the type-carrying frame j and the levers l, l₁, l₂, substantially as and for the purpose set forth.

No. 27,496. Manufacture of Hats, Caps, etc., and Apparatus therefor. (Fabrication des chapeaux, casquettes, etc., et appareil pour cet objet.)

Frederick W. Cheetham, Hyde, Eng., 24th August, 1887; 15 years.

Claim.—1st. The improved process of felting an unproofed or unstiffened surface covering or veneer, of short staple wool or fur, on to a hat body or form whether proofed or unproofed, substantially as herein set forth for the purposes specified. 2nd. The improved process of felting an unproofed or unstiffened veneer or surface covering of short staple wool or fur, on to the proofed or stiffened form or body of a felt hat or other head covering, substantially as herein described for the purposes specified. 3rd. A felt hat, cap, or other head covering, having a form or body composed of coarse wool or fur, and a veneer or surface covering of finer or better quality wool or fur of short staple applied, substantially as herein described for the purposes specified. 4th. A felt hat, cap, or other head covering, in which an unproofed veneer of short staple material has been felted on to a form or body, after the operation of proofing or stiffening, substantially as herein described for the purposes specified. 5th. The use and application of the apparatus herein shown and described, or any other suitable arrangement of apparatus for supplying to hat bodies during the process of fulling, bumping or hand planking, a veneering material consisting of short staple wool or fur, mixed with liquid, substantially as specified. 6th. The veneering material consisting of wool or fur cut, ground or otherwise reduced to a short staple, and mixed with water or other liquid, and applied whether by hand or otherwise to hat bodies, or forms undergoing a fulling, bumping or planking process, substantially as herein described for the purposes specified.

No. 27,497. Means of Imparting Buoyancy to Life Boats, etc. (Moyens de rendre plus flottables les canots de sauvetage, etc.)

Francis W. Brewster, London, Eng., 24th August, 1887; 5 years.

Claim.—As means of imparting buoyancy to life-boats, rafts, launches, pontoons, torpedo-boats and analogous floating structures, in combination with enclosing casings or shells l, a compressed or consolidated homogeneous filling 3 of partially carbonized granulated or fragmentary cork, as hereinbefore set forth.

No. 27,498. Apparatus to be employed in or connected with Sharpening Pencils. (Taille-crayon.)

James L. Clarke, Leamington, Eng., 24th August, 1887; 5 years.

Claim.—1st. The herein described pencil sharpener comprising a receptacle having a transverse cutter, and an edge a adapted to support the pencil as the end of the pencil is placed under the edge of the cutter, substantially as described. 2nd. The herein-described pencil sharpener, comprising a receptacle having a supporting edge a, a back stop and a transverse cutter b arranged at an angle to the back stop, as and for the purpose described. 3rd. The herein-described pencil sharpener, comprising a receptacle having a supporting edge a, and provided in its opposite sides with slits C, adapted for the reception of an ordinary penknife blade, substantially as described.

No. 27,499. Pocket Lock-Stitch Sewing Machine. (*Machine à coudre de poche à point d'arrêt.*)

Saul Isaac, London, Eng., 24th August, 1887; 5 years.

Claim.—1st. In a pocket lock-stitch sewing machine, the construction of the adjustable feed, as described, in reference to the parts *l, l', k, K, Figs. 1 and 2.* 2nd. In a pocket lock-stitch sewing machine, the construction of the shuttle sector *G, carriage E and spring e,* as described in reference to *Figs. 1 and 2.* 3rd. In a pocket lock-stitch sewing machine, the arrangement of the thread tension device *m,* as described, in reference to *Figs. 1 and 2.* 4th. The combination, with the various necessary parts, of the pocket lock-stitch sewing machine, substantially as shown in *Figs. 1 and 2,* of the various modified driving devices, as described and illustrated in reference to *Figs. 3, 4, 5, 6, 7 and 11.* 5th. The modified construction of a ball shuttle containing a trade reel of cotton, the shuttle being either reciprocating, stationary or revolving, in combination with a revolving hook-looper on a rotary driving axis, substantially as described, in reference to *Figs. 8, 9 and 10.* 6th. The modified construction of a ball shuttle containing a reel of cotton, the shuttle being stationary, in combination with a reciprocating hook-looper on a rotary driving axis, substantially as described in respect of *Fig. 12.*

No. 27,500. Fur Cape. (*Collet de fourrure.*)

Fermex Fibich, Quebec, Que., 24th August, 1887; 5 years.

Claim.—The combination of the cape *A* with the muff *B* and the laps *C.*

No. 27,501. Car Replacer.

(*Aiguille de chemin de fer.*)

Justus L. Dwight, Tribes Hill, N. Y., U. S., 24th August, 1887; 5 years.

Claim.—1st. The combination of the track *A* the spring point-rails *C* included in the track *A* and arranged in line therewith, the rails *B* diverging from opposite sides of the track *A* from the point opposite the free ends of the point reel *C*, and against which the said free ends of the point-rails normally bear, and the plates or supporting platforms *D, G* arranged between the rails *A, F* and *B,* the said plate or platforms having their upper sides inclined upward toward the points where the rails converge for the purpose set forth, substantially as described. 2nd. The combination of the main track *A,* the point-rails *C* included therein, and forming a portion of the main track, the rails *B* diverging from the track *A* at points opposite the free ends of the rails *C,* and against which the latter normally bear, the inclined plates or platforms *G* arranged between the opposing sides of the rails *A, C* and *F,* the guard-rails *E* on the inner sides of the rails *A,* the converging frog-rails *F* forming a continuation of the rails *E* from the point in the latter opposite the free ends of the switch-rails, and the inclined supporting plates or platforms *G* arranged between the frog-rails *F* and the track-rails *A,* all combined and arranged to operate substantially as described.

No. 27,502. Pneumatic Car Lamp Extinguisher. (*Eteignoir de lampe de char pneumatique.*)

Austin Berry, Warden, Que., 24th August, 1887; 5 years.

Claim.—1st. The mode of extinguishing car-lamps by an air blast, conducted to the lamps through pipes from a tank or reservoir containing compressed air. 2nd. The combination, with a railway car provided with an air brake cylinder, of a tank supplied with compressed air from said cylinder, pipes from said tank leading to the vicinity of the lamps in a car, and a valve opening to discharge air from the tank through the pipes to extinguish the lamps simultaneously, as set forth. 3rd. The combination, with a railway car having an air brake-cylinder, of an air tank, and pipes leading therefrom in the direction of the lamps in the car, and a valve in the outlet of said tank opened automatically by a weight gravitating on the upsetting of the car to cause a discharge of air from the tank to extinguish the lamps simultaneously, as set forth. 4th. The combination, with the valve *G,* of the rails *I, I, I,* gravitating weights *J,* sleeves *K,* rods *L,* cruciform arms or levers *H* and pipes *L,* whereby the gravitation of a weight will automatically operate the valve, as set forth.

No. 27,503. Manufacture of Corks and Machinery therefor. (*Fabrication des bouchons et appareil pour cet objet.*)

John Lowman, Camberwell, and John Howard, London, Eng., 24th August, 1887; 5 years.

Claim.—1st. The improved manufacture of corks by grinding off the corners of the "squares" or "quarters", to produce corks of the required contour. 2nd. The improved manufacture of corks by grinding the "squares" or "quarters" to the required shape against revolving discs covered with glass, sand, or emery paper, or other suitable grinding surface, substantially in the manner hereinbefore described and represented in the drawings hereto annexed. 3rd. The improved arrangement, construction and combination of machinery or apparatus for grinding "squares" or "quarters" of cork into shape, substantially as hereinbefore described and represented in the drawings hereto annexed.

No. 27,504. Thill-Holder for a Harness.

(*Dossière de harnais.*)

Henry G. Burrage, Hatley, Que., 26th August, 1887; 5 years.

Claim.—In a metal thill-holder, the extension or ear *B* having the circular perforation *C,* and the slot *E,* substantially as and for the purpose hereinbefore set forth,

No. 27,505. Drying and Curing Apparatus.

(*Appareil de dessiccation et de salaison.*)

Thomas C. Oakman, Ashville, N. C., U. S., 26th August, 1887; 5 years.

Claim.—1st. The combination of a closed number or compartment, a conduit communicating with a source of heat, and a conduit communicating with the outer atmosphere, both conduits being within said chamber, one of said conduits enclosing the other, and the conduit communicating with the outer atmosphere having openings for the escape of air into said chamber, substantially as described and arranged in a drying and curing apparatus. 2nd. The combination of a chamber, a horizontal partition, a conduit communicating with a source of heat and openings in the wall of said chamber, the said conduit and openings being disposed below said partition, substantially as described and arranged in a drying and curing apparatus.

No. 27,506. Calculator. (*Calculateur.*)

Luther M. Carmical, Jonesville, Va., U. S., 26th August, 1887; 5 years.

Claim.—1st. The combination of the device or frame *A,* having a series of parallel bars corresponding to the nine digits extending between the lateral portions of said frame, and the rings adapted to slide thereon with tablets inscribed with the nine digits, and multiples thereof, arranged in vertical columns, as shown and described. 2nd. The combination, with tablets inscribed as shown, of the device *A* consisting of a rectangular frame having nine parallel bars extending between its right and left sides, and marked to indicate nine equidistant points and provided with wheels arranged parallel to said bars to support and facilitate the movement of the device, as shown and described.

No. 27,507. Horse Shoe. (*Fer à cheval.*)

William Body and Silas J. Winton, Wittersham, Eng., 26th August, 1887; 5 years.

Claim.—1st. In combination with a horse shoe, a pad of india-rubber or other elastic material *a,* constructed to fit within such shoe, so as to give a bearing surface over the whole of the underside of the hoof, and to extend at the sides and front partially over the under surface of the shoe, as set forth and shown. 2nd. The combination of horse shoe *B,* pad *a* and leaves *b* for holding the latter in place, as hereinbefore shown and described.

No. 27,508. Grain Scourer.

(*Nettoyeur des grains.*)

Joseph Yates, Minneapolis, Minn., U. S., 26th August, 1887; 5 years.

Claim.—In a grain scourer, the combination of the parallel shafts *B, D,* the radial blades *E* bevelled from their ends to sharp edges in front, the disks *A* interlapping with said blades, and mechanism for driving said shafts a differential motion, as described.

No. 27,509. Locomotive and Car Wheel.

(*Roue de char et de locomotive.*)

John W. Cloud, Buffalo, N. Y., U. S., 26th August, 1887; 5 years.

Claim.—1st. As a new article of manufacture, a wheel having a tire and wheel centre, as described, and provided with one or more strips of metal clamped between the tire and wheel-centre by the contraction of the tire, said interposed plate or plates engaging by means of a flange or flanges, with a groove or grooves in the wheel centre, and having edge flanges bent over on the sides of the wheel, so as to engage with the tire, whereby the tire is prevented from slipping laterally on the wheel centre. 2nd. As a new article of manufacture, a wheel having a tire and wheel-centre, as described, and provided with one or more strips of metal clamped between the tire and wheel centre by the contraction of the tire, said interposed plate or plates engaging by means of a flange or flanges, with a groove or grooves in the wheel centre, and having edge flanges bent over on the sides of the wheel, so as to engage with recessed flanges on the tire, whereby the tire is prevented from slipping laterally or flying radially away from the wheel centre. 3rd. As a new article of manufacture, a wheel having a tire and wheel-centre, as described, and provided with one or more strips of metal clamped between the tire and centre, and having edges bent over on the sides of the wheel, so as to engage with recessed flanges on the tire, and on the wheel centre and prevent the tire from slipping or flying away from the wheel centre, substantially as shown and described. 4th. As a new article of manufacture, a wheel having a tire and wheel-centre, as described, and provided with a strip of metal clamped between the tire and centre, said interposed strip having its edges notched and bent alternately inward and outward to engage with recessed flanges in the wheel centre and tire respectively, whereby the tire and centre are clamped together, as and for the purpose specified. 5th. The process of manufacturing wheels, which consists in inserting between the wheel-centre and the tire a plate or plates of metal broader than the contact surfaces of the tire and centre clamping, said plate between the tire and centre by the contraction of the tire, and then bending the projecting edges of said plate inward and outward, to engage recessed flanges in the centre and tire respectively, and clamp them securely together.

No. 27,510. Harvester. (*Moissonneuse.*)

William Russell, Hamilton, Ont., 26th August, 1887; 5 years.

Claim.—1st. In combination with the frame of a harvester, a wheel so connected herewith on the discharging side of the machine by means of an extension arm held detachably in place, as to afford a spring bearing for a bolster, which supports the outer side of the main frame and of the deck from which the sheaves are discharged, the centre of gravity of the machine being designed to fall within said wheel when operating on a side hill, substantially as specified. 2nd. In combination with the frame of a harvester, a swivel wheel

adapted to work in a box bolted to the outer end of an extension arm detachably connected with the main frame, a spring having bearings against said extension arm and a bolster, a bolt passing through said extension arm at one end and rigidly attached to the bolster at the other, means provided for holding said bolster in position over the spring, so as to afford a spring bearing for the outer portion of the frame of the machine on the discharging side, substantially as described and for the purpose specified. 3rd. In combination with the frame of a harvester, a wheel suitably journaled and connected with the main frame on the discharging side, so that sheaves discharged from the binding deck will fall immediately outside said wheel, which is ranged in line with the grain-table wheel and road wheel, means provided for rendering said wheel vertically adjustable and to afford a spring bearing for a bolster, which is adapted to uphold the side of the machine on the discharging side, substantially as described and for the purpose specified. 4th. In combination with the main frame of a harvester, the extension arm D, box C, swivel B, wheel A, spring F, bolt G, nut *g*, link O, bolster H, arms I, braces K, rod N and deck S, substantially as specified. 5th. The combination, with the swivel-wheel A, of the box C, in which the swivel B is adapted to work the extension arm D, U-shaped at centre to receive spiral spring F, having head block *f*, and bolt G, having nut *g*, the elevating rack E, casting *p* bolted to metal portion P of the sill M, link O, bolster H, rod N, braces K, sockets *k*, arms I, saddle L, deck S and main frame of the machine, substantially as described and for the purpose specified.

No. 27,511. Corrugated Multiple Steam Generator. (*Générateur de vapeur multiple plissé.*)

Isaac M. Chase, Washington, D.C., U.S., 26th August, 1887; 5 years.

Claim.—1st. A blank for boiler sections made of sheet or plate metal having longitudinal indentations and transverse corrugations connecting with said indentations formed in it, substantially as described. 2nd. A boiler section constructed of sheet or plate metal having its manifolds and connecting tubes formed integral, substantially as described. 3rd. A boiler section having an upper horizontal manifold, a lower inclined manifold with intermediate connecting tubes formed of sheet or plate metal, the tubes and the manifolds being integral, substantially as described. 4th. A boiler section having its manifolds and connecting tubes formed of one continuous sheet or plate of rolled metal, substantially as described. 5th. A boiler section constructed of sheet or plate metal having its manifolds, and connecting tubes formed integral, in combination with a separate plate of metal secured to the ends of the sheet forming the section and in the upper manifold, and provided with a series of apertures over the connecting tubes, and detachable covers for said apertures, substantially as described. 6th. A steam generator composed of sections of different areas of heating surface, and provided with upper and lower manifolds, in combination with a feed-water reservoir connected to both of said manifolds in each section, substantially as described. 7th. A steam generator composed of section of different areas of heating surface, and provided with upper and lower manifolds, the outer sections forming the sides of the furnace, and the intermediate sections suspended over the grate surface, in combination with a feed-water reservoir connected to both manifolds of each section, and a steam drum in communication with each section by a separate pipe, substantially as described. 8th. A steam generator composed of sections, the outer sections forming the sides of the furnace, in combination with a hollow bridge wall, a baffle plate forming the lower wall of the throat of the furnace, and an air distributing orifice under the baffle plate, substantially as described.

No. 27,512. Measuring Instrument for Carpenters, etc. (*Instrument de mesurage pour charpentiers, etc.*)

Jabez Klif, Fergus Falls, Minn., U.S., 26th August, 1887; 5 years.

Claim.—1st. The combination, with a slotted square, of the slotted straight edges connected to said square and to each other by the bolts or pins adjustable in the slots of the square, and straight edges, substantially as and for the purpose set forth. 2nd. The combination of the square A, provided with the arm B having the slot B₁, and the aperture B₁₁, and the arm C having the slot C₁, of the straight edges D and E having the slots D₁ and E₁ respectively, and the grooves D₁₁ and E₁₁ respectively, and the bolts F for fastening the said square and straight edges together, substantially as shown and described.

No. 27,513. Boot and Shoe. (*Chaussure.*)

John F. O'Brien, Quebec, Que. 26th August, 1887; 5 years.

Claim.—1st. In combination with a boot or shoe, having a high stiffener E at the heel, the inclined top block or bearing D for the heel of the foot, to give the insole a down grade from the stiffener towards the narrow part of the sole, as set forth. 2nd. As an article of manufacture for insertion in boots and shoes, a block or bearing D, cut, carved, moulded or compressed to form, and adapted to be placed within a boot or shoe to give the heel of the foot a raised bearing, as set forth.

No. 27,514. Car-Coupling. (*Attelage de chars*)

George W. Wilson and Oscar G. Wall, Lanesboro, Minn., U. S. 30th August, 1887; 5 years.

Claim.—1st. In a car-coupling, the combination, with the draw-head having a link socket B formed with the sloping front portion *b*, and having a vertical pin H at its inner end, of a link-holding and adjusting block E having a vertical aperture in its inner end of greater diameter than the said pin, to allow the said inner end to move vertically on the pin, and having a curved lower front face *e* opposite face *b* of the link socket, substantially as set forth. 2nd. A car-coupling comprising the drawhead A, provided with the link-socket B, *b*, the upper opening F, the lower opening G having the in-

clined rear wall *g*, the vertical pin H at the inner end of the socket, the vertically slotted block E having an enlarged aperture at its inner end, through which pin H passes, to allow the block vertical movement thereon, and the coupling pin C having the concave rear edge terminating in the rounded lower portion L, and the overhanging forward edge N, substantially as set forth. 3rd. The coupling-pin C having the supporting shoulders J, J, the concave rear edge K, the lower rounded rear edge L, the overhanging forward edge M, the upper receding front edge portion P and the intermediate elbow O, substantially as set forth. 4th. In a car-coupling, the draw-head A, provided with a link-socket B, coupling-pin holes F, G, said hole G having an inclined rear wall *g*, in combination with a coupling-pin C formed with an overhanging front edge portion N, and receding upper front edge portion P, forming a projection or elbow O at the front of the pin, and said pin also having a concave upper rear edge portion K and lower rounded rear edge portion S, substantially as herein set forth. 5th. In a car-coupling, the combination, with the drawhead A, provided with a link socket B and coupling-pin holes F, G, said hole G having an inclined rear wall *g*, and a coupling-pin C formed with an overhanging front edge portion N, and receding upper front edge portion P forming a projection or elbow O at the front of the pin, and said pin also having a concave upper rear edge portion K, and lower rounded rear edge portion L, of a band or collar A₁ surrounding the drawhead in line with the pin holes therein, adapted to be vertically adjusted on said drawhead, and connected to the upper end of said coupling-pin by a loose joint, substantially as described and shown and for the purposes herein set forth.

No. 27,515. Elevating and Scouring Attachment to Grain Threshers and Separators. (*Appareil élévatoire et de nettoyage pour les machines à battre et à séparer les grains.*)

Edward D. Macpherson, Fingal, Ont., 30th August, 1887; 5 years.

Claim.—An attachment to threshers and separators, for elevating and scouring grain, consisting of a cylindrical case C, having hopper D near the bottom, and discharge E near the top and longitudinally, a shaft G provided at intervals with screw disks I, and intervening rods J radially crossed, whereby grain from the separator is received by the hopper, elevated by the screw disks, scoured by the rods and discharged through spout near the top of the case, as set forth.

No. 27,516. Fanning Mill. (*Turarc-cribleur.*)

Louis Lambert, Louiseville, Que., 30th August, 1887; 5 years.

Claim.—1st. The combination, in a fanning mill, of the screens *a*, with the strips E secured to the frame A, and having the pins D set in them, and the rods F in the slots G to support the screens *a*, substantially as described and for the purpose set forth. 2nd. In a fanning mill, the wind-board I connected by the hinges *b*₁, with the body or frame of the machine, and having attached to it the slotted wing *c*, which is held to the side of the frame A by the bolt *d*₁ and nut *f*₁, substantially as described and for the purpose set forth. 3rd. In a fanning mill, the finger-board L provided with the fingers *k*₁, and resting movably upon the cleats *g*₁, which are secured to the body or frame A, substantially as herein shown and described and for the purpose set forth.

No. 27,517. Band Saw-Mill.

(*Scierie à scies sans fin.*)

William Gillis, Buckingham, Que., 30th August, 1887; 5 years.

Claim.—1st. In a band sawmill, having the upper wheel B journaled in a movable yoke C, hung by a chain H from one or more pulleys G, the spring I supporting one end of the chain, and the other end wound around the drum of a windlass, having springs N resisting the strain of the chain upon the drum, whereby the springs will respond to tighten and slacken the chain to keep the saw at a uniform tension, as set forth. 2nd. In a band sawmill, the chain H having one end connected to a spring I, bearing on a column or fixture A, and the other end winding on a drum or windlass, whereby the spring will respond to variable strains on the chain to keep the saw at a uniform tension, and the expansion and contraction of the chain may be regulated by turning the drum, as set forth.

No. 27,518. Mechanism for Propelling Vessels. (*Mécanisme de propulsion des vaisseaux.*)

George C. Baker, Des Moines, Iowa, U. S., 30th August, 1887; 5 years.

Claim.—1st. A vessel or boat so constructed and arranged that the line of propelling power is at a vertical angle with the horizontal plane of the boat, or vessel, or surface of the water, also so constructed and combined that the boat, or vessel, will move upward or downward through the water, or forward and backward through and under the water, or remain stationary under the water, substantially as shown and described. 2nd. A vessel, or boat, so constructed and arranged that the line of propelling power is at a vertical angle with the horizontal plane of the vessel, or boat, or surface of the water, also so constructed and combined that the vessel, or boat, will move upward or downward through the water, or forward and backward through and under the water, or remain stationary under the water, and also so constructed and combined that the said vertical angle may be changed at any time by the operator of the vessel or boat, substantially as shown and described. 3rd. The method or process of changing the vertical position of a vessel, or boat, riding in the water, by changing at the will of the operator the vertical angle of the line of propelling power, with the horizontal plane of the vessel or surface of the water. 4th. The combination of the main shaft A, provided at its ends with sleeves resting in bearings in the sides of the vessel, which sleeves are adapted to carry propellers operating in conjunction with the main shaft A, and provided with means of

adjusting the same, substantially as specified and for the purposes stated. 5th. The main shaft A, provided with the sleeves D, D resting in bearings E, E, which sleeves have arms g, g extending from their outer ends at right angles, and projecting outward from which are the bearings h, h carrying the propeller shafts m, m, which operate in conjunction with the main shaft A by means of the bevel-gears b, b and c, o, and the whole provided with means for adjusting the sleeves and propellers, substantially as set forth and for the purposes stated. 6th. A driving shaft having bevel-gears on its ends, sleeves having arms extending at right angles from their outer ends carrying propeller wheels, and mechanism for rotating and adjusting the sleeves, arranged and combined with a vessel to operate in the manner set forth for the purposes stated. 7th. A vessel having a driving shaft extending horizontally and transversely through its central portion, sleeves upon the ends of said shaft, arms extending at right angles from the outer ends of said sleeves, propeller wheels in bearings extending at right angles from said arms, mechanism for operating the propeller wheels carried on the arms extending from said sleeves, arranged and combined to operate in the manner set forth for the purposes stated. 8th. In combination with a marine or aerial vessel, an adjustable propeller wheel, and means for operating the same in such a manner that the wheel will always when in motion revolve at right angles to the line of the advance of the vessel, and also in such a manner that the wheel can be adjusted and retained at any point desired relative to the center of gravity of the vessel, so that the wheel will draw the vessel forward or backward, downward or upward, or retain it submerged and practically stationary at the will of the operator.

No. 27,519. Clothes Pin. (*Épingle à étendage.*)

Séraphin E. Bergeron, Fall River, Mass., U. S., 30th August, 1887; 5 years.

Claim.—A clothes-pin consisting of a single piece of wire doubled to form a loop a, and twisted, as at b, to close the loop, the free ends of the wire each being bent and secured to the body portion, as shown and described, forming two loops d extending at right angles to the body of the pin, and adapted to clamp the clothes between them, said pin being provided with a ring at its looped end, substantially as set forth.

No. 27,520. Ventilating Apparatus.

(*Appareil de ventilation.*)

Luke J. Hope and John T. Hope, Kansas, Mo., U. S., 30th August, 1887; 5 years.

Claim.—1st. In ventilating apparatus, an air fan having inclined vanes, and a motor-wheel rim, substantially as described. 2nd. In ventilating apparatus, an air-fan having inclined vanes, in combination with a motor-wheel rim sustained from the axle of said fan, substantially as described. 3rd. In ventilating apparatus, the combination, with an air-fan having inclined vanes, of a motor-wheel sustained from the axle of said fan and an enclosing case for said wheel, substantially as described. 4th. In ventilating apparatus, the combination, with an air-fan having inclined vanes, and a motor-wheel rim secured peripherally thereto, of an enclosing case for said wheel provided with inlet and outlet passages for the motive agent, substantially as described. 5th. In ventilating apparatus, the combination, with an air-fan having inclined vanes, and a motor-wheel rim secured peripherally thereto, of a divided or separable case enclosing said wheel, and provided with journal bearings for the fan-axle and with inlet and outlet passages for the motive agent, substantially as described. 6th. In ventilating apparatus, the combination, with a hub and with the inclined vanes extending therefrom, of a peripheral drum secured to said vanes, substantially as described. 7th. In ventilating apparatus, the combination, with a hub and with the inclined vanes extending therefrom, of a peripheral drum secured to said vanes, a bucket-rim having a projecting ring attached to said drum, and a divided or separable case enclosing said motor-rim, and provided with journal-bearings for the hub-axle, and with suitable inlet and outlet passages for the motive agent, substantially as described. 8th. In ventilating apparatus, the combination, with a hub having inclined vanes extending therefrom, of a bucket rim sustained by said vanes, and a divided or separable case enclosing said rim, the case sections having inwardly-turned edges, and the bucket-rim having lateral flanges co-operating therewith, whereby the motive agent is retained and returned to the outlet of the case without leaking, substantially as described. 9th. In ventilating apparatus, the combination, with a hub having inclined vanes extending therefrom to constitute an air-fan, of a bucket-rim sustained from the axle of said fan and forming a motor-wheel therefor, and a divided or separable case enclosing said rim, the same having an enlarged pocket for the waste agent, and suitable inlet and outlet passages for the supply and discharge thereof, substantially as described. 10th. In ventilating apparatus, the combination, with a hub having inclined vanes extending therefrom to constitute an air-fan, of a bucket-rim sustained from the axle of said fan and forming a motor-wheel therefor, and a divided or separable case enclosing said rim, the same having an enlarged pocket for the waste agent, and suitable inlet and outlet passages for the supply and discharge thereof, said case-sections being also provided with inwardly turned edges, and the bucket-rim with lateral flanges thereof, whereby, in co-operation, the motive agent is retained and returned to the outlet without leaking from the case, substantially as described. 11th. In ventilating apparatus, the combination, with a hub having inclined vanes extending therefrom to constitute an air-fan, of a bucket-rim sustained from the axle of said fan, and forming a motor wheel therefor, and a divided or separable case enclosing said rim, the case sections having inwardly turned edges, and the bucket having lateral flanges co-operating therewith, whereby the motive agent is retained and returned to the outlet of the case without leaking, substantially as described. 12th. In ventilating apparatus, the combination, with a hub having inclined vanes extending therefrom to constitute an air-fan, of a bucket-rim sustained from the axle of said fan, and forming a motor therefor, and a divided or separable case enclosing said rim and having suitable inlet and outlet passages

for the motive agent, said case-sections being provided with inwardly turned edges and the bucket-rim with lateral flanges thereon, whereby, in co-operation, the motive agent is retained and returned to the outlet of the case without leaking, substantially as described.

No. 27,521. Reaper and Mower.

(*Faucheuse-moissonneuse.*)

Harlow D. Hatheway, Antwerp, N. Y., U. S., 30th August, 1887; 5 years.

Claim.—1st. The combination, with the main frame and the supporting and driving wheels, provided with ratchets on the inner ends of their hubs, of the internally-toothed wheels keyed to the axle inside of the driving wheels, and provided with the spring-pressed dogs in their hubs, the gear-shifters connected to the foot-lever, the shouldered spring catch for engaging the foot-lever, the transverse driving-shaft provided with the end pinions, and the intermediate miter-gear, the sleeve 19 provided with the miter-pinion H and the cog-gear 20, the double-crank shaft, the pitman rods 10 and 30, the hinged brace-rods connecting the inner shoe to the frame, the outer-bar, pitman-rods and the double knives, substantially as specified. 2nd. The combination, with the main frame secured to the axle mounted in the supporting and driving wheels provided with ratchets on the inner faces of their hubs, the internally-toothed gears secured to the axle and provided with the spring-pressed dogs in their hubs, of the gear shifters 6, 6 secured at their inner ends to the foot-lever 7, the spring-catch 9, the rear transverse driving-shafts with end pinions and an intermediate miter-gear, the double crank shaft with pinion near its rear end, the pitman-rods secured to the double crank shaft and to the reciprocating knives, the hinged lifter-bar and the chain and levers for raising, holding and lowering the lifter-bar and outer-bar, substantially as specified. 3rd. The combination, with the finger-bar and the outer shoe provided at its rear end with the teeth of the track-cleaner comprising the spring-pressed detents and arms held in the sockets, substantially as specified.

No. 27,522. Blinding Attachment for Bridles. (*Oeillère de bride.*)

Charles H. Adams, New York, N. Y., U. S., 30th August, 1887; 5 years.

Claim.—1st. The combination, with the winkers or blinds of a bridle, of pulleys attached thereto, and cording also secured to the blinds adapted to pass over said pulleys and over the neck, substantially as shown and described and for operation as herein set forth. 2nd. The combination, with the winkers or blinds of a bridle, of pulleys attached at the upper inner ends, and cording secured below said pulleys adapted to pass over the same, the said cords crossing between the blinds and over the neck, substantially as shown and described and for the purpose herein set forth. 3rd. The combination, with blinds or winkers a having pulleys A attached to the upper inner sides, of cords B, B secured to the blinds below the pulleys, the said cords passing over the pulleys immediately above them, and crossing one another between the blinds over the opposing pulleys to the rear terminating in a single cord C, substantially as shown and described and for the purpose herein set forth.

No. 27,523. Corset. (*Corset.*)

Wilton J. Roberts, New York, N. Y., U. S., 30th August, 1887; 5 years.

Claim.—1st. The improved method of making corsets or body braces, which consists in arranging and fastening together separate strands of wire to form a fabric corresponding to the contour of the body, substantially as set forth. 2nd. A corset or body brace made out of separate strands of wire, arranged to conform and correspond to the curvilinear contour of the body, and fastened together at intervals in such a manner that the resulting fabric retains its curvilinear contour, substantially as set forth. 3rd. A corset or body brace made out of separate strands of wire, arranged and formed curvilinearly to correspond to the contour of the body, and fastened together at intervals, so that the resulting fabric retains its curvilinear form, said corset comprising stays or strips incorporated in or connected to the fabric to modify its resiliency in certain directions, substantially as set forth. 4th. A corset or body brace made out of separate strands of wire, arranged and formed curvilinearly to correspond to the contour of the body, fastened together at intervals, said strands varying in number in accordance with the extent of the surface of the body to be covered in such a manner that the resulting meshes approximate uniformity of size, substantially as set forth. 5th. A corset or body brace, of curvilinear contour, composed in intertwined strands forming meshes which lie in the planes of adaptation to the contour of the body, substantially as described. 6th. A corset or curvilinear body brace composed of intertwined strands, forming meshes which lie in the planes of adaptation to the contour of the body, the said meshes having a greater number of twists in some parts of the corset than in others to modify the resiliency of different parts of the same, substantially as shown and described. 7th. A corset or curvilinear body brace, composed of strands of wire fastened together, forming meshes which lie in the planes of adaptation to the contour of the body, said corset having in different parts meshes of different pattern for modifying the strength, permanency of contour and resiliency of different parts of the same, substantially as set forth. 8th. A corset or curvilinear body brace, composed of intertwined strands forming meshes, which lie in the planes of adaptation to the contour of the body, combined with means for exerting an independent tension upon certain parts of said corset, whereby the meshes are crowded together, substantially as described. 9th. A corset or curvilinear body brace composed of intertwined strands, forming meshes which lie in the planes of adaptation to the contour of the body, in combination with stays to secure permanency of contour and prevent the crowding together of the meshes overlying certain parts of the body, substantially as set forth. 10th. A corset or body brace of curvilinear contour, made out of separate strands of wire fastened together, so as to form meshes which lie in the planes of adaptation to the contour of the body, said meshes varying

in size in different parts of the resulting fabric, substantially as set forth.

No. 27,524. Water Tube. (*Tuyau d'eau.*)

Wesley Kouns, Salina, Ks., U.S., 30th August, 1887; 5 years.

Claim.—1st. In a water-tube, the combination of the inner and outer walls having an air-compartment formed between them, a suitable automatically operated water-supply, and removable drinking buckets situated in openings in the top portion of the tube, substantially as described. 2nd. In a water-tube, the combination of the inner and outer walls, having an air-compartment formed between them, the said outer wall extending downward to near the bottom of the inner wall, and forming an opening for the passage of air, a suitable automatically operated water-supply and removable drinking buckets having feed apertures situated in openings in the top portion of the tube, substantially as described. 3rd. In a water-tube, an inner and outer wall, said inner wall being constructed as a closed compartment, and forming a reservoir having a dome-shaped top and bottom, the outer wall connected to the inner wall and open at its lower portion, and circular walls forming the openings for the reception of the buckets connecting the inner and outer walls, said walls having a space left between them for the circulation of air, substantially as described. 4th. In a water-tube, the combination of the internal and external walls having an air-space formed between them, an automatically operated water-supply adapted to feed water to the reservoir formed by the internal wall, removable drinking buckets having apertures arranged at suitable distances above the bottoms thereof, and guards on the exterior surface of the dome adjacent to the flanges of the buckets, substantially as described.

No. 27,525. Head Gear. (*Coiffure.*)

Abraham Brahadi, Montreal, Que., 30th August, 1887; 5 years.

Claim.—1st. A winter cap having recesses formed in its substance, and ear-laps sliding in same, all as herein set forth. 2nd. The combination, with a winter cap having recesses formed in thickness of same, of ear-laps sliding into such recesses and flexible connections of same to substance of cap, all as herein described. 3rd. The ear-lap formed of fur stretched over an outside with frame, as described and shown.

No. 27,526. Apparatus for Hoisting and Moving Earth in Trenches. (*Appareil à hisser et remuer la terre*)

John Ryan and Maurice J. Sheahan, Toronto, Ont., 30th August, 1887; 5 years.

Claim.—1st. An apparatus for hoisting and moving earth, consisting of a single track elevated incline, railways cars adapted thereto, for hoisting and moving buckets for holding material, and ropes for hoisting, all combined substantially as shown and described. 2nd. The bucket A, connecting hook G, stirrup C, sliding cylinder E, cone H, grappling hook J and ropes U, all combined substantially as shown and described. 3rd. The trigger I, connecting bar Q, hinged buffer R, stirrup C and sliding cylinder E, all combined substantially as shown and described. 4th. The car 50 having wheel L, hoisting sheave K, grappling hook J, trigger I and rope U having cone H all combined, substantially as shown and described.

No. 27,527. Rotary Steam Engine.

(*Machine à vapeur.*)

Justin Hills, Ischua, and Franklin Fitch, Franklinville, N.Y., U.S., 30th August, 1887; 5 years.

Claim.—1st. In a rotary steam engine, the combination of the cylinder having an inlet at each end, and an exhaust in its lower side, the piston wheel arranged eccentrically in said cylinder, and having two semi-circular channels in each end, and the transverse channels in the circumference, each of which connects a pair of the channels in the opposite faces of the wheel, the piston hinged upon the wheel at the edges of the transverse channels, the springs bearing with their free ends against the inner side of the pistons, and the packing plates bearing against opposite faces of the piston-wheel, substantially as and for the purpose shown and set forth.

No. 27,528. Water Closet. (*Latrines à l'eau.*)

William H. McAndrews and Albert M. Gerstle, Youngstown, Ohio, U.S., 30th August, 1887; 5 years.

Claim.—1st. The combination of the seat J hinged to the frame of closet, spring D, crank-rod H pivotally attached to crank E₁ on tumbling rod E, which is adapted to work in air-tight bearings in the lower bowl B, the bowl A having lower aperture pipe A₁, and the cup F rigidly attached to tumbling rod E, and adapted to hold water in which the lower aperture pipe A₁ is immersed when the closet is not in use and sealing the bowl A, substantially as described and specified. 2nd. The combination of the seat J hinged to the frame of closet spring D, crank-rod H pivotally attached to crank E₁ on tumbling rod E, which is adapted to work in air-tight bearings in the lower bowl B, the bowl A having lower aperture pipe A₁, and the bowl A having lower aperture A₁, and the lipped cup P rigidly attached to tumbling rod, and adapted to hold mercury for the purpose of hermetically closing the lower aperture pipe A₁, substantially as described and specified. 3rd. The combination of the seat J hinged to frame of closet, spring D, crank rod H pivotally attached to crank E₁ on tumbling rod E, which is adapted to work in air-tight bearings in the lower bowl B, the bowl A having lower aperture pipe A₁, and the cup Q having a ring q of yielding material which is adapted to hermetically close the lower aperture pipe A₁ when it impinges on said ring, substantially as described and specified. 4th. The combination of the valve rod M actuated by the raising and lowering of the seat J, and adapted to open and close by the slide valve o in the cylinder C, the mouths of main pipe C₁ and the bifurcated water pipe K having the curved branch K₁, which passes into the lower bowl B and terminates in a nozzle G, through

which a spray of water is forced creating a downward draft when the closet is in use, substantially as specified. 5th. The combination of the seat J, hinged to the frame of closet, spring D, crank-rod H pivotally attached to crank E₁ on tumbling rod E, adapted to work in air-tight bearings in the lower bowl B having lower aperture pipe B₁, the bowl A having flange b which forms the cover of bowl B and lipped at a, and having lower aperture pipe A₁, the valve rod M pivotally attached to seat J and which actuates the slide-valve o so as to open and close main pipe C₁ and the water pipe K which is bifurcated at k, and has the curved branch K₁ passing through flange b into bowl B and terminating in nozzle G and a cup which is rigidly attached to tumbling rod E adapted to close hermetically the lower aperture pipe A₁, substantially as specified. 6th. A closet in which a spray of water under pressure is utilized for the purpose of creating a downward draft into the sewer when the closet is in use and having the lower aperture of the upper closet bowl hermetically closed when not in use, substantially as described and specified.

No. 27,529. Combined Powder Receptacle and Cleaner for Knives, etc. (*Machine à nettoyer les couteaux, etc.*)

Henry Volmer (assignee of Ellen Appleton), Manchester, Eng., 30th August, 1887; 5 years.

Claim.—1st. The combination, with a canister adapted to hold polishing powder, having a series of apertures therein, of polishing pads attached to said canister, and means for introducing the powder from the canister between said pads, substantially as herein shown forth. 2nd. The combination, with the canisters A, A₁ adapted to hold a polishing powder apertured at opposing sides, and sliding bolts b uniting said canisters of polishing pads c and d secured to the opposing faces of the said canisters, and apertured to correspond with the apertures in the canisters, substantially as shown and described. 3rd. The combination, with a canister adapted to hold polishing powder, having a series of apertures in the bottom of two polishing pads, secured to the bottom of said canister, the upper pad having apertures therein, corresponding with the apertures in the canister, substantially as shown and described, whereby the powder from the canister is automatically carried to the pads, and an article of cutlery introduced between said pads is cleaned upon both sides at one operation, as herein set forth.

No. 27,530. Mechanical Movement.

(*Moteur mécanique.*)

Robert H. Isbell, New York, and Walter S. Logan, Brooklyn, N.Y., U.S., 30th August, 1887; 5 years.

Claim.—The combination of two knee-joints, and an actuating lever pivoted thereto and fulcrumed thereupon, substantially as described, as a means of moving parts to which it is attached back and forth between certain positions or of locking them therein.

No. 27,531. Photographer's Chair.

(*Chaise de photographe.*)

Theodore E. Dean and Fred G. Clark, Cleveland, Ohio, U.S., 30th August, 1887; 5 years.

Claim.—1st. In a photographer's chair, the combination, with the platform A, supported on casters a, a, of a hollow pedestal B supporting a revolving seat C, adjustable to position by the lever pawl T, and having a central spindle D setting in said pedestal B upon a spring E, said spindle D also coming in contact with and operating the brake-lever F and brake pad G, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of a revolving seat pivoted with an adjustable back-rest, consisting of the double bracket H, adjustable arm I and pad J, substantially as and for the purpose hereinbefore set forth. 3rd. The combination with the seat C, of the adjustable arm rest N, supported by the bracket L, the stem M and the sliding head m, substantially as and for the purpose hereinbefore set forth. 4th. The combination, with the arm-rest N, of the infant attachment consisting of the lever bracket O, rod P and clamps Q, Q and R, R, substantially as and for the purpose hereinbefore set forth. 5th. The combination, with the platform A, of the head-rest holder V kept in position by the bar U, and the rollers U₁ U₂, and W, W, and looked when necessary by means of the brake lever Y, operated by the rod y and cam lever Z, substantially as and for the purpose hereinbefore set forth.

No. 27,532. Cigar Holder. (*Porte-cigare.*)

John H. Noble, London, and Jamus Noble, Brantford, Ont., 30th August, 1887; 5 years.

Claim.—In a cigar holder, a pair of levers D, D, hinged centrally at a to the exterior of said holder, the ends d, d, whereof are connected and controlled by spring E, the opposite ends d₁, d₁, being provided with sharp points or teeth F, which pass through orifices in outer end of holder, so as to bite into and retain the cigar when inserted therein, substantially as shown and specified.

No. 27,533. Photographic Printing.

(*Impression photographique.*)

Redfield B. West and Benjamin C. West, Guilford, Conn., U.S., 30th August, 1887; 5 years.

Claim.—1st. The herein described composition for bath for the development of photographic prints, which are obtained by the action of light upon paper sensitized with potassium-bichromate and mercuric chloride, said compound consisting of pyrogallol gallic-acid, a ferrous salt soluble in water and sodium-hypoaliphite, in the proportions and substantially as described. 2nd. The process herein described for developing photographic prints, which are obtained by the action of light upon paper, sensitized with potassium-bichromate and mercuric-chloride, consisting in subjecting the print to a bath,

composed of a two per cent. solution of pyrogallol, gallic-acid, a ferrous-salt soluble in water, and sodium-hyposulphite, in the proportions and substantially as described. 3rd. The herein described improvement in bleaching photographic prints, consisting in subjecting the prints to a solution of calcium-hypochlorite and phosphoric acid in the proportions and substantially as described. 4th. The

herein described improvement in toning photographic prints, which are produced by the action of light upon paper sensitized with potassium-bichromate and mercuric chloride, where a cold grey color is desired, consisting in subjecting the prints to a toning bath, composed of a solution of lead nitrate and mercuric-chloride, in the proportions, substantially as described.

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

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| <p>939. H. DIERLAUM and J. LINGE, 2nd 5 years of No. 15,279, from the 10th day of August, 1887. Composition of Matter to be used as a Remedy for Diptheria, Catarrh and Croup, 1st August, 1887.</p> | <p>945. D. W. STOCKSTILL, T. J. McGEARY, E. W. ANDERSON and J. C. SMITH, 2nd 5 years of No. 15,314, from the 14th day of August, 1887. Improvements in Plastering and Ornamenting Walls and Ceilings, 8th August, 1887.</p> |
| <p>940. J. E. BARIL, 2nd 5 years of No. 7,740, from the 9th day of August, 1887. New and Useful Improvements in Ice Houses, 4th August, 1887.</p> | <p>946. A. GETCHELL, 2nd 5 years of No. 15,409, from the 2nd day of September, 1887. Improvements in Treating Copper, 12th August, 1887.</p> |
| <p>941. A. G. SMYTHE and J. SMITH, 3rd 5 years of No. 7,753, from the 11th day of August, 1887. Improvements in Devices for Converting Reciprocating into Rotary Motion, 5th August, 1887.</p> | <p>947. J. A. McRAE, 2nd 5 years of No. 15,380, from the 28th day of August, 1887. Improvements on Seamless Boots, 15th day of August, 1887.</p> |
| <p>942. J. G. GALLEY, 2nd 5 years of No. 15,265, from the 8th day of August, 1887. Improvements on Rocking Fixtures, 6th August, 1887.</p> | <p>948. J. W. RUSSELL (assignee), 3rd 5 years of No. 7,791, from the 2nd day of August, 1887. Improvements in Fanning Mills, Grain and Seed Separators, 15th August, 1887.</p> |
| <p>943. W. LAMPERL, H. HUBER, T. H. BUTTER, G. W. EARHART, and W. CRAWFORD, 2nd 5 years of 15,241, from the 7th day of August, 1887. Improvements in Bretzel Machines, 6th August, 1887.</p> | <p>949. J. W. ATKINS and W. H. LYNCH, 3rd 5 years of No. 7,787, from the 18th day of August, 1887. Improvements on Rotary Churns, 17th August, 1887.</p> |
| <p>944. E. C. CONVERSE, 2nd 5 years of No. 15,045, from the 4th day of July, 1887. Improvements in Couplings for Tubing, 8th August, 1887.</p> | <p>950. L. HAY, 2nd 5 years of No. 15,329, from the 17th August, 1887. Improvements on Stock Cars, 17th August, 1887.</p> |
| | <p>951. T. MANN, 3rd 5 years of No. 7,853, from the 3rd day of September, 1887. Improvements in Brick and Mortar Hoisting Machines, 30th August, 1887.</p> |
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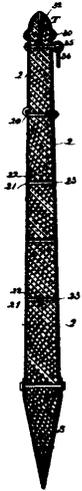
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

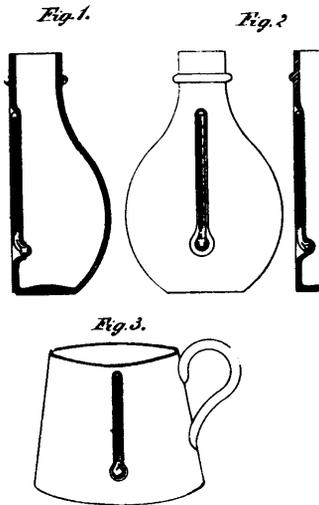
Vol. XV.

SEPTEMBER, 1887.

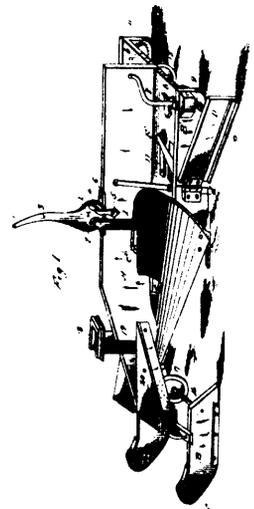
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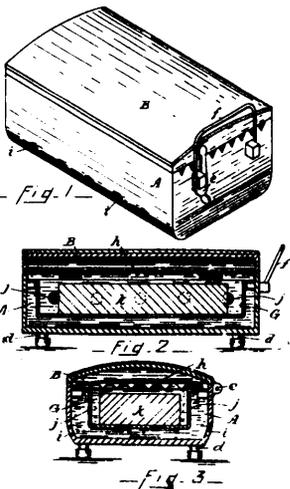
27316 Parker's Post for Fences, etc.



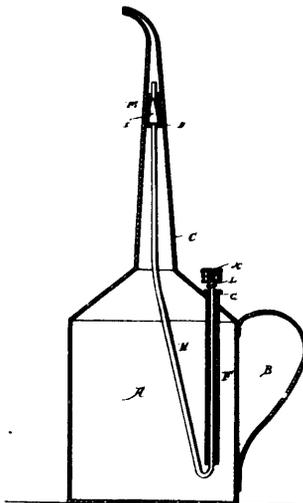
27317 Pocock's Feeding Bottle, etc.



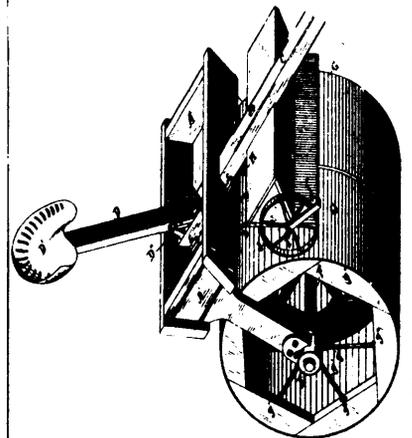
27318 Brazel's Snow Plough.



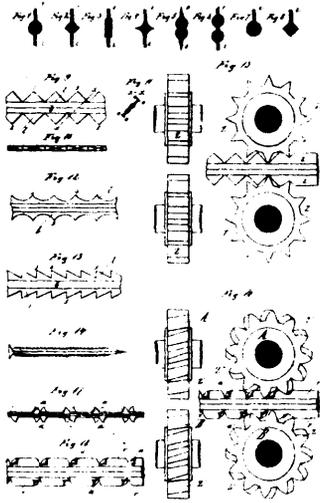
27319 Lymburner's Foot Warmer.



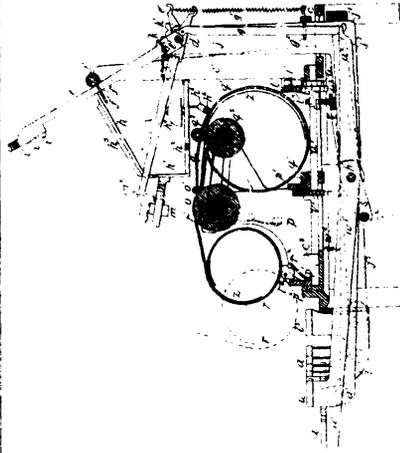
27320 Hill's Oil Can.



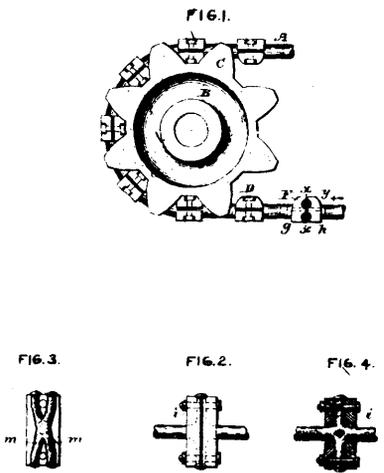
27321 Corbin's Land Roller and Seeder.



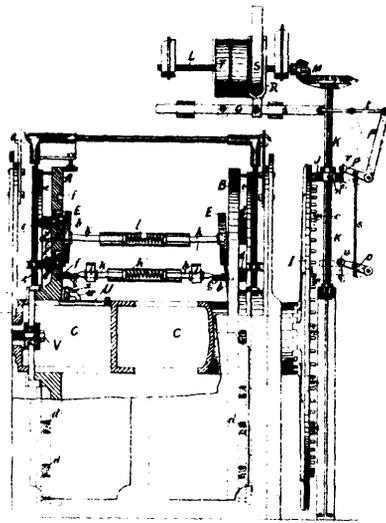
27322 Schmidt's Barbed Wire.



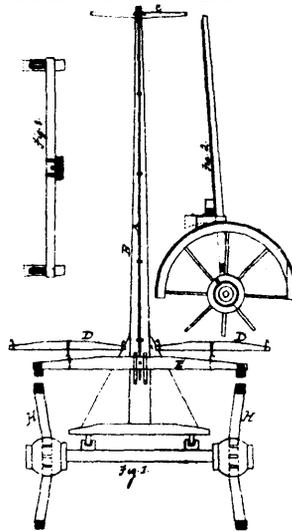
27323 Fitch's Type-Writing Machine.



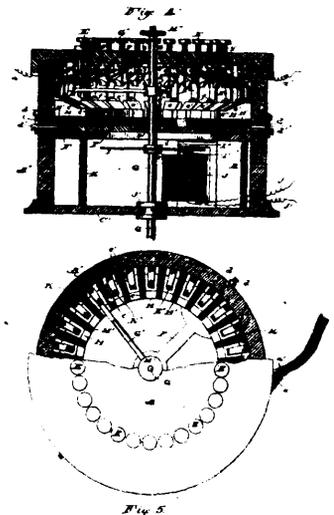
27324 Garland's Rope or Cable Coupling.



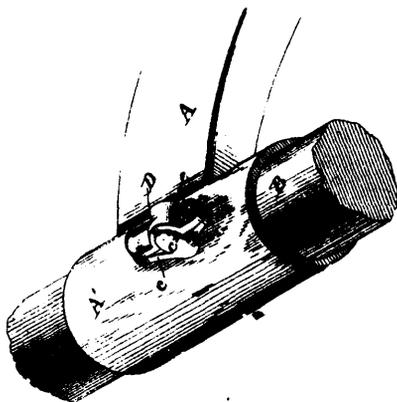
27325 Lister's Machinery for Drying Fabrics.



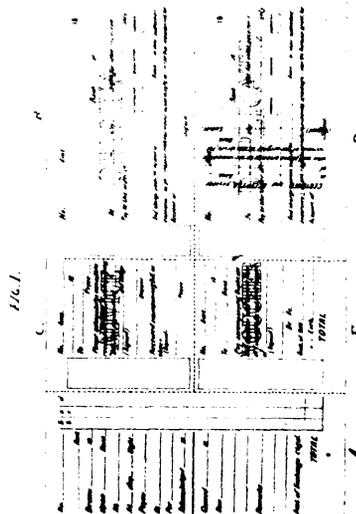
27326 Crosby's Brake for Waggon, etc.



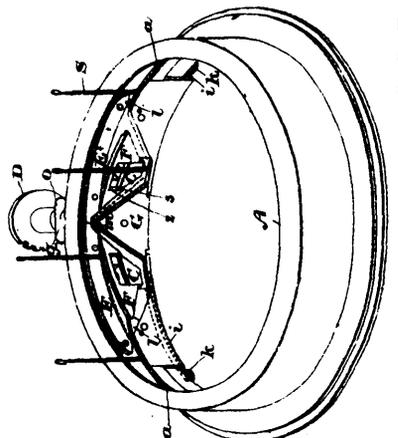
27327 McLaughlin's Transmitter for Electrical Type Writers.



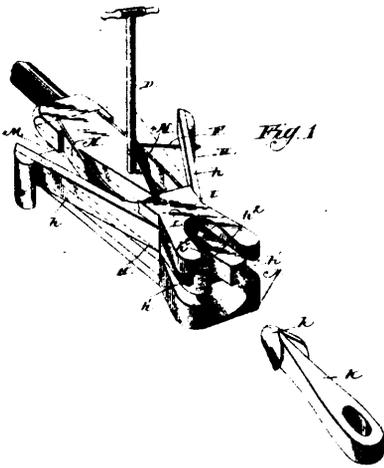
27328 Herrington's Oil Hole Cover.



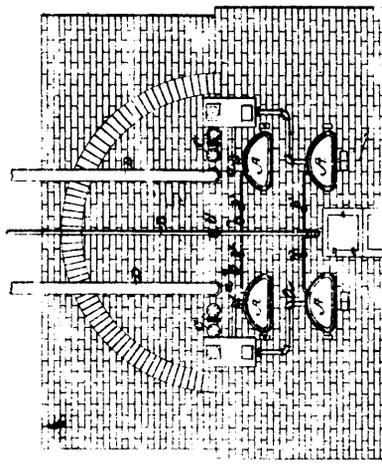
27329 Goldstein's Bill of Exchange.



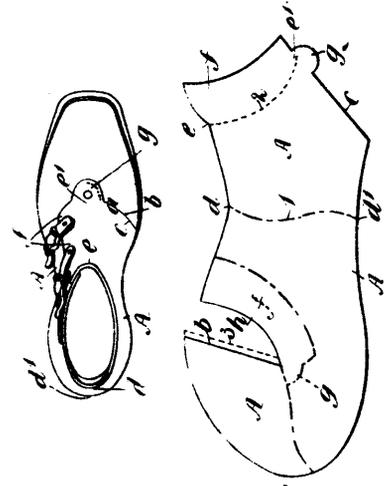
27330 Kitson's Knitting Machine.



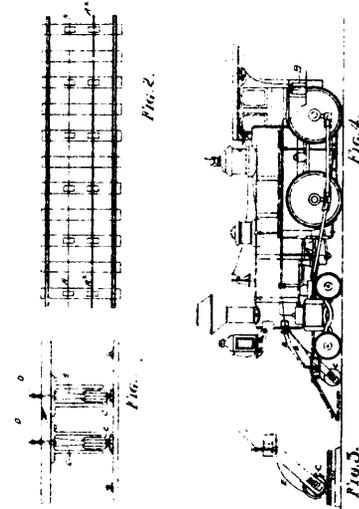
27331 Thrush & Avra's Car-Coupling.



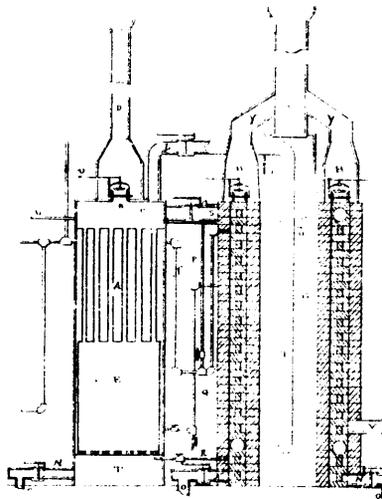
27332 Lane's Manufacture of Coal Gas.



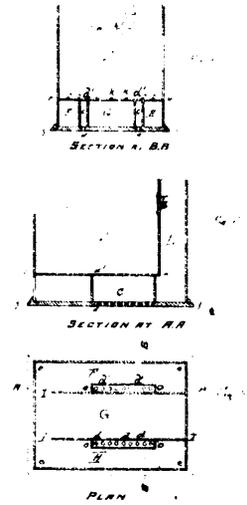
27333 Tobin's Upper of Boot and Shoe.



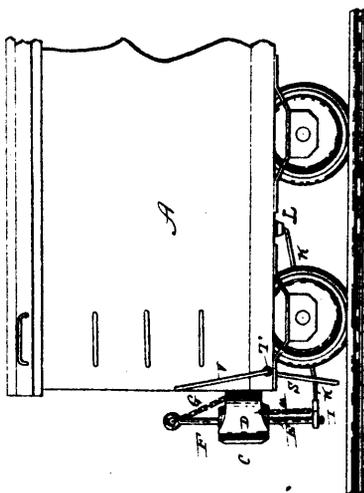
27334 Mackie's Electric Alarm Railway Signal.



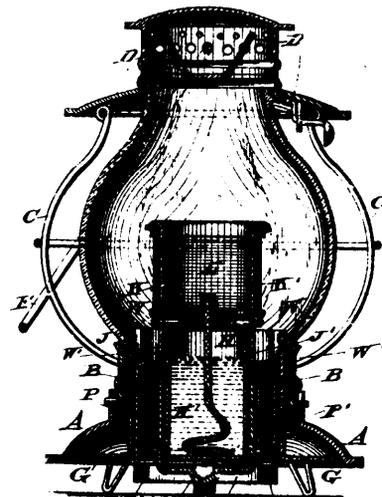
27335 Bujac's Manufacture of Gas.



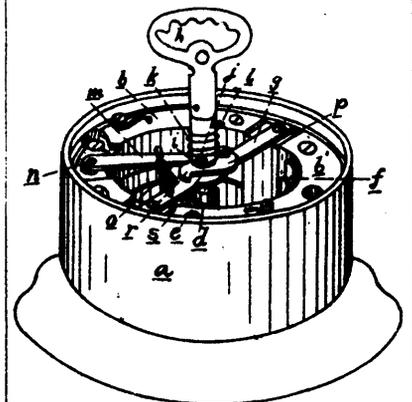
27336 Jones and McCormack's Stove Oven.



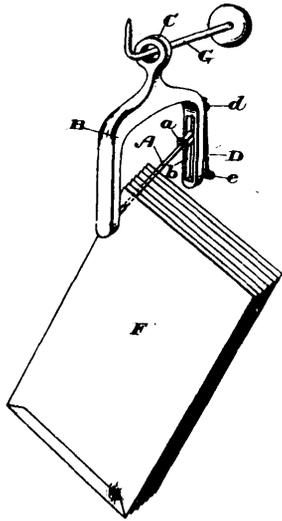
27337 Edwards' Car-Coupling.



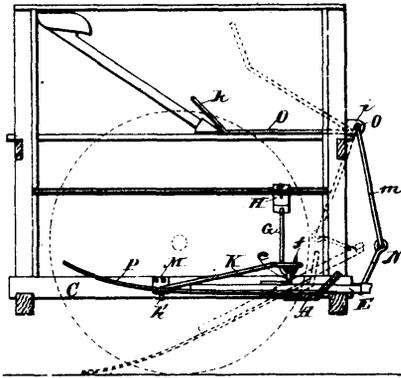
27338 Copper and Bair's Signal Lantern.



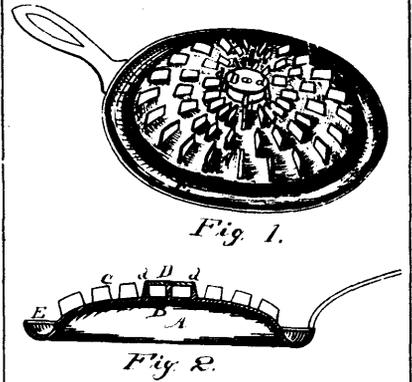
27339 McElroy's System of Electrical Distribution.



27350 Wynn's Paper Bag Holder.



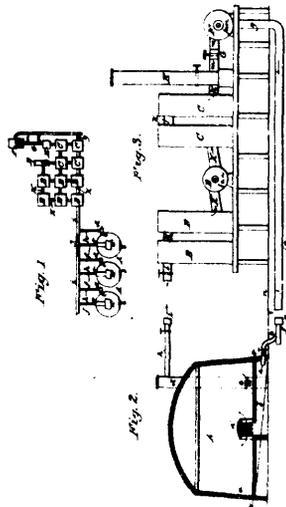
27351 Bell's Sheaf Carrier, etc.



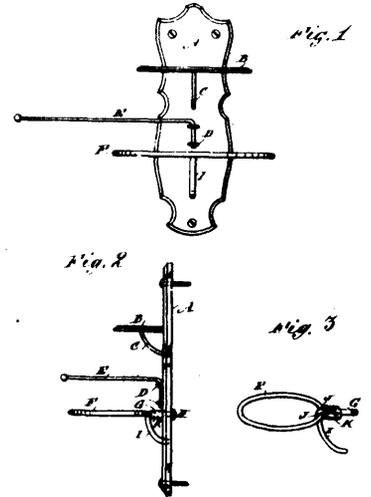
27352 North's Broiler.



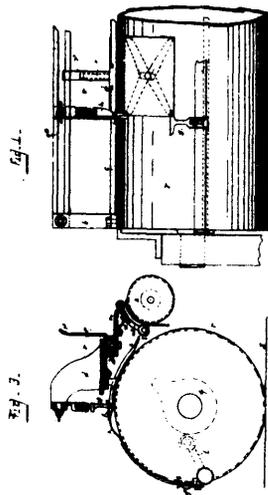
27353 Hill's Apparatus for Tilting Casks.



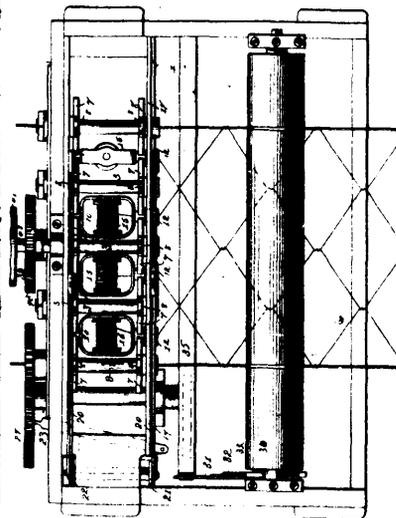
27354 Burrell's Manufacture of Charcoal, etc.



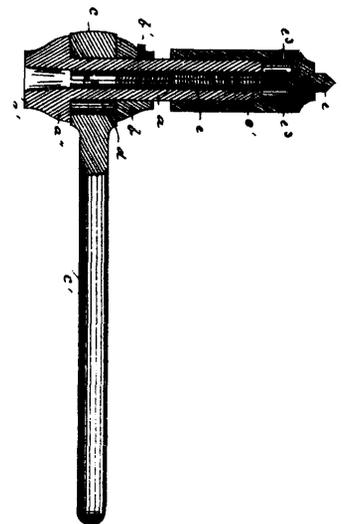
27355 Tolman and Robert's Wash Stand.



27356 Moritz's Printing Press.



27357 Conner's Machine for Forming Netted Wire Fabrics.



27358 Smith's Hand Drilling Machine.

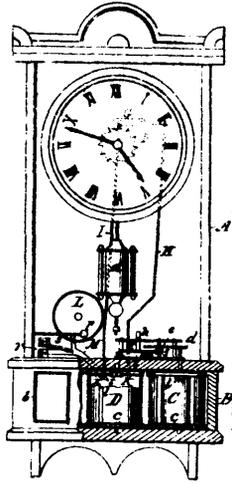


Fig 1

27359 Straitt's Advertising Clock.



Fig 1

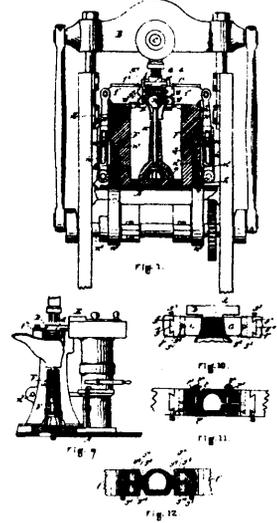


Fig 2



Fig 2

27360 Belger and Eberhart's Fabric Boot.



27361 Raymond's Heel Nailing Machine.

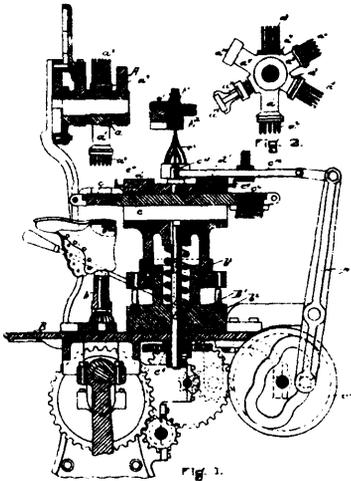


Fig 1

27362 Raymond's Heel Attaching Machine

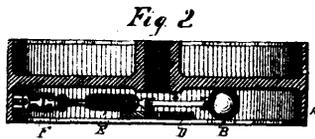


Fig 2

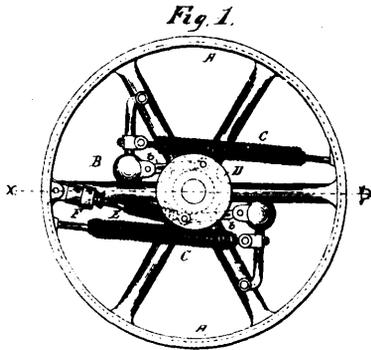


Fig 1

27363 Ball's Steam Engine Governing Device.

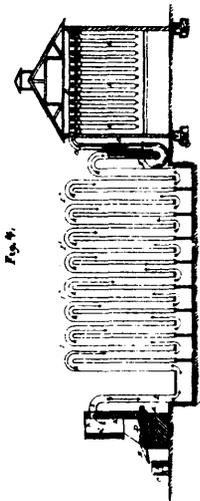
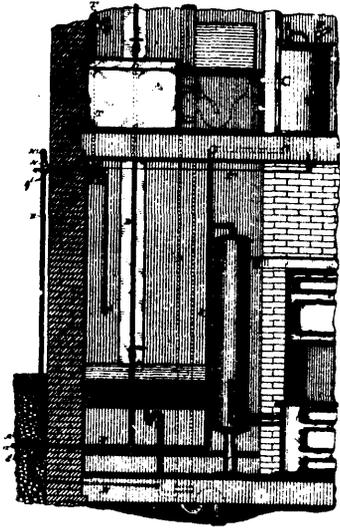


Fig 1

27364 Lewis' Process of Making White Pigments.



27365 Newman's Anti-Freezing Apparatus.

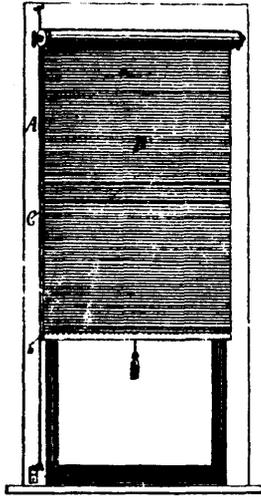
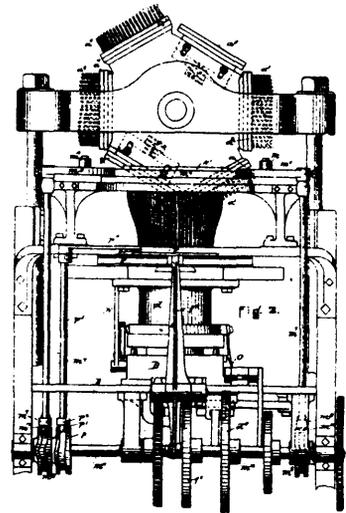
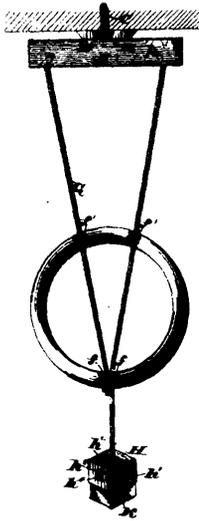


Fig 1

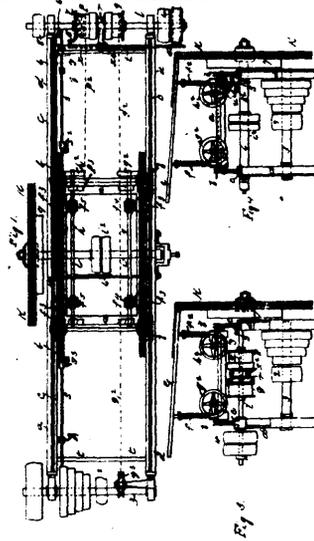
37366 Haswell's Curtain Guide.



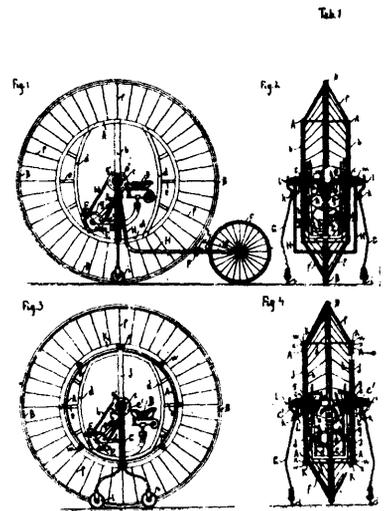
27367 Raymond's Sole Nailing Machine.



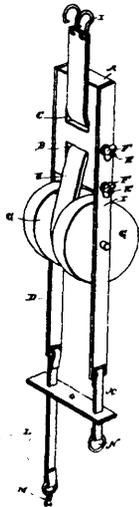
27368 Seely's Chalk Suspenders.



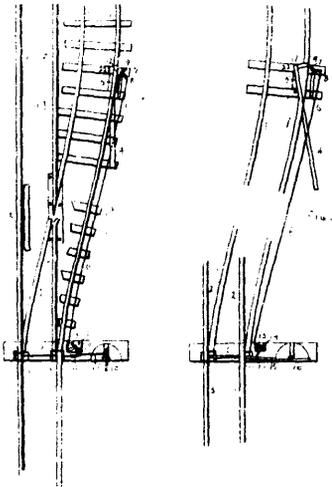
27369 Hawkes' Machinery for Beveling and Moulding Glass, etc.



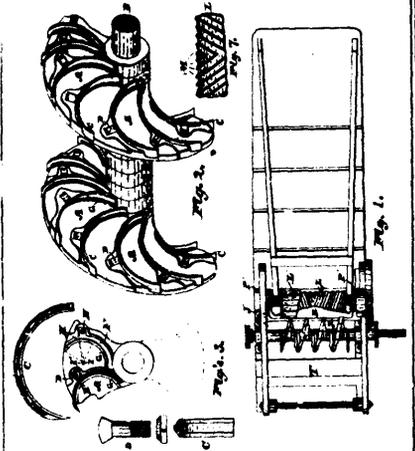
27370 Benez's Velocipede.



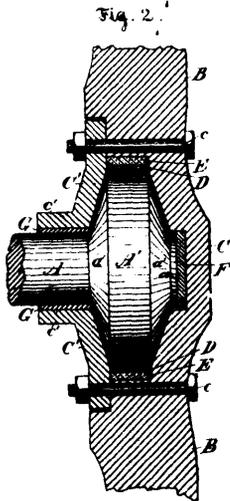
27371 Ogden's Fire-Escape.



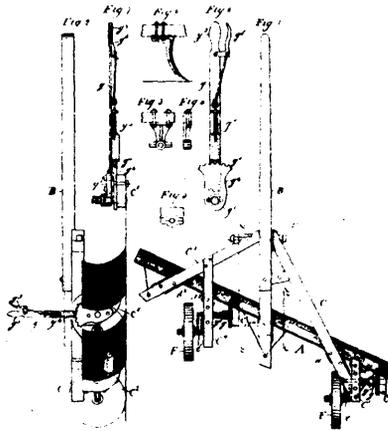
27372 Dalley's Railway Switch.



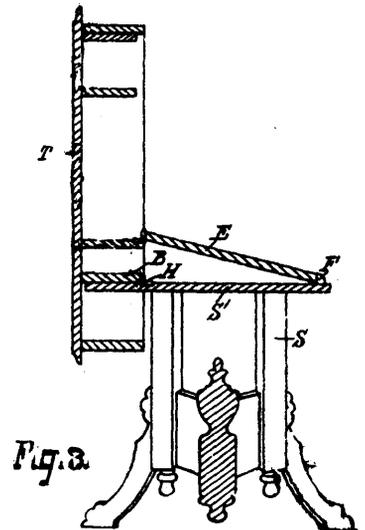
27373 Batty's Feed Cutting Machine.



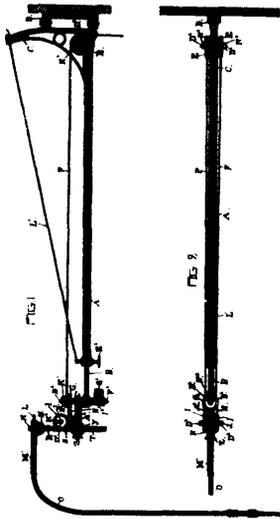
27374 Pittman's Wheel and Axle.



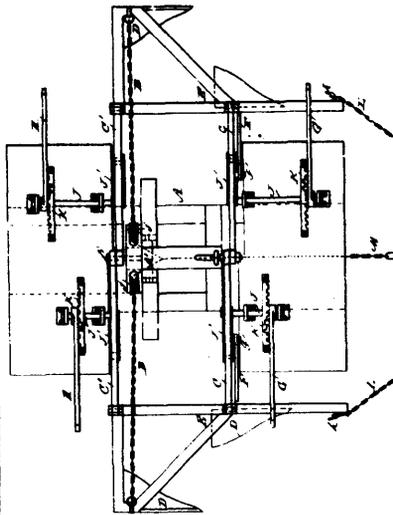
27375 Steele's Road Planer.



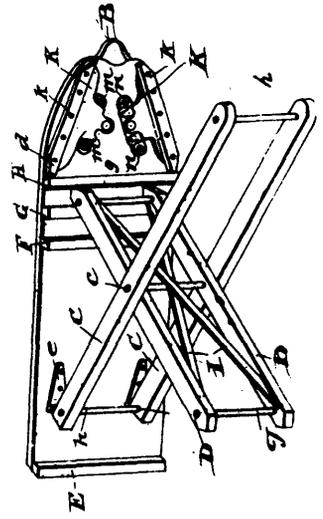
27376 Goring's Centre Table and Secretary.



27377 Knowles' Dental Engine.



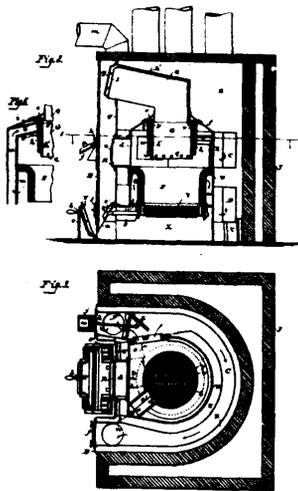
27378 Nearting's Railway Plough, etc.



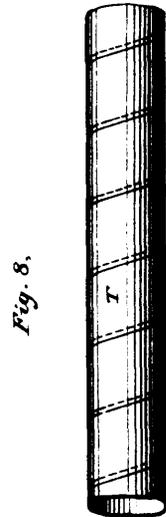
27379 Counter's Ironing Table.



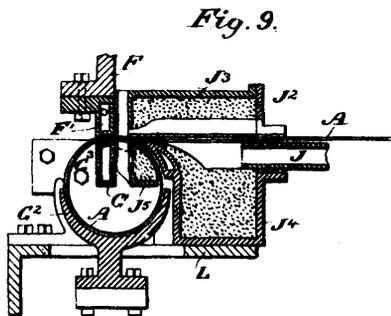
27380 Belches' Fire-Escape.



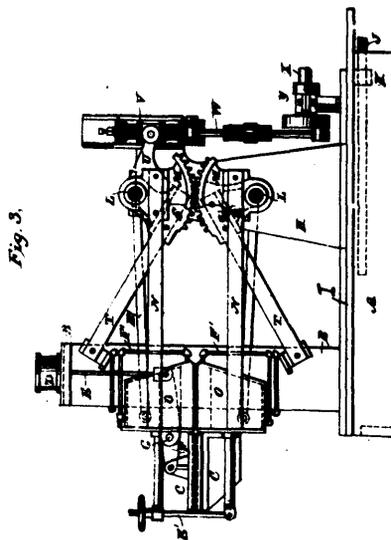
27381 Farquhar's Hot Air Furnace.



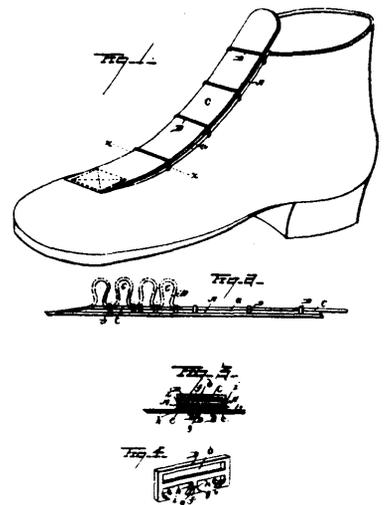
27382 Boot's Spirally Formed Metal Pipe.



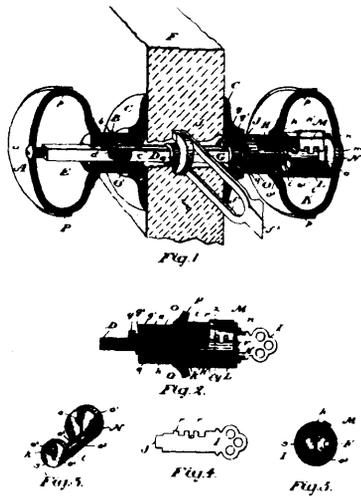
27383 Root's Spiral Pipe Machine.



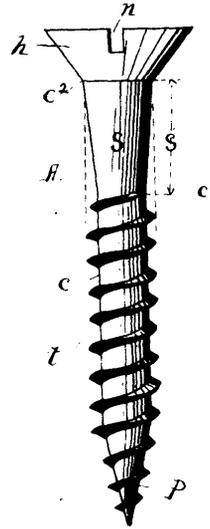
27384 Root's Welding Machine.



27385 Maxson's Shoe Fastening.



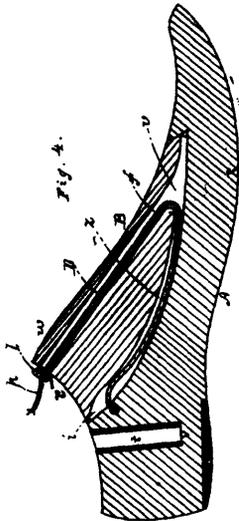
27386 Sharpe's Lock and Latch.



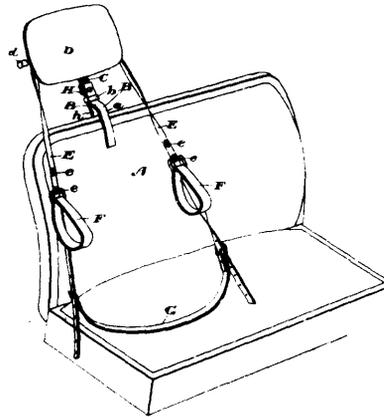
27387 Rogers' Wood Screw.



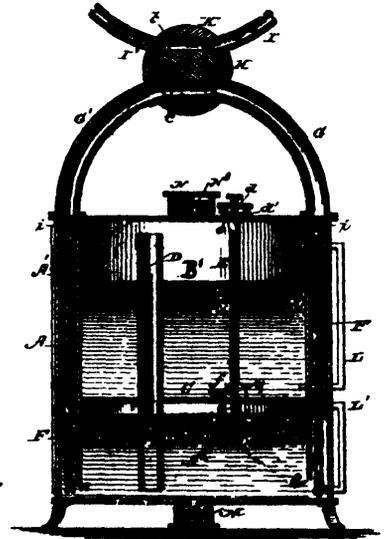
27388 Blum's Shoe.



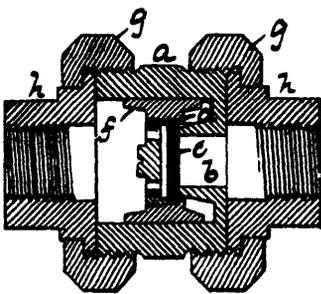
27389 Chase's Last.



27390 Campbell's Head Rest.



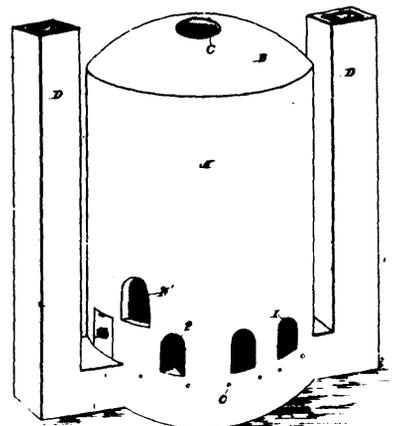
27391 Weil's Carburetor.



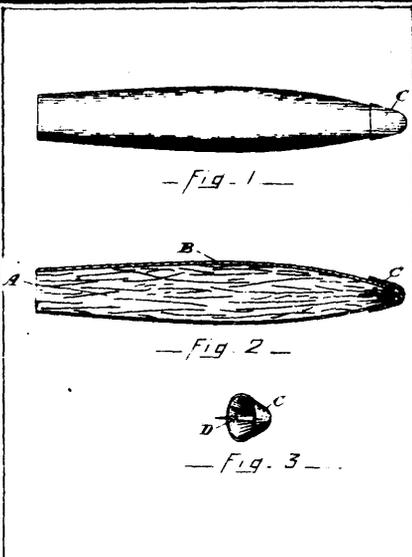
27392 Messinger's Check Valve.



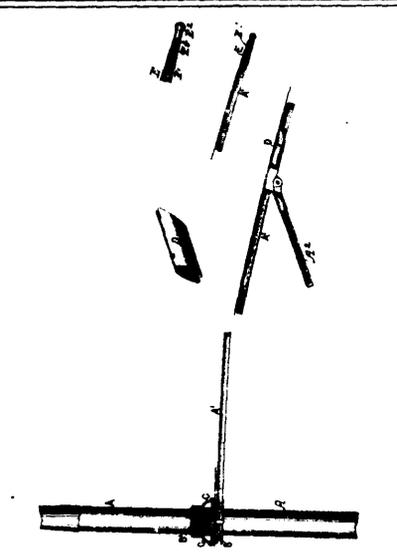
27393 Myers' Parasol and Umbrella Handle, etc.



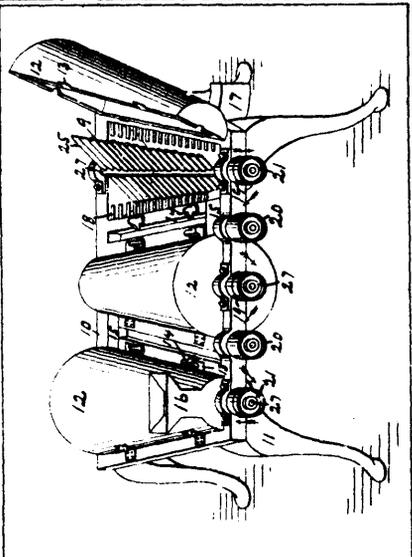
27394 Gearhard's Tile Kiln.



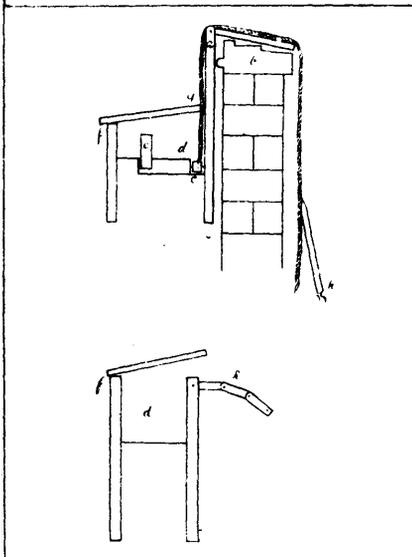
27404 Beaudoin's Cigar.



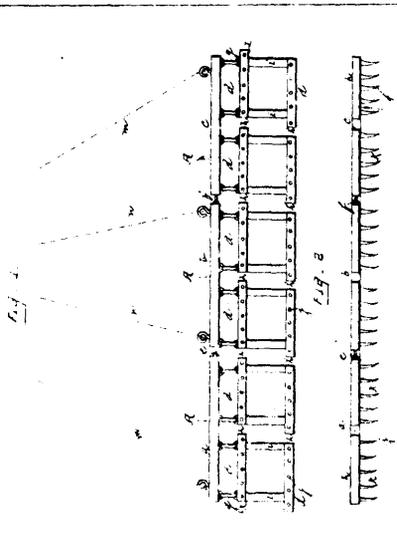
27405 Gaze's Umbrella and Parasol.



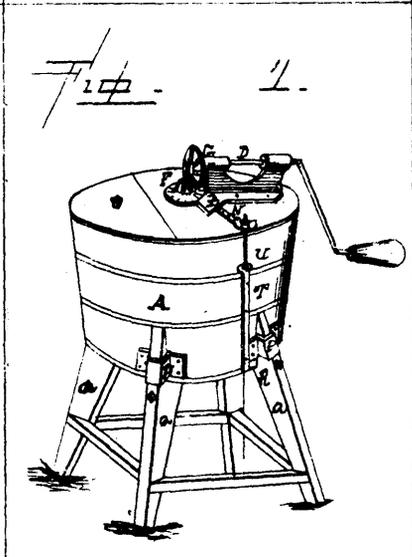
27406 Hillard & Goldsmith's Cotton Waste Picker.



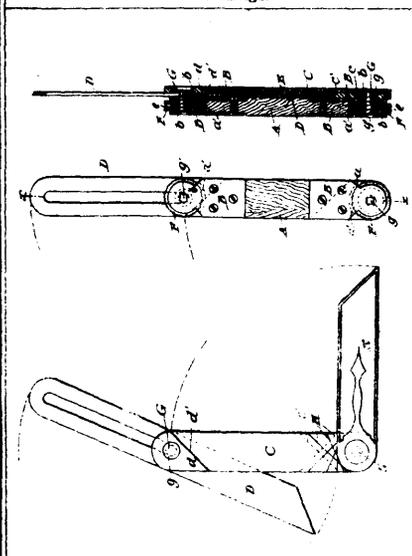
27407 Powell's Manner of Lowering Persons from Buildings.



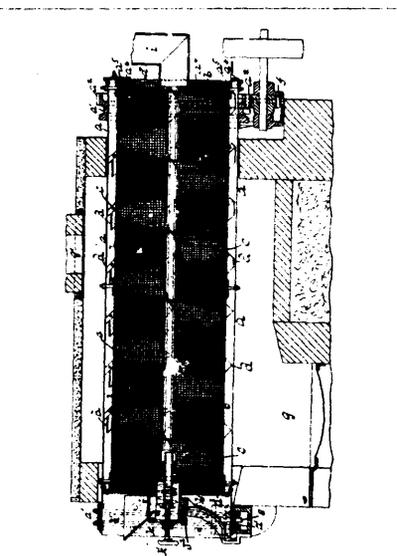
27408 Von Diest's Harrow.



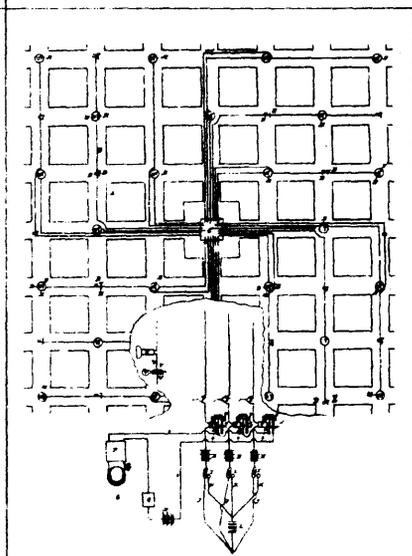
27409 Donelson's Rotary Churn.



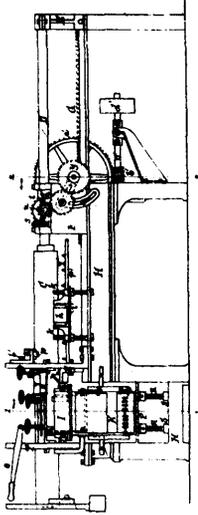
27410 Witter's Bevel.



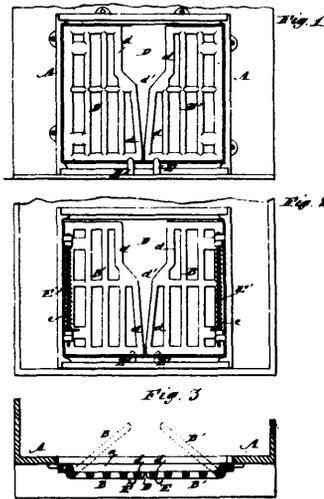
27411 Gillman & Spencer's Apparatus for Roasting Grain.



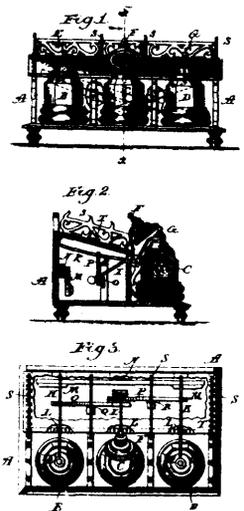
27412 Smith & Brewer's Apparatus for Signalling Policemen.



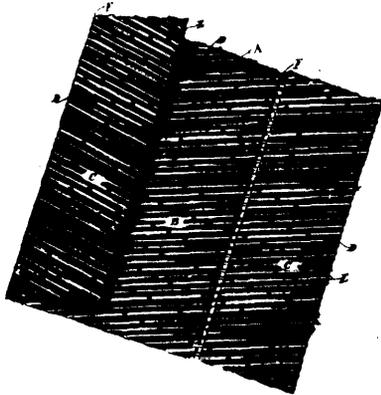
27413 Coas' Machine for Making Tubes.



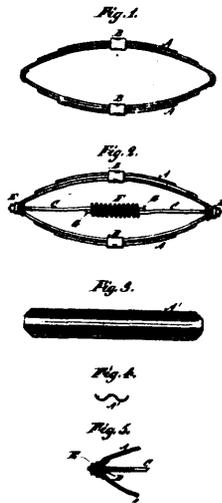
27414 Logan's Feed Rack.



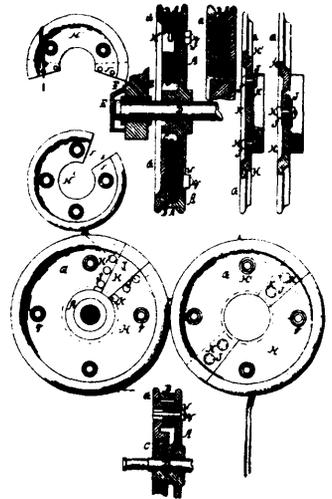
27415 Marshall's Receptacle for Ink, etc.



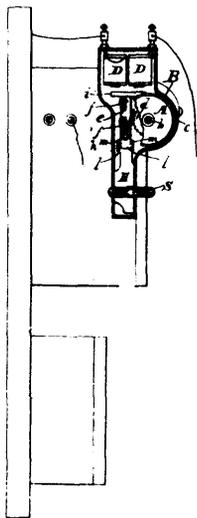
27416 Cole's Carpet Lining.



27417 Chase's Elliptic Spring.



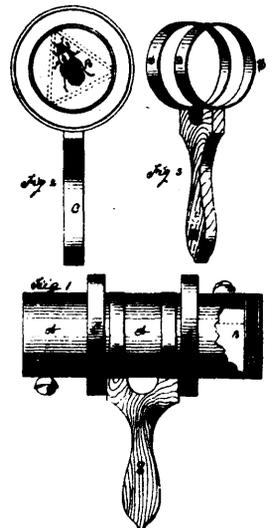
27418 Palmer's Railway Car Wheel.



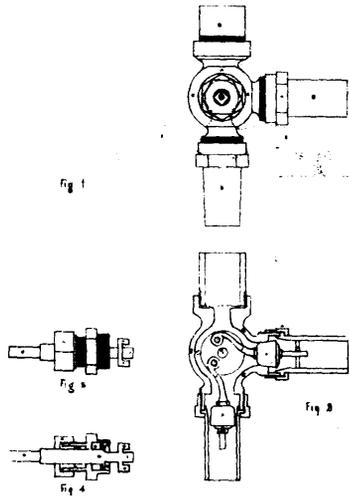
27419 Wittenberg's Telephone Register.



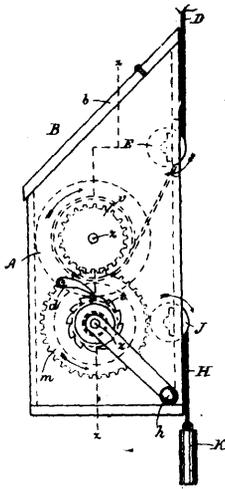
27420 Smith's Lamp Post and Signal.



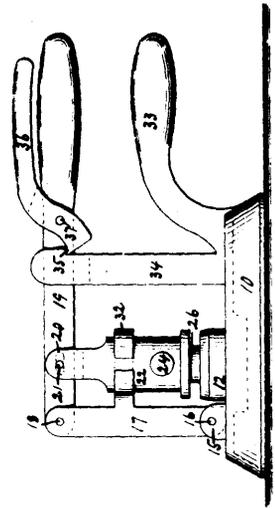
27421 Atkins' Kaleidoscope, etc.



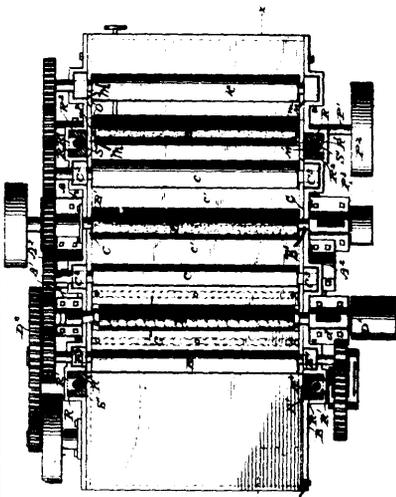
27422 Meadows' Water Closet Valve.



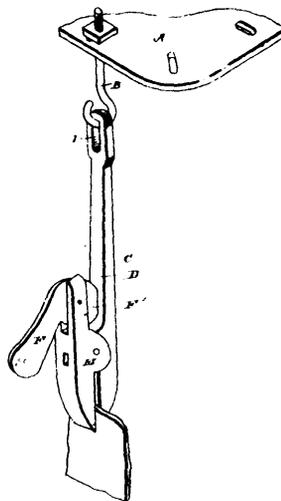
27423 Crowley & Kelley's Clothes Line Reel.



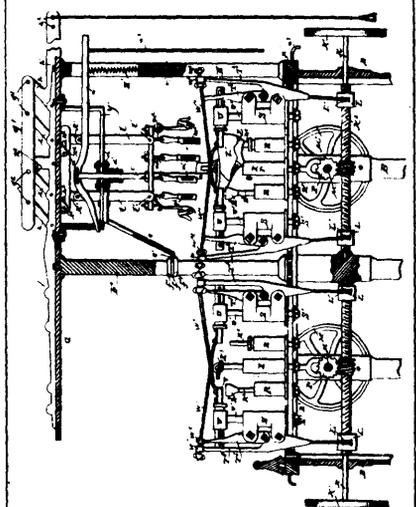
27424 Schott's Button Making Machine.



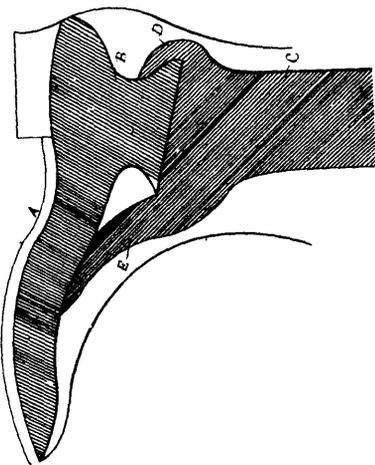
27425 Perry's Wood Polishing Machine.



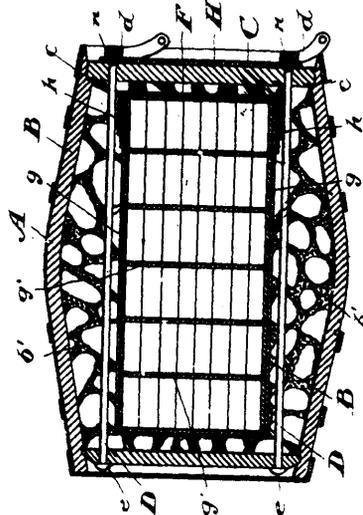
27426 Ellithorp's Clamp for Lasting Machine.



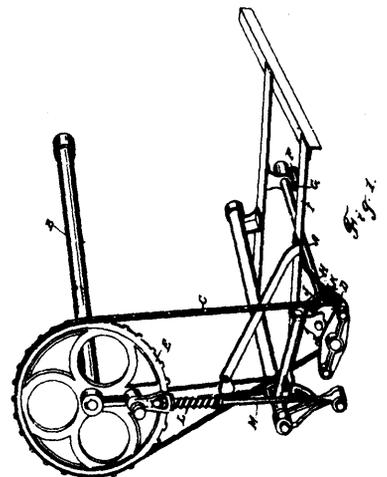
27427 Ellithorp's Lasting Machine.



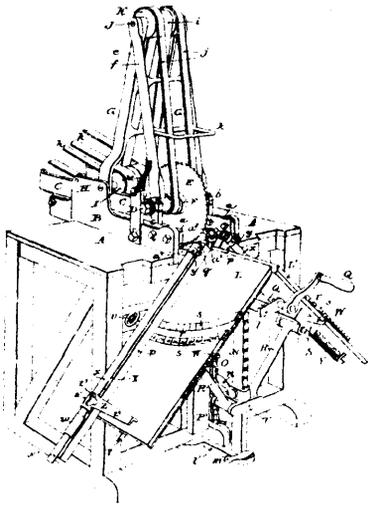
27428 Ellison's Last for Boots and Shoes.



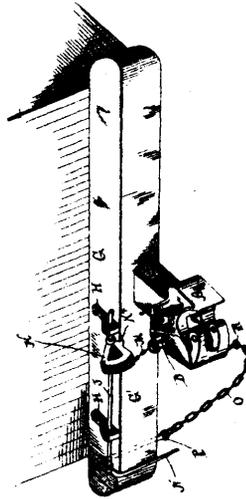
27429 Peppier's Device for Packing Butter, etc.



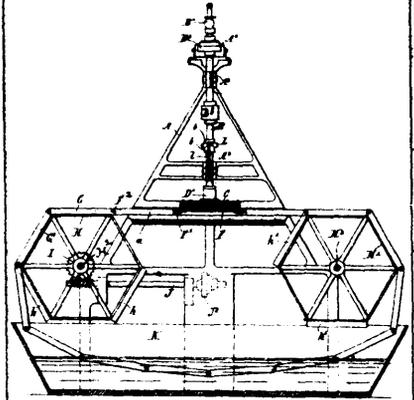
27430 McLachlan's Harvester.



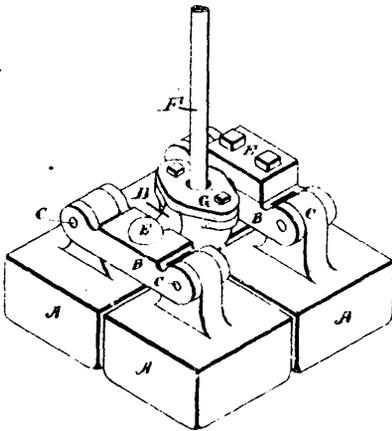
27431 Walker's Universal Joiner.



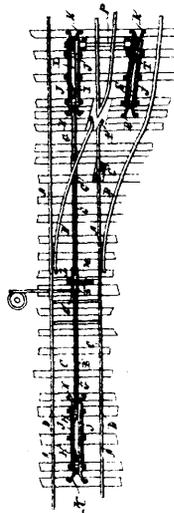
27432 Harrington's Car Coupler.



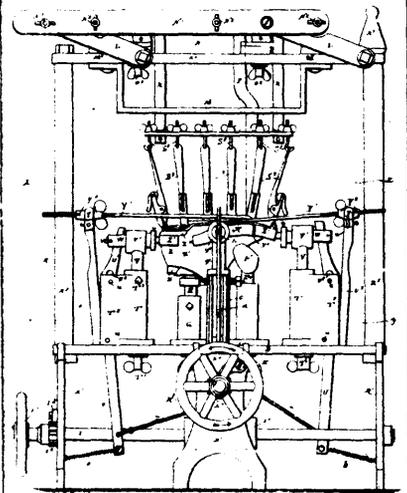
27433 Prichard's Surfacing Machine.



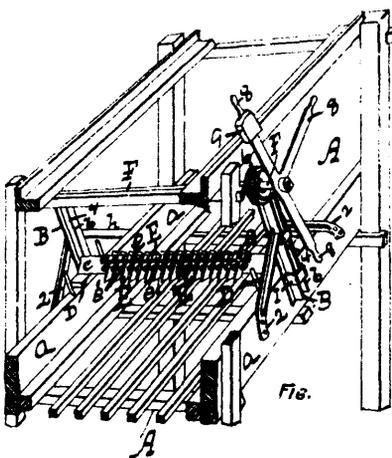
27434 Tabor's Metal Founding Machine.



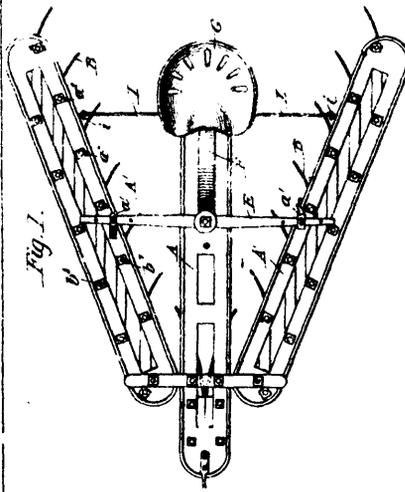
27435 Boyd's Railroad Switch.



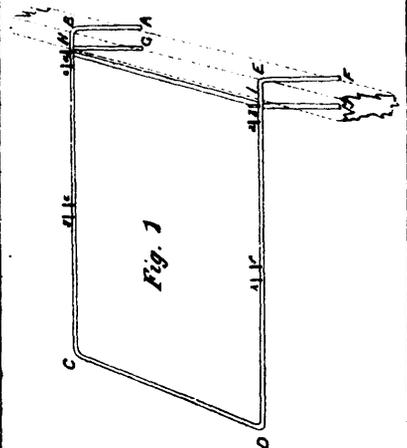
27436 Ellithorp's Lasting Machine.



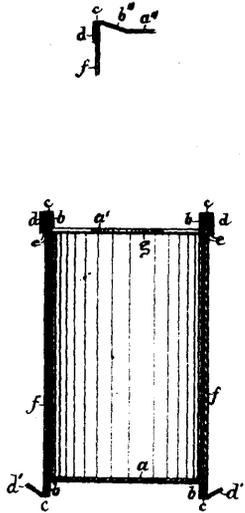
27437 Briggs' Apparatus for Planing Ice.



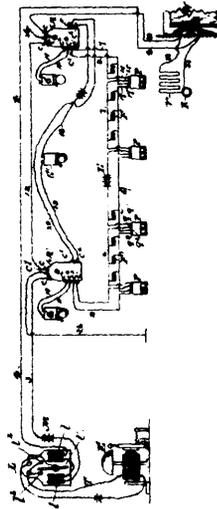
27438 Luken's Pulverizing Harrow.



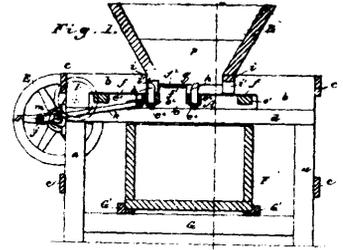
27439 Allen's Contrivance for Holding Open Mail Bags, etc.



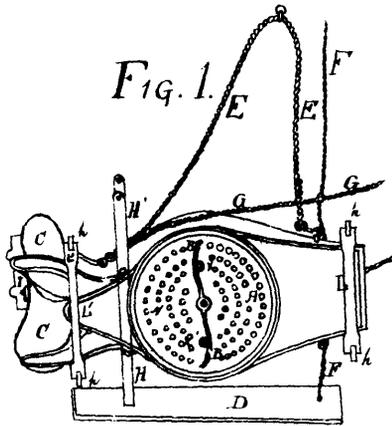
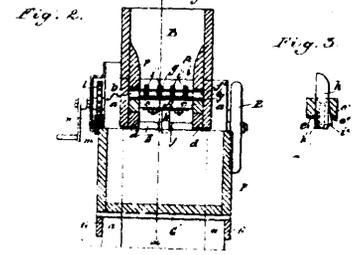
27440 Walsh & McDonald's Sheet Metal Can.



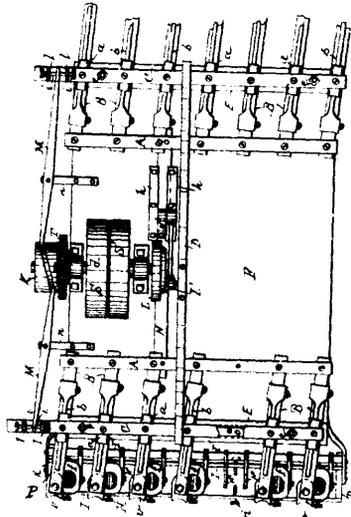
27441 Lyon's Fire and Burglar Alarm.



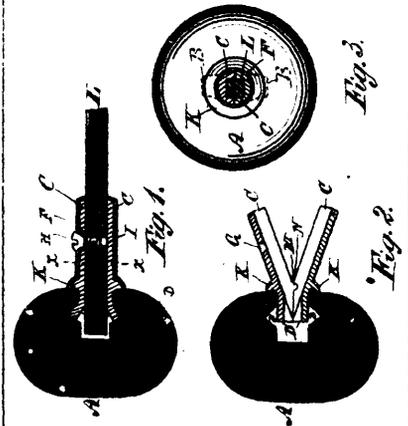
27442 Wetherby's Vegetable Cutter.



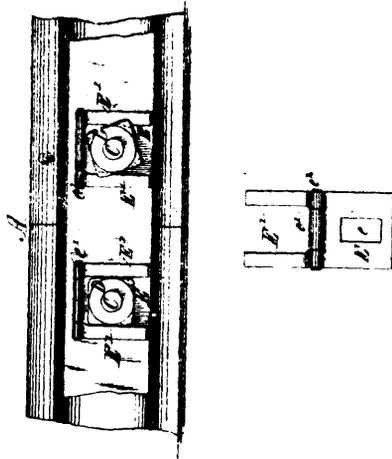
27444 Thorsons' Machine for Cleaning Vessels' Bottoms.



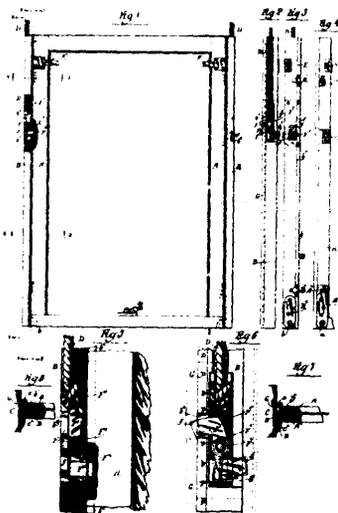
27445 Scoville & Owen's Machine for Grinding Valves.



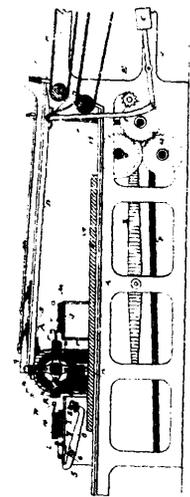
27446 Moore's Knob Attachment.



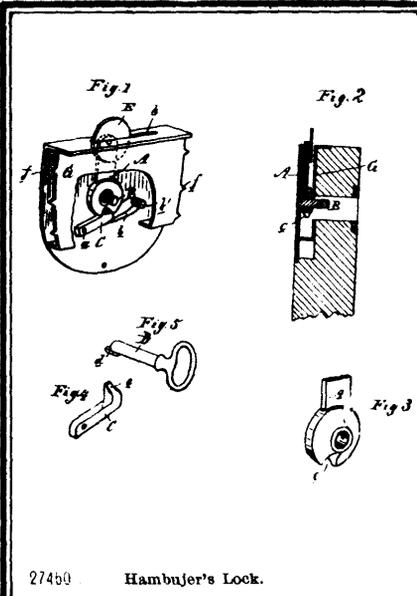
27447 Rolfs' Nut Lock.



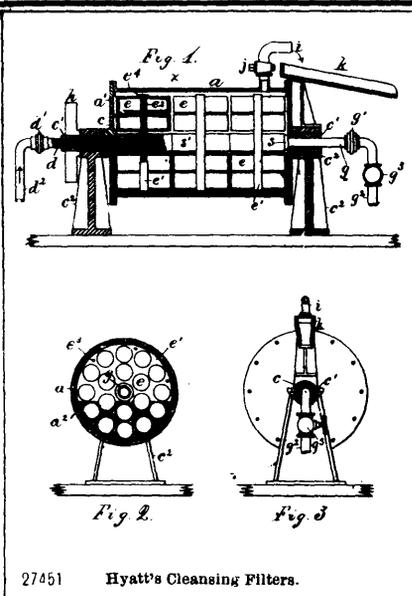
27448 Bradshaw's Window.



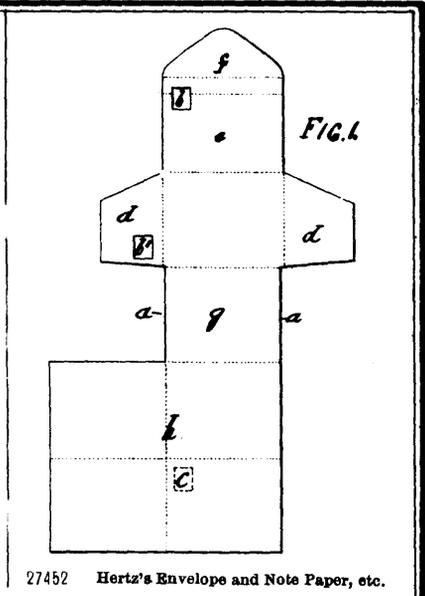
27449 Robertson's Lozenge Machine.



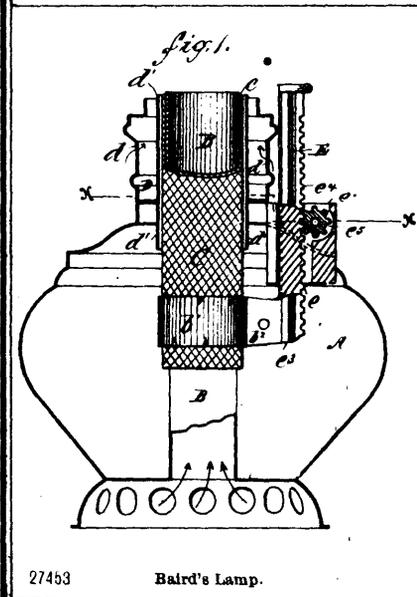
27460 Hambufer's Lock.



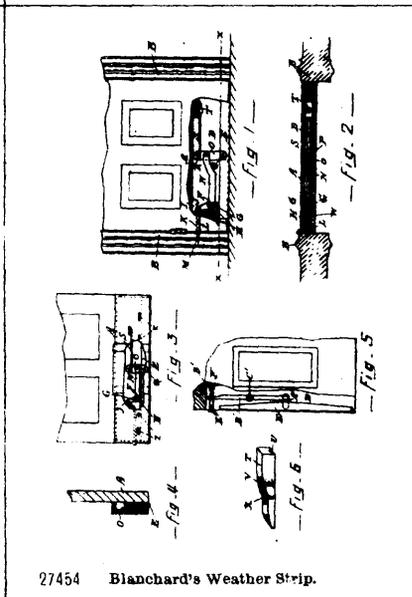
27451 Hyatt's Cleansing Filters.



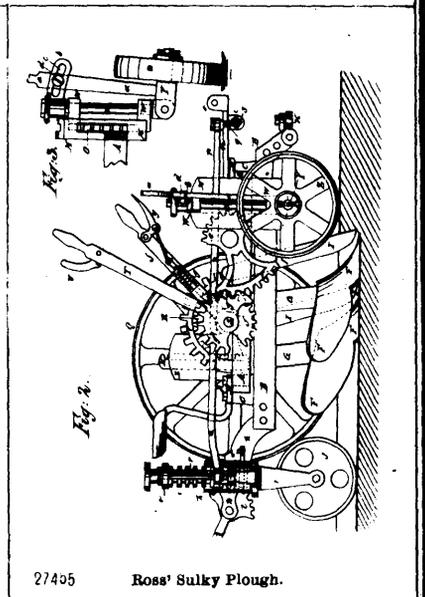
27452 Hertz's Envelope and Note Paper, etc.



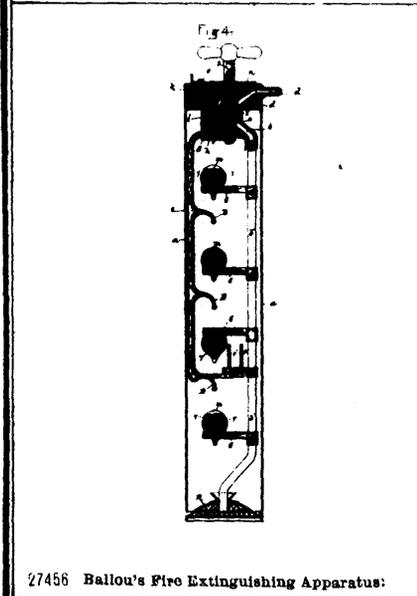
27453 Baird's Lamp.



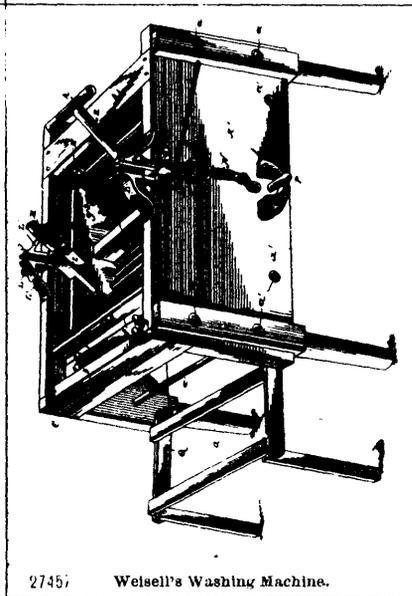
27454 Blanchard's Weather Strip.



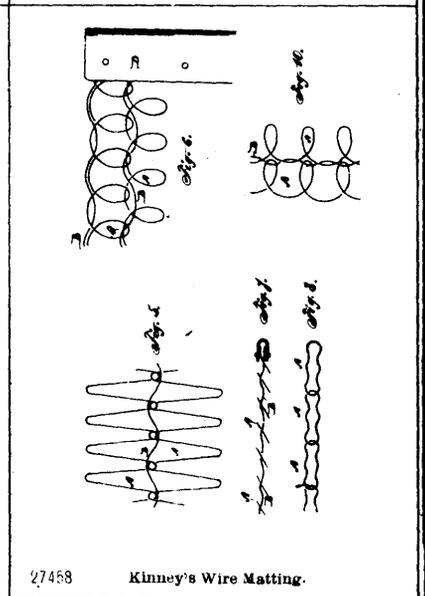
27455 Ross' Sulky Plough.



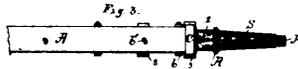
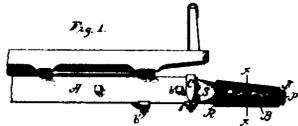
27456 Ballou's Fire Extinguishing Apparatus.



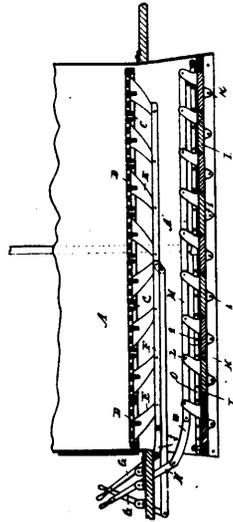
27457 Welsell's Washing Machine.



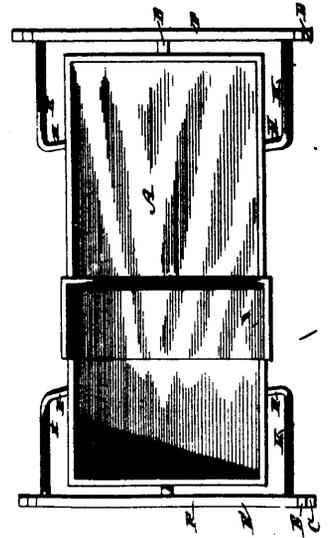
27458 Kinney's Wire Matting.



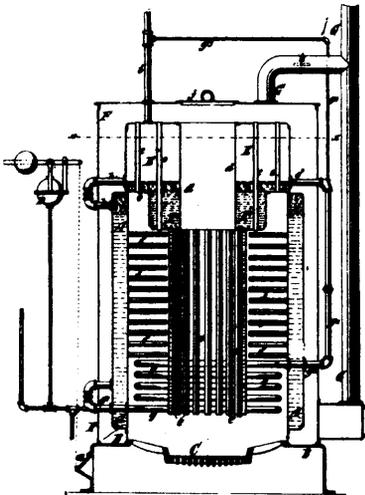
27459 Brosius' Vehicle Axle



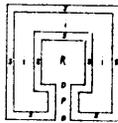
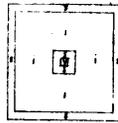
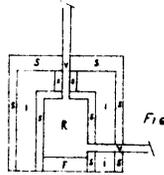
27460 Knaggs' Fire Box and Ash Pan.



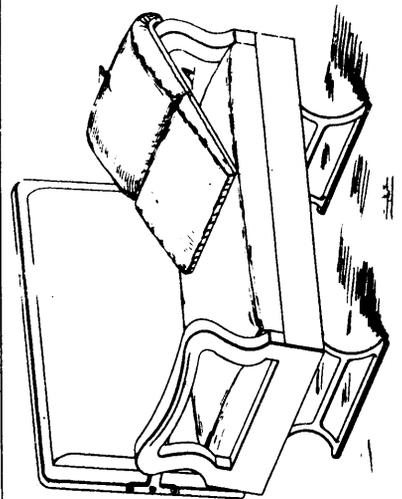
27461 Myer's Vehicle Spring.



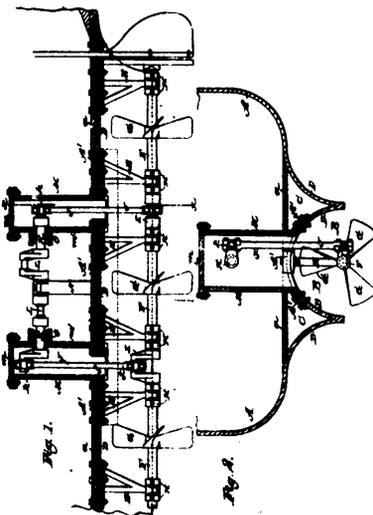
27462 Steele's Steam Boiler.



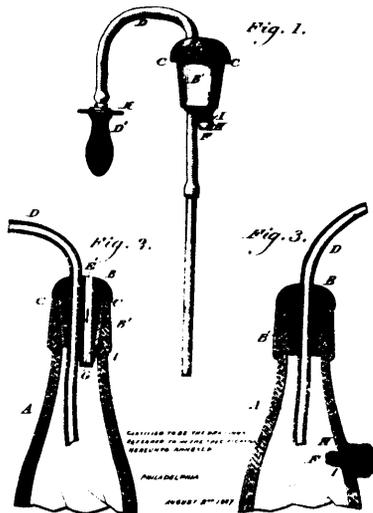
27463 Brosseau's Refrigerator.



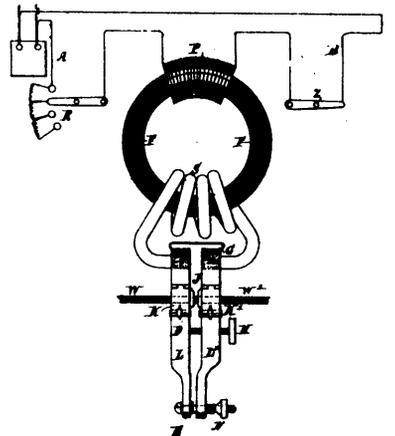
27464 Russack's Attachment for Car Seats.



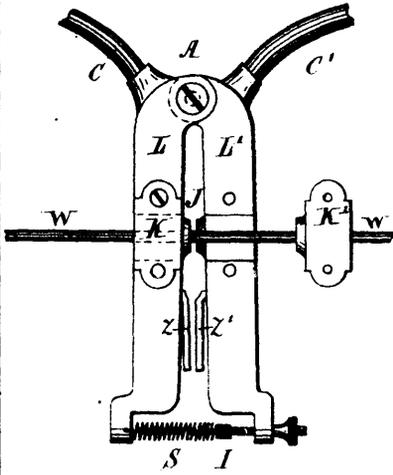
27466 Hanlen's Construction and Propulsion of Vessels.



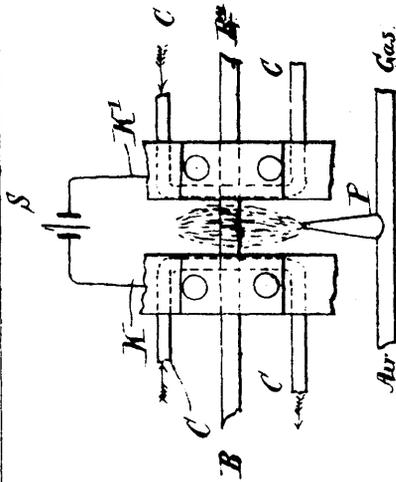
27467 Ware's Nursing Bottle.



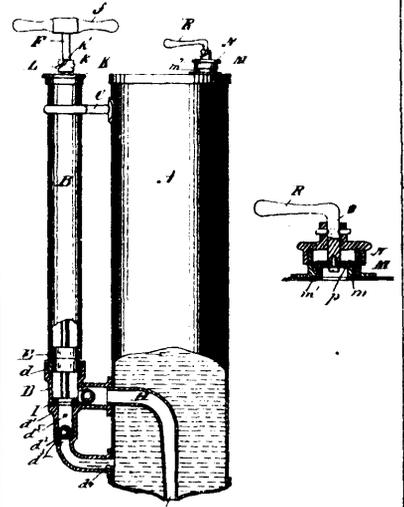
27468 Thomson's Art of Electric Welding.



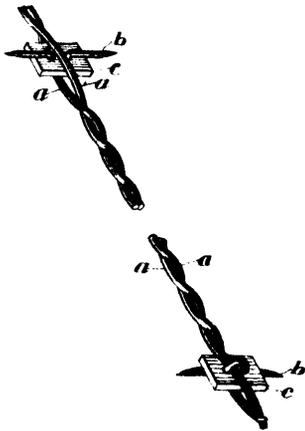
27469 Thomson's Apparatus for Electric Welding



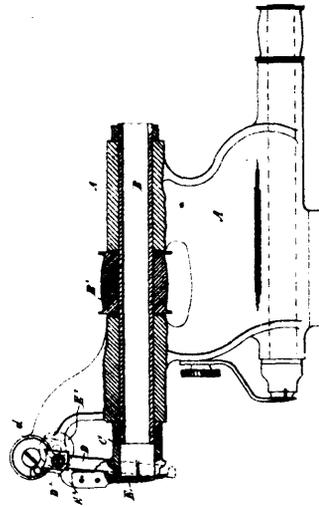
27470 Thomson's Apparatus for Electric Welding



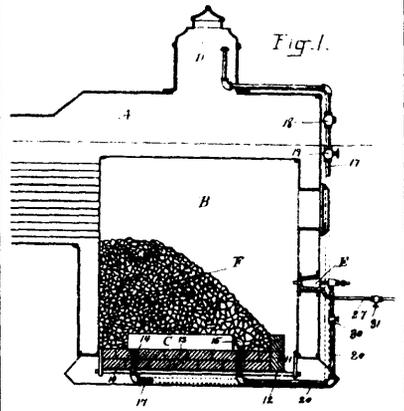
27471 Long's Hand Fire Extinguisher.



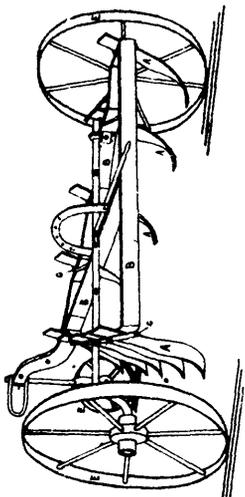
27472 Beers' Barbed Wire.



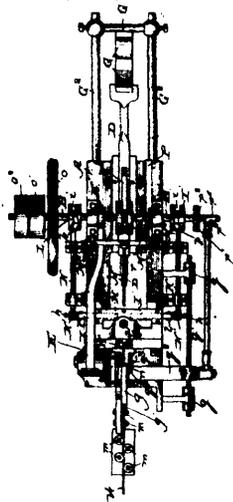
27473 Beauregard's Edge Trimming Machine.



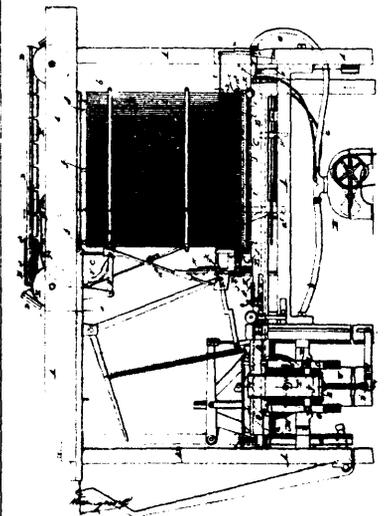
27475 Moody's Hydrocarbon Furnace.



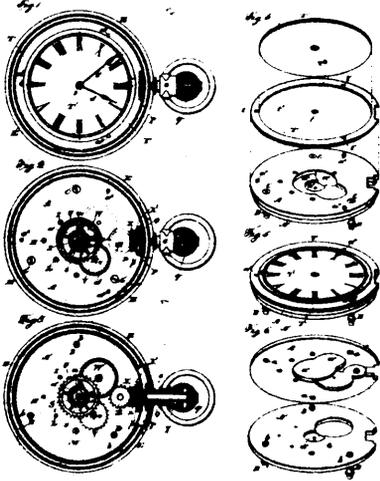
27476 Condon's Land Cultivator.



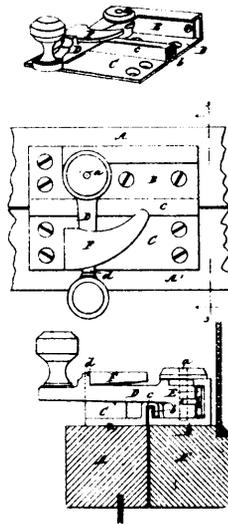
27477 Fontaine's Wire Nail Machine.



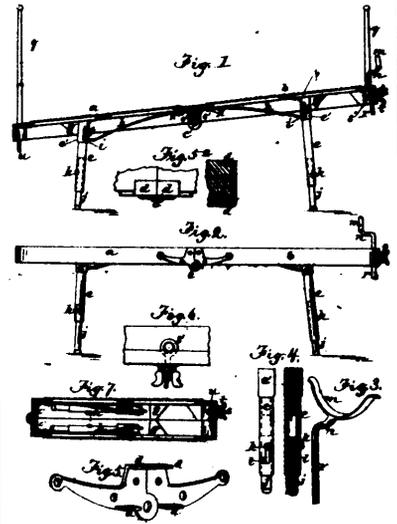
27478 Mergenthaler's Machine for Producing Type Bars.



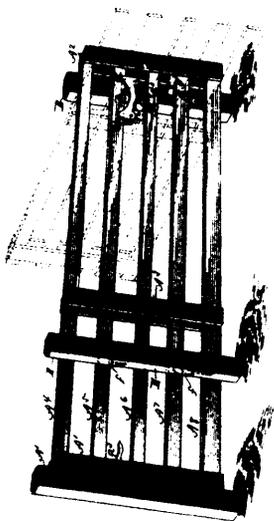
27479 Hart's Watch.



27480 Pardoe's Sash Fastener.



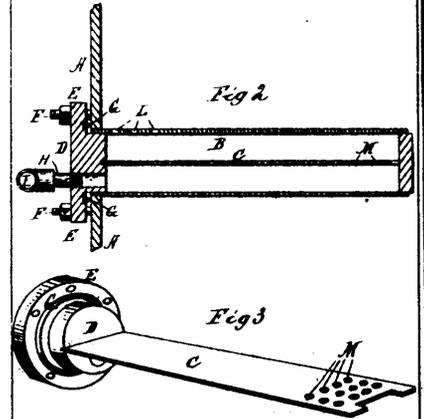
27481 Shaw's Laying Out and Embalming Table.



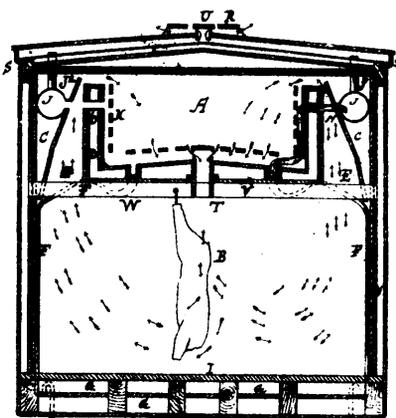
27482 Craig's Farm Gate.



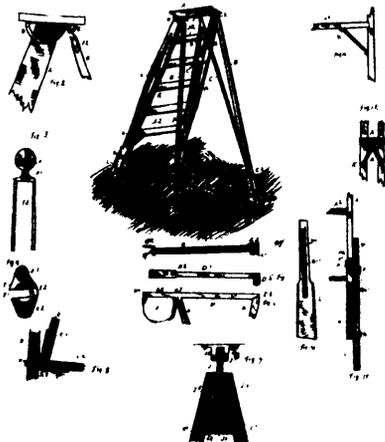
27488 Mergenthaler's Type Matrices, etc.



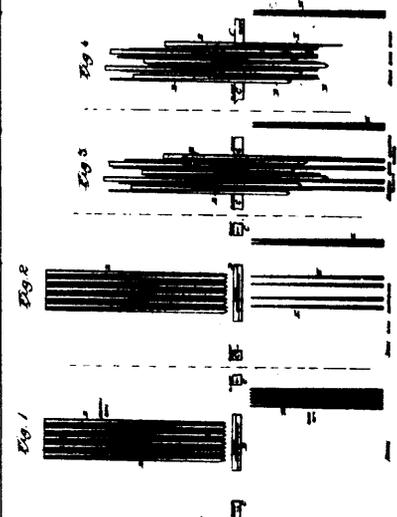
27484 Smith's Feed Water Heater and Purifier.



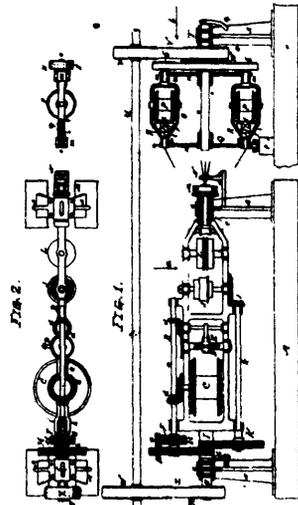
27485 Cook's Refrigerator Car.



27486 Wright's Step-Ladder.



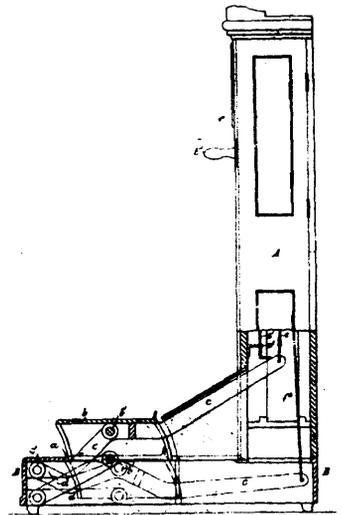
27487 Mergenthaler's Machine for Producing Type Bars, etc.



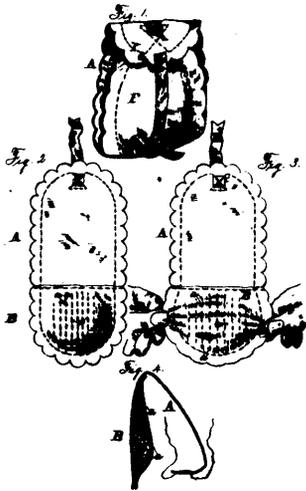
27488 Stone's Wire Rope Machine.



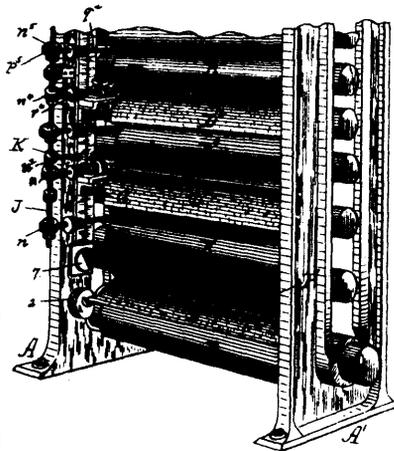
27489 Sparr's Veneering.



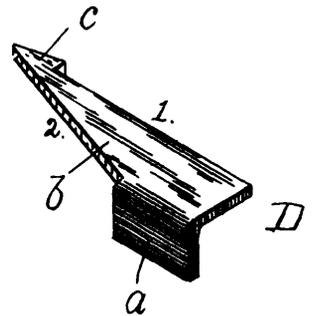
27490 Everitt's Completing Electric Circuits.



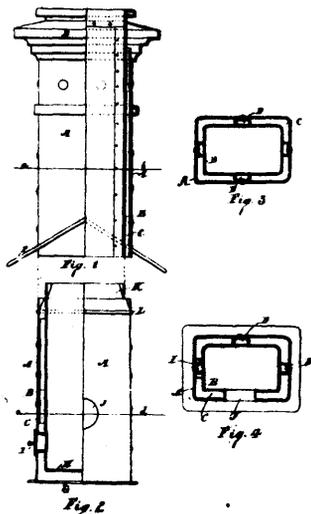
27491 Thorpe's Satchet.



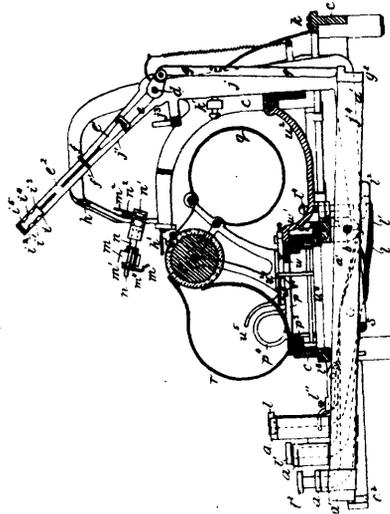
27492 Smith's Doctor for Paper Calendar Rolls



27493 Chandler's Glazier's Point.

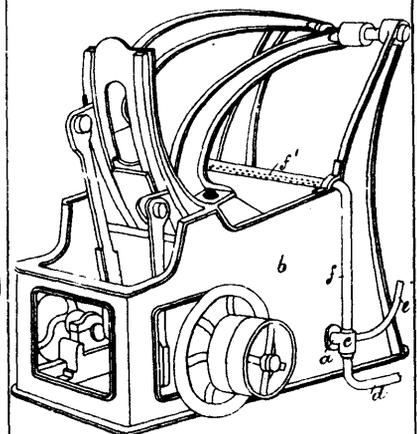


27494 Martin's Chimney.

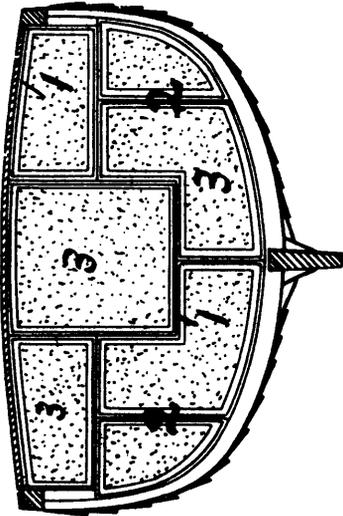


27495 Fitch's Type Writing Machine.

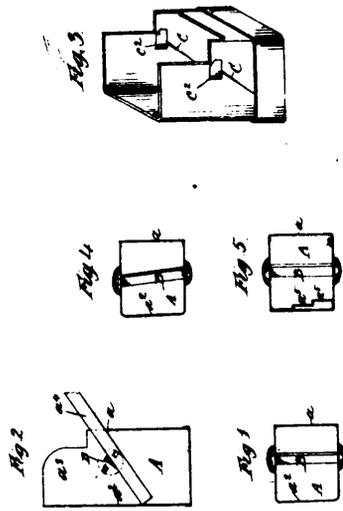
FIG. 1.



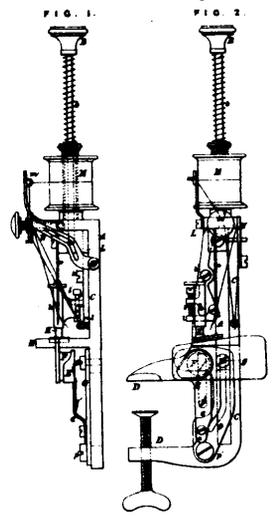
27496 Cheotham's Manufacture of Hats, Caps, etc.



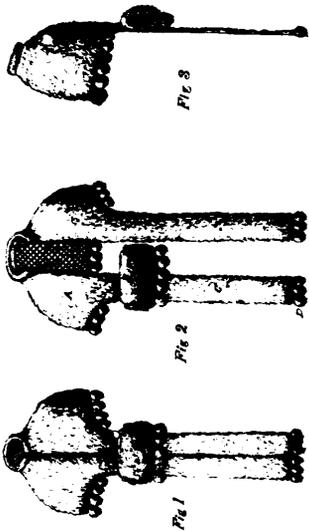
27497 Brewster's Means of Imparting Buoyancy to Life Boats, etc.



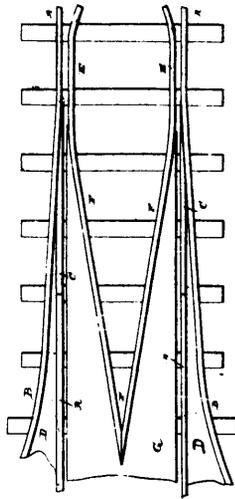
27498 Clarke's Apparatus for Sharpening Pencils.



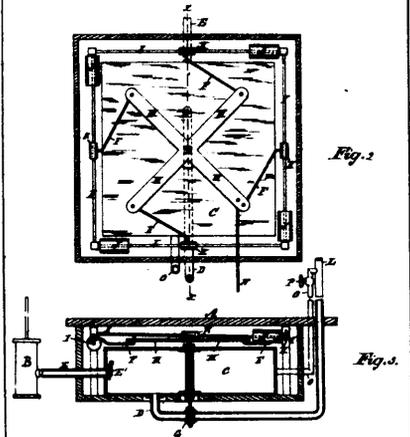
27499 Isaac's Sewing Machine.



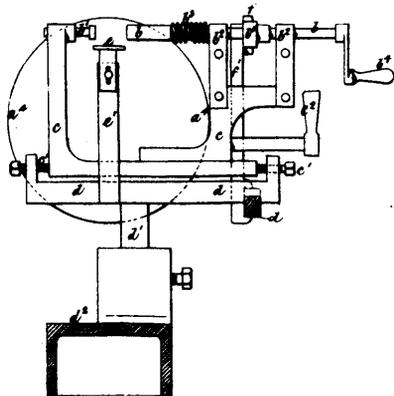
27500 Fibich's Fur Cape.



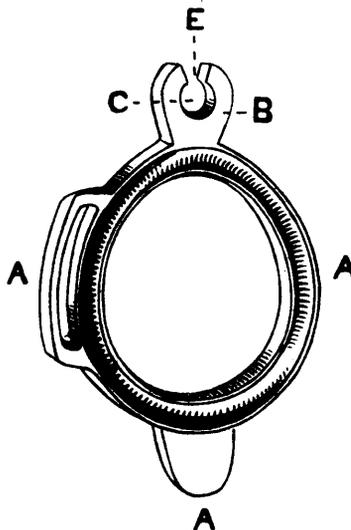
27501 Dwight's Car Replacer.



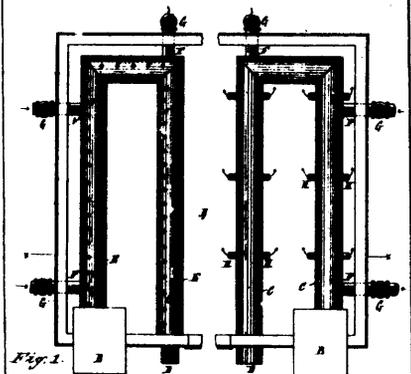
27502 Berry's Pneumatic Car Lamp Extinguisher



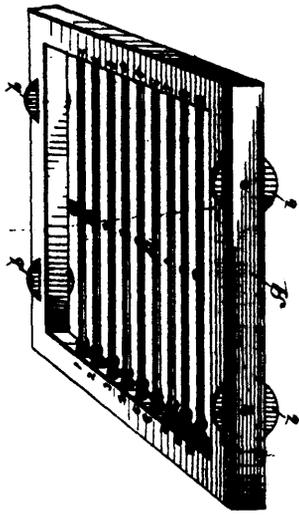
27503 Lowman & Howard's Manufacture of Corks, etc.



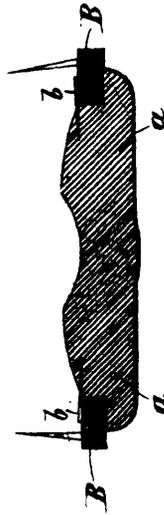
27504 Burrage's Thill-Holder.



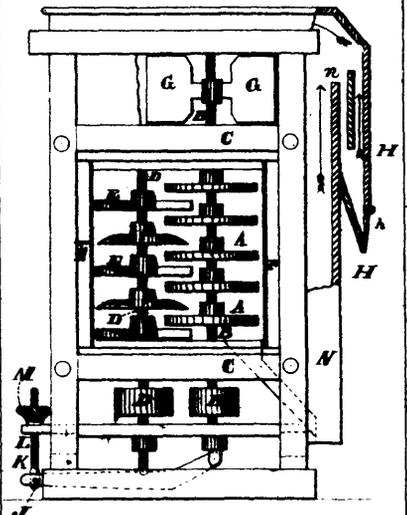
27505 Oakman's Drying and Curing Apparatus.



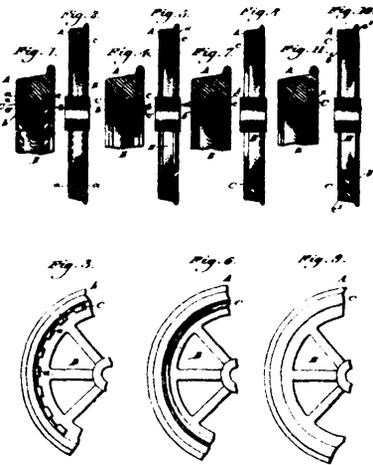
27506 Carmical's Calculator.



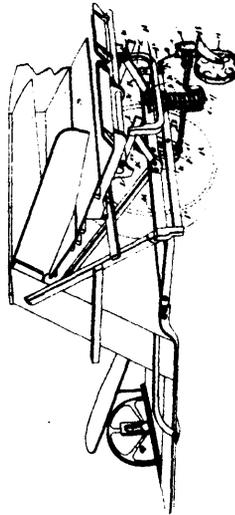
27507 Body & Winton's Horse Shoe.



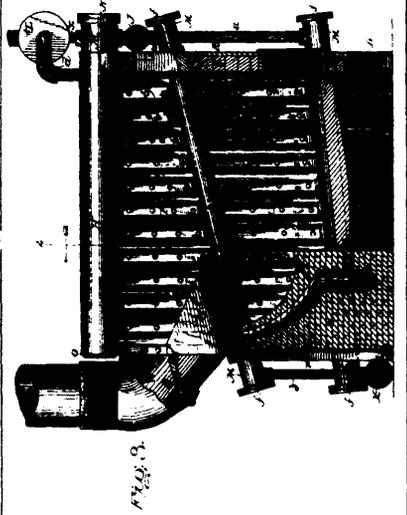
27508 Yates' Grain Scourer.



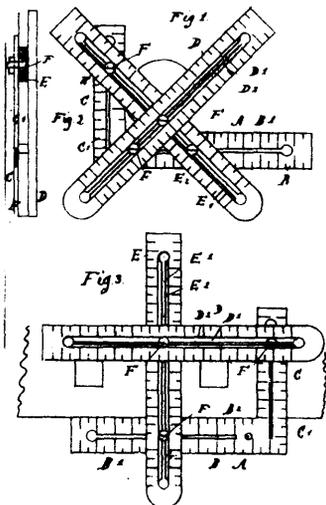
27509 Cloud's Locomotive and Car Wheel.



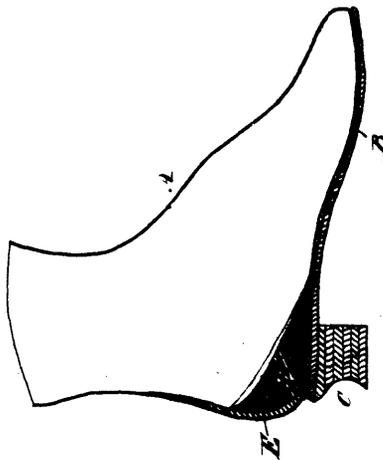
27510 Russell's Harvester.



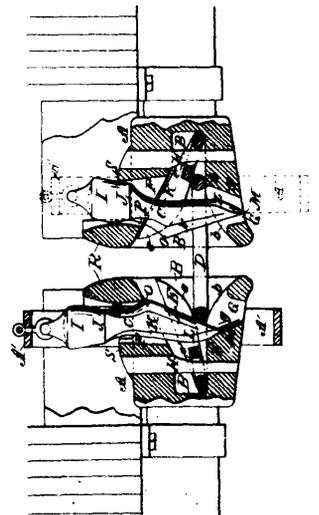
27511 Chase's Steam Generator.



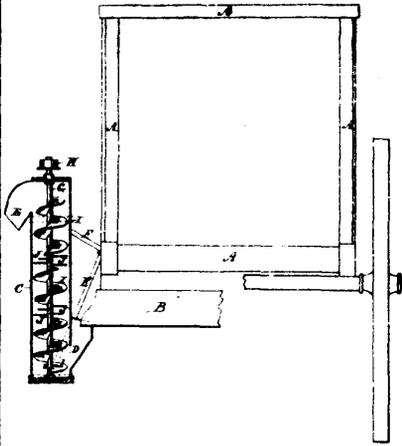
27512 Kliff's Measuring Instrument.



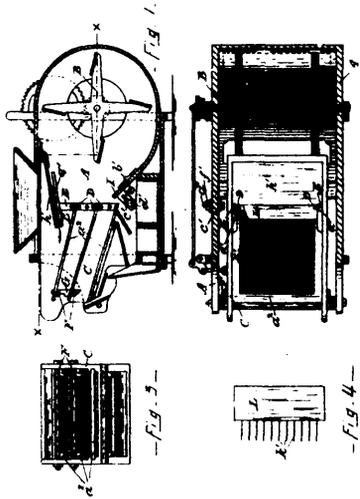
27513 O'Brien's Boot and Shoe.



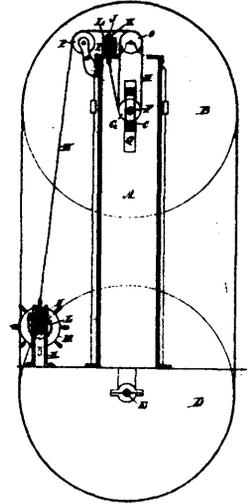
27514 Wilson & Wall's Car-Coupling.



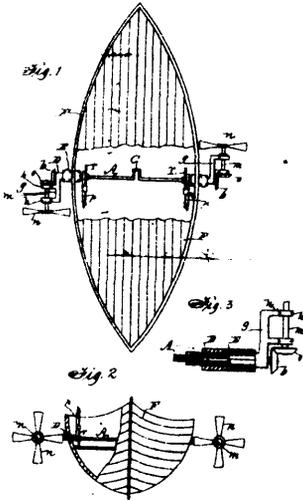
27515 Macpherson's Thrasher and Separator



27516 Lambert's Fanning Mill.



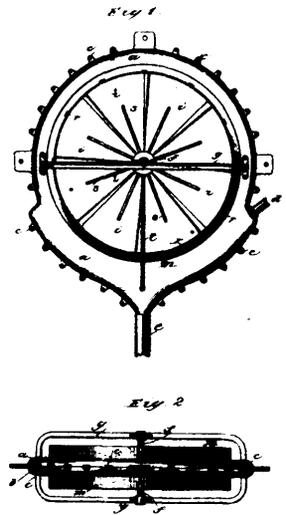
27517 Gillie's Band Saw Mill.



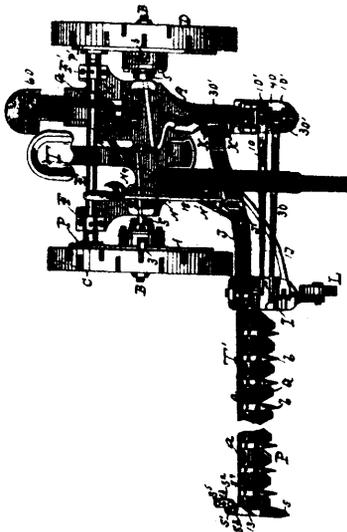
27518 Baker's Mechanism for Propelling Vessels



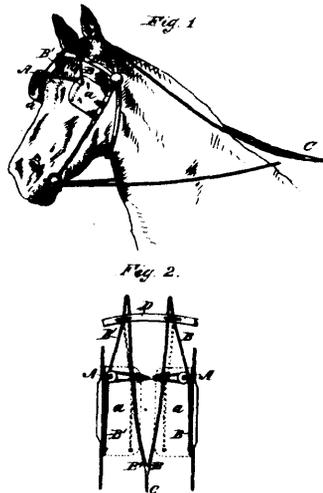
27519 Bergeron's Clothes Pin.



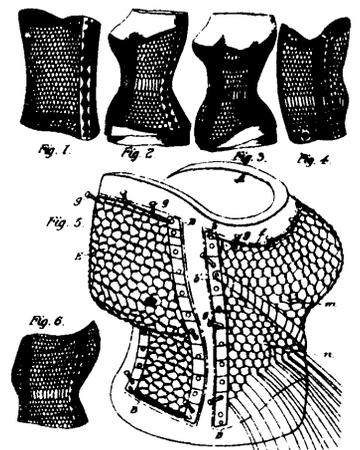
27520 Hope's Ventilating Apparatus.



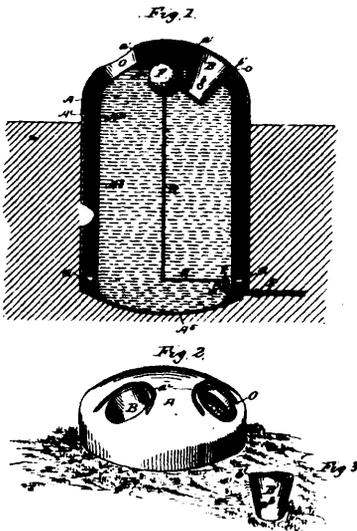
27521 Hathaway's Reaper and Mower.



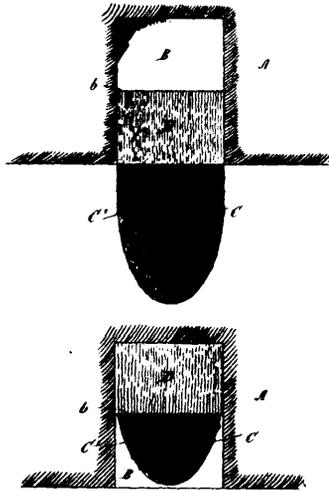
27522 Adams' Attachment for Bridles.



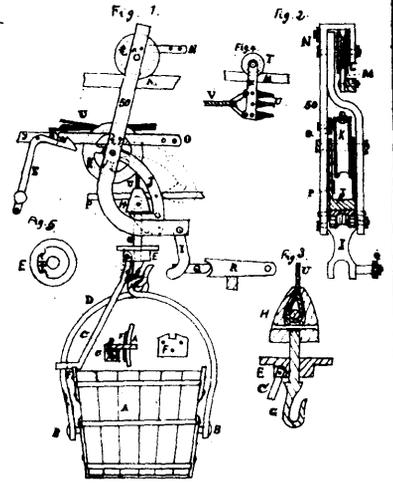
27523 Roberts' Corset.



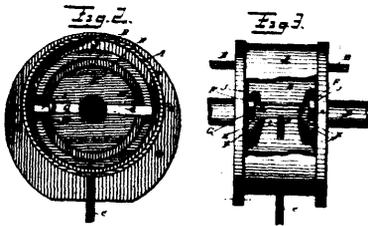
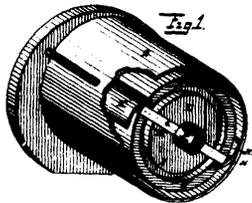
27524 Kouns' Water Tube.



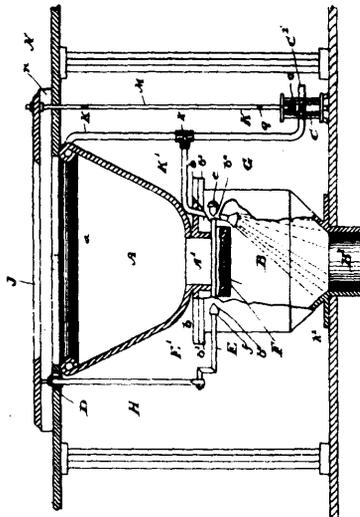
27525 Brahadi's Head Gear



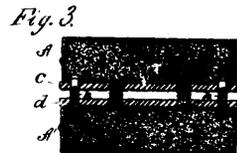
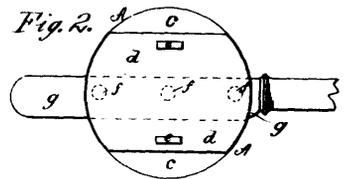
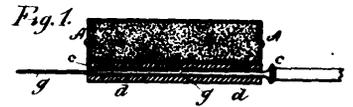
27526 Ryan's Apparatus for Hoisting and Moving Earth.



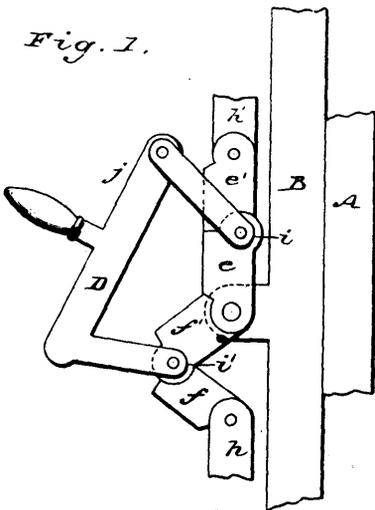
27527 Hills' Steam Engine.



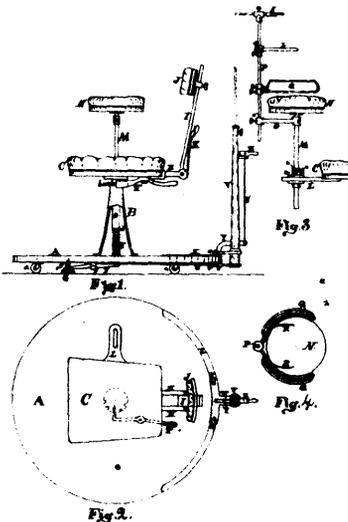
27528 McAndrews' Water Closet.



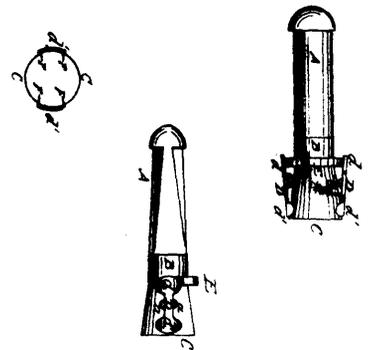
27529 Appleton's Powder Receptacle, etc.



27530 Isbell's Mechanical Movement.



57531 EnDean's Photographer's Chair.



27532 Noble's Cigar Holder.