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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. 24,848. Confectioner's Melting Bath. (*Bain de Confiseur.*)

Adolph Musser and Leo M. Geismar, Detroit, Mich., U. S., 3rd September, 1886; 5 years.

Claim.—1st. The combination, with the vessel B having steam-pipe and coil and flange c, as described, of the vertically-movable porcelain-lined vessel C with its round bottom, and adapted to be raised or kept at a varying height as to water-line by means of a reducer on the flange c, substantially as and for the purposes set forth. 2nd. The combination, with the vessel B having the flange c, and provided with steam-pipe D and coil E, of the independent removable porcelain-lined vessel C having flange f formed thereon, to rest on the flange c of the vessel B, substantially as described. 3rd. The combination, with the tripod A having rim a, of the vessel B having flange b and inwardly-projecting flange c, steam-pipe D, coil E, and the independent vessel C, provided with flange f, and handle F, substantially as shown and described.

No. 24,849. Draft Regulator for Fire Places, etc. (*Régulateur de Tirage pour Foyers, etc.*)

William Hunter and Thomas J. Shackelford, San Francisco, Cal., U. S., 3rd September, 1886; 5 years.

Claim.—In a fire-place or grate, the inclined plate fixed above and behind the fire, within the chimney or flue-opening, and having the vertical slots, as shown, in combination with a secondary plate sliding transversely between guides upon the back of the first plate, and having slots made of different widths, or with offsets, between the top and bottom, said slots aligning themselves with those in the first plate, whereby the position of the draft-opening may be regulated, substantially as herein described.

No. 24,850. Measuring Device and Register for Fence Material. (*Mesureur-Compteur de Matériel à Clôture.*)

John B. Thies, Collins Wight and Harry C. Wight, Dayton, Ohio, U. S., 3rd September, 1886; 5 years.

Claim.—In a device for measuring wire and picket fencing, the combination of an arm having a horizontal slot in its outer portion, and pivoted to swing in a horizontal plane, a pulley journaled near the roll to be measured, a cord or chain secured to the arm and passing over the pulley, and provided with a weight at its outer end, a spur disk journaled in the outer end of the slot in the arm, and having an upwardly-projecting stud upon its upper face, a cogged disk journaled upon the downwardly-facing side of the slot in the arm, and engaged by the stud upon the face of the spur disk, and a hammer having a bevelled head engaging the cogs of the disk, and secured to the free end of a spring arm having a coil near its secured end, and secured near the outer end of the slotted arm, as and for the purpose shown and set forth.

No. 24,851. Fence-Making Machine. (*Machine à Faire les Clôtures.*)

John B. Thies, Collins Wight and Harry C. Wight, Dayton, Ohio, U. S., 3rd September, 1886; 5 years.

Claim.—1st. In a fence-making machine, the combination, with a gang of wire-twisters, of a pair of bevelled bars, one of which is yielding, facing the ends of the twisters, with their bevelled sides, and means for forcing the pickets between the said yielding bars, as and for the purpose shown and set forth. 2nd. In a fence-making machine, the combination, with a gang of wire-twisters, of two bars, one of which is yielding, both having their inner edges bevelled, and having the bevelled sides facing the delivery ends of the twisters, and reciprocating arms having slotted ends sliding in notches in the facing edges of the bevelled bars, as and for the purpose shown and set forth. 3rd. In a fence-making machine, the combination, with a gang of wire-twisters, of a rigid bar having its inner edge bevelled and faced with a metallic strip, a bar having its edge facing the bevelled edge of the rigid bar, bevelled and faced with a metallic strip and having, at the opposite edge, laterally-projecting rods provided with coil springs and sliding in bearings, arms, having their longitudinal slotted ends sliding in notches in the bevelled edges of the bars, and means for simultaneously reciprocating the said arms, as and for the purpose shown and set forth. 4th. In a fence-making machine, the combination of a rectangular upright frame having a vertical gang of wire-twisters, two transverse castings having flanges and longitudinal slots, and adjustably secured by set screws on the facing sides of the top and bottom piece of the frame, a bar secured to one end of the flanges of the casting and having its inner edge bevelled and faced with metal, a bar secured at its ends in the other ends of the castings, and having transverse perforations or bearings, a bar having its ends sliding against the castings and against their flanges, and having the edge facing the bevelled edge of the rigid bar bevelled and faced with metal, and provided with laterally-projecting rods sliding in the bearings in the perforated rigid bar, and having spring coils around them and bearing against the bars, and means for forcing the pickets between the bevelled edges of the bars, the said edges facing the delivery ends of the twisters, as and for the purpose shown and set forth. 5th. In a fence-making machine, the combination of a gang of wire-twisters, of vertical rock-shafts journaled to the rear of the twisters and having arms projecting from it, a pair of yielding bars having their bevelled facing edges formed with notches and placed registering with the delivery ends of the twisters, and picket-forcing arms pivoted at their rear ends to the arms upon the rock shaft, and having their forward ends slotted longitudinally and sliding in the notches in the bevelled bars, as and for the purpose shown and set forth. 6th. In a fence-making machine, the combination of a vertical rock shaft operating the forcing arms and having a crank at its upper end, a reel shaft having a ratchet wheel upon its end, and a pawl engaging the said wheel, a crank pivoted upon the upper end of the reel shaft and having a spring pawl engaging the reel at its outer end, and a pitman composed of two parts having an interposed spring and pivoted to the two cranks, as and for the purpose shown and set forth. 7th. In a fence-making machine, the combination of the vertical rock shaft operating the forcing arms and having the crank at its upper end, the reel-operating crank having a spring pawl at its end, the ratchet wheel upon the reel engaged by the pawl, the parallel rods having the bar pivoted to the rock shaft crank, and having its ends connected by the perforated yoke, the rod pivoted to the loose crank and sliding in the yoke having a cross-head upon its end, sliding with its notched ends upon the parallel rods, and the spring coiled around the rod and bearing against the yoke, and against the cross-head, as and for the purpose shown and set forth. 8th. In a fence-making machine, the combination of the reel shaft, the bracket hinged to swing upward upon the end of the top piece of the frame, the short shaft journaled in the outer end of the bracket, and formed with the socket at its lower end, receiving the upper end of the reel shaft, the ratchet wheel upon the short shaft, and the rocking arm or crank upon the end of the short shaft having the spring pawl engaging the ratchet wheel, as and for the purpose shown and set forth.

No. 24,852. Automatic Electric Liquid Level Indicator and Controller. (*Indicateur-Régulateur Electrique Automatique du Niveau d'Eau.*)

John J. Ghogan, Newark, N.J., U. S., 3rd September, 1886; 5 years.

Claim.—1st. The combination of a float D provided with magnetic material with a polarized needle E, which is deflected from a normal

position by the movement of said float, substantially as described. 2nd. The combination of a float D, provided with magnetic material, with a magnetic circuit-controlling device, substantially as described. 3rd. The combination of a float D with an automatic circuit controlling device, which consists of a pivoted magnetic bar E, provided with circuit-closing contact points F and a permanent magnet, substantially as and for the purposes described. 4th. The combination of electric controlling and alarm devices, and an automatic operating device consisting of a float D, provided with magnetic material, with adjacent devices consisting of a permanent magnet and a movable bar E, having operating connection with the circuit which contains said electric controlling and alarm devices, substantially as described. 5th. The combination of a tube B connected with the main liquid receptacle, with a float D containing magnetic material, an electric circuit and a circuit closer in said circuit, consisting of a pivoted magnetic bar E, substantially as described. 6th. The combination of the liquid-holding tube B and a float thereon, provided with magnetic material with a magnet outside said tube and adjacent thereto, and an armature pivoted behind and either between or to one side of the ends or poles of said magnet, substantially as described. 7th. The casing Q, provided with a sleeve R having a slotted projection T, substantially as and for the purposes described.

No. 24,853. Pipe or Tube made of Glass, etc.
(*Tuyau ou Tube fait de Verre, etc.*)

Carl F. W. Doehring, Leipzig, Germany, 3rd September, 1886, 5 years.

Claim.—1st. A pipe P in combination with a covering D of paper or other material, wound around the same and joined together by a suitable cement applied in a heated and fluid state, substantially as specified. 2nd. The combination of stand A with screw shaft *a*, spindles *b* having cones *d* at their inner ends, and supporting a pipe P and pressure roller P₁, with a reservoir B heated by steam or fire, containing cement, and an endless roll of paper or other material D, the whole being arranged to operate in the manner and for the purpose set forth.

No. 24,854. Dust Collector for Flour Mills, etc.
(*Aspirateur de Poussière pour Moulins à Blé, etc.*)

The Knickerbocker Company, (assignee of Orville M. Morsol), Jackson, Mich., U.S., 3rd September, 1886, 5 years.

Claim.—1st. In a dust-collector, a conical or tapering separating chamber in which the dust-laden air forms a vortex or whirling body, and which is provided with a tangential inlet for the dust-laden air, a discharge opening for the separated dust, and a discharge opening for the purified air, substantially as set forth. 2nd. A dust-collector composed of conical or tapering separate chambers having a dust discharge opening at its small end, and an air discharge opening at its large end, and an inlet for the dust-laden air connected with the large end of the separating chamber, substantially as set forth. 3rd. The combination, with the conical separating chamber C having a tangential air inlet B, a dust discharge opening *d* and an air discharge opening *e*, of an inclined deflector arranged on the inner surface of the separating chamber, whereby the dust particles are directed toward the dust discharge opening, substantially as set forth. 4th. The combination, with the conical or tapering separating chamber C provided with a dust discharge opening and an air discharge opening, an auxiliary dust separator surrounding the air discharge opening and provided with outlet, through which the dust passes from the auxiliary separator into the main separating chamber, substantially as set forth. 5th. In a dust-collector, a tapering separating case, in which the dust-laden air forms a vortex or whirling body, and provided at its small end with a discharge opening for the light material, and at its large end with a discharge opening for the heavy material, substantially as set forth.

No. 24,855. Vamp for Ladies' Boots.

(*Empeigne pour Chaussures de Dames.*)

Thomas Picoté, Montreal, Que., 3rd September, 1886, 5 years.

Réclame.—Une empeigne pour chaussures de dames composée des pièces montrées aux figs. 1, 2, et 3, des dessins ci-annexés, et ayant la forme toute spéciale y indiquée, le tout tel qu'on ci-dessus décrit et pour les fins sus-mentionnées.

No. 24,856. Weather Strip. (*Bourrelet de Porte.*)

William Harrison, Kingston, Ont., 3rd September, 1886, 5 years.

Claim.—1st. The combination, with a pivoted weather strip, of an upwardly projecting bar on the same, a spring for pressing the bar and strip downward, and of a catch for holding the bar and weather strip raised, substantially as herein shown and described. 2nd. The combination, with a pivoted weather strip, of a bar projecting upward from the same, a spring for pressing the strip and bar downwards and holding the bar and strip, and a catch on a door frame, and a lug on the bar for raising said bar and strip when the door is opened, substantially as herein shown and described. 3rd. The combination, with the pivoted strip A, of the bar B having a prong J, the spring G for pressing the strip A and the bar B downward, the catch K on the door-frame, and the latch M for locking the bolt when raised substantially as herein shown and described. 4th. The combination, with the pivoted strip A, of the bar B, the spring G, the pivoted latch M having an arm O, the spring Q and the beveled lug K on the door-frame, substantially as herein shown and described. 5th. The combination, with the pivoted strip A, of the bar B having the prong J, the pivoted latch M having the arm O, the automatic catch K and the beveled lug R, on the door-frame, and the spring G, substantially as herein shown and described. 6th. The combination, with the casing E having the aperture W, of the bar B having the prong J, the automatic catch K, the hinged strip A connected with the bar B, and of the pin V, substantially as herein shown and described. 7th. The combination, with the pivoted strip A, of the bar

D, the knob S, the casing F and the knob T, substantially as herein shown and described.

No. 24,857. Moulding Machine.

(*Machine Moulur.*)

Charles Dawson, Peterboro, On, 3rd September, 1886, 5 years.

Claim.—1st. A cross-head C connected to the vertical rod D, the lower ends of which are journaled on the shaft E, in combination with the cranks F fixed to the shaft E and pivoted to the bars G, which are pivoted on the frame A, a horizontal handle H fixed to the shaft E, substantially as and for the purpose specified. 2nd. The combination, with a moulding, of a planing frame I, made substantially the same shape and size of the flask B, substantially as and for the purpose specified. 3rd. A cross-head C having the arms J, in combination with the planing frame I, carried on the arms J, and operated by the rod K, substantially as and for the purpose specified.

No. 24,858. Foot Power Hammer.

(*Marteau à Marche.*)

Minnie Headen, Christiansburg, Va., U.S., 3rd September, 1886, 5 years.

Claim.—1st. In a foot power hammer, the combination of an upright frame having transverse bearings in its side pieces, a rock shaft journaled in the said bearings, and provided with semicircular grooved disks and with a socket, for the reception of the hammer, a foot lever or treadle pivoted with one end upon the rear end piece of the base frame, and having a cord or chain secured to its middle and passed over one semicircular disk, secured to one end of it, a flat, slightly curved spring secured to the forward end piece of the base frame, and having a cord or rope attached to its free end and passed over the other semicircular disk secured at the end of the same, and a flat, slightly curved spring secured at a right angle to the other spring, and bearing with its free end under the free end of the foot lever, as and for the purpose shown and set forth. 2nd. In a foot power hammer, the combination of a rectangular base frame, having two pairs of slightly converging side pieces secured adjustably by series of perforations between the ends of the uprights upon detachable bolts, and having transverse bearings in the said side pieces, a rock shaft journaled in the bearings and having a socket at its middle, and two semicircular grooved disks secured at both sides of the socket, and provided with a removable crank, a hammer fitting with its handle in the socket, a flat upright spring secured to the middle of the top piece of the adjustable frame and having a concave curved upper portion for the handle of the hammer, a foot lever or treadle pivoted at one end upon the rear end piece of the base frame, and having a cord or chain secured to its middle and passing over one of the semicircular disks secured to one end of the same, a flat, slightly curved spring secured at one end to the forward end piece of the base frame, and having a cord or chain secured to its free end and passing over the other semicircular disk, and secured to its end, and a flat, slightly curved spring secured at a right angle to the rigid end of the other spring, and having its free end bearing under the free end of the treadle, as and for the purpose shown and set forth.

No. 24,859. Machine for Making Wooden Hoops. (*Machine pour Faire les Cercles de Bois*)

John C. Shepherd, South Norwich, Ont., 3rd September, 1886, 5 years.

Claim.—The combination of the fixed knives B and *a*, the movable table C, the arms or rests *d*, the ratchet G and notched to heel H, with the combined pulley and balance to heel E, the levers F, F, and the cranks *k*, substantially as and for the purpose hereinbefore set forth.

No. 24,860. Machine for Pressing and Drying Lumber. (*Machine pour Presser et Sécher le Bois.*)

Heman S. Smith, Brooklyn, N. Y., U. S., 3rd September, 1886, 5 years.

Claim.—1st. In a machine for compressing lumber, the combination of a recessed bed-plate, vertical side bars secured thereto and supporting a cap plate, vertical guide rods and die plates moving vertically upon said rods, and provided with suitable dies having means for applying heat thereto, substantially as set forth. 2nd. In a machine for compressing lumber, the combination, with the hollow die plate G having dies *c*, *d*, of the stand pipe H and flexible pipes or connections *b*, whereby steam or hot water may be conveyed to the interior of said die-plate, substantially as set forth. 3rd. In a lumber pressing and drying machine, the combination of the bed plate A, standards E, E, guide posts F, F, having collars *a*, *a*, the cap G supported by said standards and guide posts, the hollow press plates H, H, supported horizontally on the collars *a*, *a*, and having exit cocks *c* and stops *d*, *d*, the movable platen B carrying the lower press-plate, and the stand pipe I having flexible tubes *b*, *b*, for connecting with each press plate, substantially as described. 4th. In a lumber pressing and drying machine, the combination, with the movable press plates H, H, and the fixed tables *e*, *e*, supported by the standards E, E, at one side of the machine, of the bell crank levers K, K, pivoted to lugs on the bed plate and adapted to be actuated by the lower press plate in its descent, substantially as described.

No. 24,861. Art of and Apparatus for Converting Heat Energy into Electrical Energy. (*Art de Transformer l'Energie de la Chaleur en Energie Electrique, et Appareil pour cet objet.*)

Park Benjamin, New York (assignee of Willard E. Case, Auburn), N. Y., U. S., 3rd September, 1886, 5 years.

Claim.—1st. The improvement in the art of converting heat energy into electrical energy, as hereinbefore described, which consists in imparting heat energy to a liquid containing conducting bodies, and thereby causing a development of chemical and electrical energy. 2nd. The improvement in the art of converting heat energy into electrical energy, which consists in imparting heat energy to a liquid containing conducting bodies, and thereby causing a development of chemical energy and electrical energy, the said electrical energy being substantially coextensive with the heat energy imparted. 3rd. The improvement in the art of converting heat energy into electrical energy, which consists in imparting heat energy to a liquid containing two separate conducting bodies, and thereby causing a development of chemical energy between said liquid and one of said conducting bodies corresponding to the heat energy so imparted. 4th. The improvement in the art of converting heat energy into electrical energy, which consists first in combining a liquid, and unimposed therein separate conducting bodies, the chemical affinities of the elements of which liquid are mutually satisfied at or below a certain temperature, at which temperature the liquid is substantially without action on the conducting bodies, and, second, applying heat to said liquid, whereby the same is decomposed and an element thereof liberated, which element chemically reacts on one conducting body, and so generates an electrical current in a circuit including said conducting bodies and a liquid. 5th. The process of regenerating a spent or exhausted galvanic cell, in which electricity has been generated by the action of heat on the contents of said cell, which consists in abstracting heat from the liquid in said cell. 6th. An apparatus for converting heat energy into electrical energy, containing the combination of a vessel, two bodies of conducting material and a liquid, the said bodies and liquid being in said vessel, and a means of heating said liquid, the said liquid at normal temperature being substantially without action on either of said bodies, but when heated capable of chemically reacting on one of said bodies, and so generating an electrical current in a circuit including said bodies and liquid, substantially as described. 7th. An apparatus for converting heat energy into electrical energy containing the combination of a hermetically closed vessel, two bodies of conducting material and a liquid, the said liquid and bodies being in said vessel, and a means of heating said liquid, the said liquid at normal temperature being substantially without chemical action upon either of said bodies, but when heated capable of chemically reacting upon one of said bodies, and so generating an electrical current in a circuit including said bodies and liquid, substantially as described. 8th. An apparatus for converting heat energy into electrical energy, containing the combination of a vessel, a solid body of conducting material, a body of conducting material in comminuted form, and a liquid, the said bodies and liquid being in said vessel, and a means of heating said liquid, the said liquid at normal temperature being substantially without chemical action on either of said bodies, but which liquid, on being heated, chemically reacts on said comminuted body, so generating an electrical current in a circuit including said bodies and liquid, substantially as described. 9th. An apparatus for converting heat energy into electrical energy, containing the combination of a vessel, a solid body of conducting material, a body of conducting material in comminuted form, with said comminuted body and with one circuit terminal and a liquid, the said bodies and liquid being in said vessel, and a means of heating said liquid, the said liquid on being heated chemically reacts on said comminuted body, so generating an electrical current in a circuit including said bodies and liquid, substantially as described. 10th. An apparatus for converting heat energy into electrical energy, containing the combination of a vessel, a solid body of conducting material, a body of conducting material in comminuted form, a means for preventing contact between said bodies and a liquid, the said bodies and liquid being in said vessel, and a means of heating said liquid, the said liquid at normal temperature being substantially without action on either of said bodies, but which liquid, on being heated, chemically reacts on said comminuted body, so generating an electrical current in a circuit including said bodies and liquid, substantially as described. 11th. In an apparatus for converting heat energy into electrical energy, the combination of a vessel A, carbon body G, plate C of conducting material, a mass of pulverized metallic tin in contact with said plate, circuit connections and a liquid consisting of a solution of chromic chloride, the said liquid and tin being contained in said vessel, and a means of heating said liquid, substantially as described. 12th. In an apparatus for converting heat energy into electrical energy, the combination of a vessel A, carbon plate G having a porous envelope H, carbon plate C, a mass of pulverized metallic tin in contact with said plate, circuit connections and a liquid consisting of a solution of chromic chloride, the said liquid and tin being contained in said vessel, and a means of heating said liquid, substantially as described. 13th. In combination with an apparatus for converting heat energy into chemical and electrical energy, a receptacle adapted to receive said apparatus containing a substance having a boiling point not exceeding 212 degrees Fahrenheit (under ordinary conditions), and a means of heating said substance, substantially as described. 14th. In combination with an apparatus for converting heat energy into electrical and chemical energy, an open receptacle adapted to receive said apparatus and containing water, and a means of heating said water, substantially as described. 15th. In an apparatus for converting heat energy into electrical energy, substantially as set forth, a metal element in comminuted form combined with mercury. 16th. In an apparatus for converting heat energy into electrical energy, substantially as set forth, a liquid from which metal is precipitated and mercury placed to receive said precipitate. 17th. In an apparatus for converting heat energy into electrical energy, substantially as set forth, the combination of the vessel A, containing chromic chloride liquid and supported therein, the tray E containing mercury, and tin amalgam, carbon plate G and circuit connections.

No. 24,862. Railway Car-Coupler.*(Attelage de Chars de Chemin de Fer.)*

William H. Whiteside, Sandwich East, Ont., 3rd September, 1886; 5 years.

Claim.—A car-coupling having spring I, pin D, spring barrel C,

cap G, latch bar or slide B, bolt R, which passes through the slot in it, springs F, F all arranged and combined substantially as described for the purpose hereinbefore set forth.

No. 24,863. Cast Metal Pulley or Wheel for Harvesting Machines, etc. (Poulie ou Roue en Fonte pour Moissonneuses, etc.)

The Massey Manufacturing Company, Toronto, Ont., (assignee of William N. Whitely, Springfield, Ohio, U. S.), 3rd September, 1886; 5 years.

Claim.—1st. A wheel for harvestors and other purposes, constructed of cast metal, having the rim divided in one or more places, with the ends diverging from the circle of the wheel, and under permanent stress by being forcibly bent and held in position coincident with said circle, substantially as described and for the purposes specified. 2nd. A pulley or other wheel having a plain face and constructed of cast metal, having the rim divided in one or more places, with one end of greater, and the other end of less radius than the circle of the wheel, and under permanent stress by being forcibly brought together and secured, substantially as described and for the purposes set forth.**No. 24,864. Sliding Door Latch.***(Loquet de Porte en Coulisse.)*

James T. Gordon, John H. Hamilton and Samuel Barrett, Concord, N. H., U. S., 3rd September, 1886; 5 years.

Claim.—1st. In a sliding door-fastening, the combination, with an eye plate secured to the door, of a swivelled latch having a perforated finger adapted to automatically enter the eye in said eye plate, while said door is sliding shut, and a rotary dog pivoted to the latch-housing and adapted to automatically fall against a shoulder formed upon said swivelled latch, and secure said locking mechanism, substantially as and in the manner set forth. 2nd. In a car door fastening, the combination, with the housing, of the cap-piece having perforated ears, the swivelled latch provided with a perforated ear adapted to be swung up by the latch between the ears of said cap-piece, to form a coincident opening for the seal-wire and the pivoted weighted dog for holding up said latch, as set forth. 3rd. A device for fastening car-doors consisting of the housing E, the pivoted weighted dog H, the swivelled latch F provided with shoulder J, perforated finger f and perforate ear j, the eye-plate D and the plate-piece E, having ears e, c, perforated to form a coincident opening with that in the ear j of the latch F, or the ear h of the arm H, for receiving the seal-wire, as set forth.**No. 24,865. Double-Acting Rotary Gig.***(Laineuse Rotatoire à Double Action.)*

John Shearer, Proton, and Hour, W. Karoh, Hespeler, Ont., 3rd September, 1886; 5 years.

Claim.—1st. A gig having a frame constructed so as to completely enclose the feasible-cylinder, substantially as and for the purpose specified. 2nd. A gig in which the feeding-rollers are driven from the main shaft of the machine by a system of bevel-gear, substantially as and for the purpose specified. 3rd. The spindle G, journaled in brackets on the frame A, and driven from the shaft G by the spur-pinions H, spur-wheel L and bevel-pinions N and U, in combination with the bevel-pinions P, situated at one end of the shaft G, and arranged to mesh with the bevel-pinions P, on the end of the spindle of the feed-roller a, substantially as and for the purpose specified. 4th. The spindle G journaled in brackets on the frame A, and driven from the shaft G by the spur-pinions H, spur-wheel L and bevel-pinions N and U, in combination with the bevel-pinion I, situated at the other end of the shaft G and arranged to mesh with the bevel-pinion a, on the end of the feed-roller C, substantially as and for the purpose specified. 5th. A lever P having a forked end q, arranged to fit into a recess in the collar r, substantially as and for the purpose specified. 6th. A friction strap R passing over the pulley Q, on the end of the roller a or b, and connected to the jaws of the lever S, in combination with the thumb-screw t, arranged to adjust the lever S on the quadrant T, substantially as and for the purpose specified.**No. 24,866. Middlings Purifier.***(Epurateur des Gruaux.)*

James Huxtable, Horning's Mills, Ont., 3rd September, 1886; 5 years.

Claim.—1st. In a sieve provided with a brush or bar for cleaning its surface, the combination of a device arranged to withdraw the brush or bar from the surface at certain prearranged intervals, substantially as and for the purpose specified. 2nd. A pivoted knocker G, in combination with travelling brushes B, substantially as and for the purpose specified.**No. 24,867. Bed Spring. (Resort de Sommier.)**

Samuel K. Butterfield, Swanton, Vt., U. S., 3rd September, 1886; 5 years.

Claim.—A connecting-link for bed-springs consisting of a single piece of wire, bent to form the three curves E, D E, overlapping and crossing one another, as shown, and having the corners of said overlapped and crossed parts turned down, to form the loops H in planes, at right angles to the horizontal oblong loops F, as and for the purpose herein shown and specified.**No. 24,868. Shaving Apparatus.***(Appareil pour Raser.)*

Andrew Partridge and Dennis F. Sweeney, Springfield, Mass., U. S., 3rd September, 1886; 5 years.

Claim.—1st. The within-described improved shaving apparatus

consisting of a pair of jaws A, A, a spring-handle B formed integral with said jaws and framing them together, a clamp-screw C adapted to close and distend said jaws, and a blade D and guard H adapted to be enclosed between said jaws and held by the screw C, substantially as shown and described. 2nd. The within-described improvement in shaving apparatus, consisting of a pair of jaws A, A, formed together to enclose between them a blade D and guard therefor, in combination with auxiliary jaw pieces O, O, provided with means, as o, o, for rigidly holding the ends of a blade between them, and adapted, substantially as shown, to move over and be adjustable upon said jaws to carry the blade with them for the purpose set forth. 3rd. The within described improved guard for shaving apparatus consisting of a plate H, provided with perforations A arranged in series as shown, with those in one row parallel to the edge of the blade, coming opposite the intervals between the perforations of the adjacent row, and said plate being arranged relatively to a blade D, substantially as shown.

No. 24,869. Saw Log Sleigh. (Traineau à Billots.)

Gédéon Desjardins, Pombroke, Ont., 3rd September, 1886; 5 years.

Claim.—1st. In the sleigh herein shown and described, the combination of the beam A having transverse grooves both in its top and bottom sides, the necks a fitted into the blocks B, the binders C lying in the top grooves of the beam, flush with its top side, and the dowel c, substantially as shown and for the purpose set forth. 2nd. In the above described vehicle, the double link E pivoted to the tongue F, by the bolt d, the pin f arranged to hold the tongue and link in line, and the staple G passed through the link and secured in the beam of the leading sleigh by the nuts e, all substantially as shown and for the purpose set forth.

No. 24,870. Compound for Coating and Finishing Walls. (Composition pour Enduire et Finir les Murs.)

Enos A. Bronson, Wymore, Neb., U.S., 3rd September, 1886; 5 years.

Claim.—1st. The herein-described composition of matter for finishing walls or ceilings, consisting of a vehicle of plaster of paris, sand, glue, whitening or Keene's cement, and if desired a suitable colouring-matter, substantially as set forth. 2nd. The herein-described composition of matter, for coating and finishing walls, consisting of a suitable vehicle of plaster of paris, sand, glue, spanish whitening or Keene's cement, and marbledust, in substantially the proportions specified.

No. 24,871. Buggy Top. (Capote de Voiture.)

Daniel Conboy, Toronto, Ont., 3rd September, 1886; 5 years.

Claim.—1st. The straps A connected at one end to the buggy top, in combination with the bar B made of metal or other hard substance, and having an eye or hook a formed substantially in the centre, substantially as and for the purpose specified. 2nd. The straps A connected at one end to the buggy top, in combination with the bar B made of metal or other hard substance, substantially as and for the purpose specified.

No. 24,872. Spring Carriage Reach. (Fleche Elastique de Voiture.)

Samuel Atkinson, Cincinnati, Ohio, U.S., 3rd September, 1886, 5 years.

Claim.—1st. The combination of two springs composed of one or more leaves, said springs extending respectively from the front and rear axles to a point beyond the centre of the body of the vehicles, and rigidly secured together at their crossing point, the inner ends of said springs being suitably connected to the body of the vehicle, substantially as set forth. 2nd. A reach for vehicles having in combination two springs composed of one or more leaves, said springs extending from the head-block and rear axle respectively to a point beyond the centre of the vehicle body, and having their inner ends connected to the vehicle body, said springs being rigidly connected at their crossing point, substantially as set forth.

No. 24,873. Tobacco Moistening Apparatus. (Appareil pour Humecter le Tabac.)

Leopold J. A. Laurier, St. Paul, Minn., U.S., 3rd September, 1886; 5 years.

Claim.—1st. The combination, with the receptacle for cigars, etc., of a device for impregnating the air in said show-case with moisture consisting of a casing B, covers C, C, trough E and a moisture producing and retaining substance A, substantially as described and for the purpose set forth. 2nd. The moistening device for cigar receptacles, consisting of the wire cloth cylinder provided at each end with a metallic cap, the metallic trough connecting said caps, and the coil of bibulous material carried by said cylinder, substantially as set forth.

No. 24,874. Combined Drill and Bit Shank and Holder. (Tige 1 orte-Foret et Porte Mèche de Trépan.)

George H. Wilkes, Brantford, (assignee of Simon P. Graham, Galt), Ont., 3rd September, 1886; 5 years.

Claim.—1st. A drill or wood bit shank B, in which grooves C, C are formed, substantially as shown and described and for the purpose specified. 2nd. A holder D formed with jaws or prongs E, E, substantially as shown and described and for the purpose set forth. 3rd. The combination of a drill shank B, in which grooves C, C are formed, with the holder D formed with prongs or jaws E, E and sleeve G substantially as shown and described and for the purpose specified.

No. 24,875. Washing Machine.

(Machine à Laver.)

Westley G. Barkloy, Chesterville, Ont., 4th September, 1886; 5 years.

Claim.—1st. The thin sheet metal circular covering A of the cylinder having in it the circular opening a, and the ribs b attached to its inner surface, as shown and described. 2nd. The combination of a cylinder having the circular metallic perforated covering A and ribs b, with the trunnions c and crank e, as shown and described. 3rd. The combination of the cylinder having perforated metallic covering A, circular openings a, ribs b and a hinged door portion held by the hump f and pin g, with a suds box supported by the logs h secured to its ends D, as herein shown and described.

No. 24,876. Combined Feed Water Heater and Smoke Stack for Locomotives, etc. (Réchauffeur de l'Eau d'Alimentation et Cheminée Combinées pour Locomotives, etc.)

James Armstrong, Bridgewater, N. Y., U. S., 4th September, 1886; 5 years.

Claim.—1st. In combination of a feed water heater and smoke stack combined for locomotives and other portable steam boilers, the combination of the water chambers a₁, a₂, a₃, water tubes a₄ and corresponding openings a₅ to be closed by screw-plugs c, c, and outlet pipe B₃, and passage a₃, a₄ and in closing jacket a, whereby the products of combustion and exhaust steam pass through passage a₃, a₄, and around tubes a₅, substantially as described. 2nd. In combination of feed water heater and smoke-stack for locomotive and other portable steam boilers, the combination of the water chambers a₁, a₂ connected together by tubes a₃ and bars e₃, e₄, and provided with a removable inclosing jacket a and passages a₃, a₄, with the inlet pipes B, B and outlet pipe B₃, blow off cock n, thimbles k, substantially as described and for the purposes set forth. 3rd. In combination of a feed water heater and smoke-stack for locomotives and other portable steam boilers, the water chambers a₁, a₂ connected by tubes a₃ and bars e₃, e₄, movable guards S, substantially as described. 4th. A movable jacket, in combination with feed water heater and smoke stack combined, for locomotives and other portable steam boilers, substantially for the purposes set forth and described. 5th. Check valves, in combination with a feed water heater and smoke-stack combined, for locomotive boilers, substantially for the purposes set forth and described.

No. 24,877. Refrigerator. (Garde-Manger.)

Henry Ruth and John L. Gallup, Kendallville, Ind., U. S., 4th September, 1886; 5 years.

Claim.—1st. The enclosing shell of a refrigerator, consisting of a numbers successive sheetings lined with non-conducting material, such as felt or paper, and having continuous air spaces formed between each successive layer. 2nd. The bottom of a refrigerator shell consisting of an external sheeting, intermediate or false floor lined with non-conducting material, and an air shell formed between them, and an inner or proper floor having a deep space between the joists filled with cinders. 3rd. A refrigerator having an ice chamber at one end or both ends, such chamber or chambers formed by an open graded floor with properly drained floor or pan below, and air space portion extending from the grate surface upwards to near the top or ceiling but allowing room for the circulation of the air. 4th. A refrigerator having a shell consisting of several layers of sheeting lined with non-conducting material, and forming continuous air spaces between each successive layer, the space beneath the floor filled with cinders, an ice chamber at one or both ends formed by a portion having open air spaces and allowing room for circulation at the top, and a raised floor properly drained and open to the current, all substantially as shown and described and as and for the purpose set forth.

No. 24,878. Pulley Covering.

(Enveloppe de Poulie.)

George M. Lindsey, Baltimore, Md., U. S., 4th September, 1886; 5 years.

Claim.—1st. A covering for pulleys having a backing of woven material, an elastic facing composed of a composition embracing ground cork spread on one side of said backing and a coating of soluble cement on the other side of the backing, as set forth. 2nd. A covering for pulleys having in combination, a backing of loosely woven material, a facing of ground cork and boiled oil, substantially as described, spread and dried on one side of said backing, and a coating of water-soluble cement on the other side of the backing, as set forth.

No. 24,879. Fence Machine.

(Machine à Clôture.)

Sam. Watson, Straughn, Ind., U.S., 4th September, 1886; 5 years.

Claim.—1st. In a fence-machine of the kind described, the combination of a reel-frame, the reels in pairs, the fence-posts against which the reel-frame is placed, and the wires passing on each side of the fence-post and secured, whereby the wires hold the reel-frame against the post, for the purpose set forth. 2nd. In a fence-machine, the twister having a pivoted wire-retainer consisting of a plate e₂ having a slot c₃, and wire-retaining bar c₄ secured in said slot, substantially as described. 3rd. The combination of a reel-frame, the reels arranged in pairs, the fence-posts, to one of which acting as a tension post the reel-frame is secured, and the wires secured, substantially as set forth, and passing on each side of the tension-post in front of said frame, substantially as and for the purpose specified.

No. 24,880. Hollow Auger. (Evidoir.)

Phillip Millor, Norwich, Ct., U.S., 4th September, 1886; 5 years.

Claim.—1st. An auger of the class herein referred to, consisting of an outer barrel or shell, to which is secured a cutting or boring head, and an inner non-rotatable tube adapted receive the chips from said cutting or boring head and discharge the same through its free end, substantially as described. 2nd. In combination with an outer shell, and a cutting-head of the form described, an inner removable tube concentric with said outer shell, said inner shell being held from rotating by a system of gears and crank, substantially as described and for the object specified. 3rd. In combination with an outer shell, having secured thereto a cutting-head of the form described, an inner removable tube concentric with said outer shell and having the end which enters the cutting-head slightly reduced in diameter, as described, to form a throat through which the core of the chips enters said inner tube. 4th. In combination with the outer shell *a*, a cutting-head of the form described, secured to said outer shell, and the inner removable tube *b* having the throat-section *d*, said throat-section being provided with a series of internal longitudinal V-shaped ribs *n* as described and for the purpose specified. 5th. The tube *b* having secured to one end a suitable cutting-head, and to the opposite end a fixed collar *a* having an internal crank-frame *o p*, as described, an inner tube *c* concentric with tube *a*, carrying on its free end a bevelled gear 2, a shaft adapted to rotate within section *o* of the crank frame carrying at one end a gear which engages gear 2, and at its opposite end a bevelled gear 4, as described, and a tube adapted to rotate on section *p* of said crank-frame, carrying a gear 5 adapted to engage said gear 4, all of said elements being combined substantially as and for the object set forth. 6th. In combination with the outer shell *a* and a cutting-head, substantially as described, secured to said shell, a counterbored collar secured to said shell at the end opposite to said cutting-head, and an inner tube, of the form described, having a flange capable of engagement with said counterbored collar to hold the inner tube concentric with the outer shell. 7th. In combination with shell *a*, collar *n*, frame *o p* and a latch pivoted in said frame, substantially as described, the inner tube *c* having at its free end a flanged collar capable of engagement with said latch, in the manner specified and for the purpose stated. 8th. An outer shell forming the barrel of the auger a cutting-head secured thereto having both a cutting-lip *b*, and twist for conveying the chips into the tube, as described, and provided also with a pocket capable of producing a cut whose diameter is slightly greater than the diameter of the shell *a*, and whose inner wall is so formed that the chip thus cut is forced inward, and sandwiched between the folds of the flat chip produced by lip *b*, all being combined substantially as and for the object set forth.

No. 24,881. Waterproof and other Garments. (Vêtements Imperméables et autres)

Joseph J. Byers, Brooklyn, N.Y., U.S., 4th September, 1886; 5 years.

Claim.—1st. A garment having a shoulder A, sleeve *a*, portion F, formed with perforations *b* between the sleeve and collar, an epaulet of greater width than the perforated portion embraced thereby, secured outside the marginal edges of the latter, forming the inner portion of an air-passage *a*, and a cap secured to the outer end of the epaulet of greater width than the portion of the sleeve embraced thereby, extending down over the latter secured to the sleeve at each side, and forming the outer portion of the air-passage *a*, substantially as described. 2nd. A garment having a shoulder A, formed with perforated portion F, sleeve *a* having perforated portion F, epaulet B embracing the perforated shoulder portion, and a cap C secured to the outer end of the epaulet, embracing the perforated sleeve portion and secured to the sleeve, the epaulet with its cap being of greater width than the perforated portions secured to the latter and forming the air-passage *a* extending beneath the cap through the epaulet to the collar, substantially as described. 3rd. A garment having a perforated shoulder, an epaulet and cap covering said perforated shoulder, and secured thereto on each side of the perforations forming an air-passage *a*, and a stay-piece imparting fullness to the epaulet and maintaining the air-passage between this and the perforated shoulder, substantially as set forth. 4th. A garment having a perforated shoulder, an epaulet and cap covering the said perforated shoulder, and a bridge D on the shoulder forming a seat for the epaulet, substantially as set forth.

No. 24,882. Whiffletree Hook.

(Crochet de Palonniers.)

Orlando M. Pond, Independence, Iowa, U.S., 4th September, 1886; 5 years.

Claim.—In a whiffletree-hook, a ferrule adapted to fit over the end of the whiffletree, and cast with a slotted keeper having a notched seat, said keeper being curved forward, as shown, and extending out from or beyond the end of the ferrule, in combination with the U-shaped hook pivoted in the slot of the keeper, and adapted to swing back over the end of the same to connect or disconnect the trace, substantially as and for the purpose set forth.

No. 24,883. Separating Attachment for Fanning Mills and Thrashing Machines. (Séparateur pour Tarares-Crib-leurs et Machines à Battre.)

John Heron, Blenheim, Ont., 4th September, 1886; 5 years.

Claim.—1st. In combination, with the case or shoe A, of a separating attachment for fanning mills and thrashing machines, the inclined bottom plate J for collecting and conducting the cockle and other refuse to trough F, substantially as shown and described. 2nd. In combination, with the case or shoe A, screens B, C, D, E, and troughs F, G, H, the additional trough I at end to collect the larger matter from screen B, substantially as shown and described.

No. 24,884. Machine for Uniting Soles and Uppers of Boots and Shoes. (Machine à Poser les Semelles des Chaussures.)

Stillman W. Robinson, Columbus, Ohio, U.S., 4th September, 1886; 5 years.

Claim.—1st. In a machine to unite soles to uppers, the working head and slotted spindle head and wire feeding grippers extended through slots in the said spindle head, combined with a cam-ring or collar to co-operate with and cause the said grippers to be forced against and so as to grasp the said wire, substantially as described. 2nd. In a machine to unite soles to uppers, the toothed grippers provided at their upper ends with hooks to enable the grippers to be suspended loosely, and the slotted spindle-head in which the said grippers are placed, combined with a cam-ring to co-operate with and cause the grippers to be moved radially in the slots of the spindle-head, substantially as described. 3rd. The shaft, its crank-pin, the knuckle-piece, the pitman and connected working-head D, combined with the yoke and spindle B with which it is connected, the said yoke receiving a vibrating motion to oscillate the spindle and ring and falling with the knuckle-pin, substantially as described. 4th. The reciprocating working-head, the presser-plate carrying sleeve and the reciprocating and oscillating spindle, combined with an independent stop adapted to arrest the descent of the spindle when desired, substantially as described. 5th. The uniformly-reciprocating working-head, made as a sleeve, and the spindle B, combined with the interposed sleeve *c* having at its lower end the bearing plate *e* and supporting the presser-plate, substantially as described. 6th. The sleeve *c*, the bearing frame *e* at its lower end provided with the pins or studs *e*, *e*, and the cutter-carrying levers geared together as described, and the cutters combined with means to actuate the said levers to operate the cutters and sever the fastening material, substantially as described. 7th. In a machine for uniting soles to uppers, the spindle B, the centre-piece and the attached spindle-head, slotted as described, combined with grippers to engage the wire, and with means, substantially as described, to operate the grippers, as set forth. 8th. In a machine for uniting soles to uppers, the spindle-head B, combined with the detaining jaws placed therein, and with the spring *d*, to operate substantially as described. 9th. The spindle-head, provided with the slot or opening 12, combined with the detaining jaws, provided at their rear sides with projections 65, substantially as described. 10th. The spindle-head, provided with the slot or opening 12, combined with the detaining jaws, one of which if provided with pins, substantially as described. 11th. The spindle B, its collar B3, slotted at 71, and the spindle-head provided with the projection 70, combined with the centre piece B4, substantially as described. 12th. The spindle, the spindle-head, the reciprocating working head D, and attached ring G having a race 47, combined with the gripper-carriers suspended by the said ring and adapted to operate the grippers, substantially as described. 13th. The spindle, the slotted spindle-head, the reciprocating working-head and attached ring G, provided with a projection or race 47 and with tappets, combined with the gripper carriers and the grippers *d*, and with the cam-ring which is arrested by the said tappets, substantially as described. 14th. The working-head and its attached ring, combined with the slotted spindle head, and with the gripper carriers made as segments to embrace the spindle-head, and having projections 48 and 49 to operate, substantially as described. 15th. In a machine for uniting soles to uppers, the slotted rotating and reciprocating spindle-head grippers *d* thereon, and gripper-carriers, combined with the working its attached ring provided with the race 47, and with the flush blocks to complete the said race after the hooks of the gripper-carriers are passed above the said race, substantially as described. 16th. In a machine to unite soles to uppers, a uniformly-reciprocating working-head, a spindle and spindle-head thereon, grippers, gripper-carriers and detaining jaws, and the horn, combined with the mechanism, substantially as described, to automatically lift the horn and lock it in place before the wire is driven into the stock in the horn, and to automatically release the horn to depress the same, as set forth. 17th. In a machine to unite soles and uppers, the feed-dog *m*, its pivoted guide and the shaft *h*, and its eccentric pin, combined with the cam-rod *h*, and means substantially as described, to operate it. 18th. The feed-dog *m*, the pivoted guide, the cam-rod, an adjustable pin or support therefor, and the inclined dog *n*, combined with a lever to move the said dog to effect the lateral movement of the feed-dog. 19th. In a machine for inserting metal fastenings into the soles of boots and shoes, a horn, a feed-dog *m*, and means, substantially as described, to move the same to effect the feeding of the boot or shoe intermittently on the horn, combined with a lever change of position, of which enables the spacing of the fastening at any desired distance from each other, while the machine is in operation, substantially as described. 20th. The horn, the presser-plate, the feed-dog, the shaft *h*, crank-pin *h* and means to turn it to place, the said crank-pin more or less distant from the centre of the presser and axis of the horn, combined with a cam-rod to move the feed-dog and place, its acting front end more or less distant from the axis of the horn, the front end of the feed-dog, acting as a gauge to insure the insertion of the followings more or less distant from the edge of the sole, substantially as described. 21st. In a machine for uniting soles to uppers, the levers E, E, the cutter-holding clamping-blocks E3, E4, and the cutters 7, 8, combined with the presser-plate provided with holes for the guidance of the said cutters, substantially as described. 22nd. In a machine for uniting soles to uppers, the levers E, E, the cutter-holding clamping-blocks E3, E4, and cutters, combined with the adjusting screws 12 and the slotted plugs *a*, to operate substantially as described. 23rd. The ring G, provided with a race, and gripper carriers supported by the said race, combined with the grippers, to operate substantially as described. 24th. In a machine to unite soles to uppers, the tappet-ring provided with a race having removable flush blocks 46, substantially as described. 25th. The working-head, the tappet-ring G connected therewith, the slotted spindle-head and the grippers provided with shoulders 54, and means to suspend the said grippers loosely with relation to the said ring, combined with the cam-collar interposed between the said tappet-ring and the projections 54 of the grippers, substantially as described. 26th. In a machine to unite

soles to uppers, the slotted spindle-head, the grippers 23 inserted in the slots of the said spindle head, and provided near their lower ends with shoulders 54, and at their upper ends with hooks, and means to support loosely and reciprocate the said grippers in the slots of the spindle head, combined with the loosely-supported cam ring 55 to retain the grippers in the slots of the spindle, and to actuate the grippers to grasp the wire, substantially as described. 27th The slotted spindle-head, the working head, its attached ring 61 provided with the tappets 45, and the loosely-suspended toothed grippers provided at or near their upper ends with hooks, and near their lower ends with shoulders 23 combined with the ring 55 having cams 57 and recesses 58, the said ring being supported frictionally by the said grippers, substantially as described. 28th The slotted spindle-head, means, substantially as described, to partially rotate it, and the toothed grippers to feed the wire, and the tappet-ring, combined with the loosely-supported cam ring surrounding the said spindle-head and to actuate the grippers, substantially as described. 29th The cutter-carrying levers E, Et, geared together as described, combined with the sliding rack-bar having teeth to engage the teeth 13 of the lever E, substantially as described. 30th The feed bar m, the lever 33 and means to move it, combined with the lever 36 and the cam rod h, to control the movements of the feed-bar, substantially as described. 31st The spindle-head D, slotted longitudinally for the reception of the grippers, and provided with the slot 72 at right angles to the gripper receiving slot for the reception of the detaining jaws or blocks, and the toothed grippers, and the detaining jaws or blocks, combined with the reciprocating working-head and the cam-ring, and with means, substantially as described, to effect the movement of the said head and ring to actuate the grippers, for the purpose set forth. 32nd In a machine for uniting the uppers and soles of boots and shoes, the tappet-ring having tappets 45, the slotted spindle-head provided with toothed grippers for feeding the wire, and the gripper-operating loose ring provided with tappet projections and surrounding the said spindle-head, said loose ring being provided with tappet projections to engage with the tappets 45 carried on the working head, combined with means, as described, for partially rotating the slotted spindle-head. 33rd The reciprocating pitman D₁, provided with a hook, and the horn combined with the trip rod f, slide f₂ and intermediate connecting mechanism, substantially as described, to release the horn, as set forth. 34th The reciprocating pitman D₂, provided with a hook, and the horn and the lifting rod, combined with the lever 31 to lift the horn, substantially as described. 35th The reciprocating pitman B₁, provided with the hook or projection, and the trip-rod and lifting rod, and means, substantially as described, intermediate or between the said rods and horn, to effect the release and the ascent of the horn, combined with a rod controller to operate, as set forth. 36th The rod controller, the trestle to move it, the horn, the rods f₂ and f₃, the horn-locking slide f₄, and means, substantially as described, to connect the said rods operatively with the said slides and horn, combined with the reciprocating pitman provided with a hook or projection to engage the said rods and operate the horn, substantially as described. 37th The horn's pivot pin f₅, the lever 31, link g₁, lever f₆ and locking slide f₇, combined with the rod f₃, and latch to first lift the horn to place the foot or shoe thereon against the presser, and to thereafter operate the slide g₂ to lock the horn in elevated position, substantially as described. 38th The rising and falling horn, combined with the feed dog m and its pivoted guide, to permit the front end of the feed-dog to be placed opposite the edge of the sole of the boot or shoe and lifted, substantially as described. 39th The feed-bar m, the lever 33 and means to move it, combined with the lever 36 and the cam-rod h, to control the movements of the feed-bar, substantially as described.

No. 24,885. Pessary. (Pessaire.)

Madison M. Warmoth, Brandenburg, Ky., U. S., 4th September, 1886, 5 years.

Claim.—A cone-shaped pessary, consisting of a spring-metal body inclosed in a rubber tubing and formed into coils contracting or tapered toward the upper end for supporting the uterus or womb, and its lower ends adapted to rest upon the soft parts within the vagina, substantially as shown and described.

No. 24,886. Marking Device.

(Machine à Etiqueter.)

Sampson H. Brown, Leesville, Texas, U. S., 4th September, 1886, 5 years.

Claim.—The herein described improved marking device, the same consisting of an arm adapted to be inserted between the folds of a fabric, and provided with means for holding it fixed in its position after it has been inserted, and having hinged to its outer end the tag having a strip of suitable material secured around its edges, as shown, so as to form on both sides of the tag the flanges adapted to receive the removable, reversible and interchangeable cards, substantially as set forth.

No. 24,887. Fire Grate. (Grille de Foyer.)

Ephraim J. Story, Washington, D. C., U. S., 4th September, 1886, 5 years.

Claim.—1st The combination of two parallel grate-sections, each of which has a rear pivotal bearing, whereby, when the sections are dumped, each section will discharge its contents toward the front. 2nd The combination of the two parallel grate-sections D₁ and D₂, each of which has a rear pivotal bearing, whereby, when the sections are dumped, each section will discharge its contents toward the front. 3rd The combination of the two parallel grate-sections D₁ and D₂, each having rear bottom engaging hooks with rear pivotal bearings, whereby, in dumping the contents, each section will be discharged toward the front. 4th The combination of two oppositely inclined parallel grate-sections, each of which has rear pivotal bearings, whereby, when the sections are dumped, each section will discharge its contents toward the front. 5th The combination of the

two oppositely-inclined parallel grate-sections D₁ and D₂, each of which has rear pivotal bearings, whereby, when the sections are dumped, each section will discharge its contents toward the front. 6th The combination, with a central longitudinal grate-bar, of a rear grate-section which is pivotally supported at its rear extremity, and a front grate-section which is pivotally supported at its rear extremity. 7th The combination, with a central longitudinal grate-bar D of a rear grate-section D₁, which is pivotally supported at its rear extremity, and a front grate-section D₂, which is pivotally supported at its rear extremity. 8th The combination, with a central longitudinal grate-bar, of a rear grate-section which has rear pivotal bearings, and which inclines from its rear extremity downwardly toward the central longitudinal grate-bar, and a front grate-section which has rear pivotal bearings and which inclines from its front extremity downwardly toward the central longitudinal grate-bar. 9th The combination, with the central longitudinal grate-bar D, of a rear grate-section D₁ which has rear pivotal bearings, and which inclines from its rear extremity downwardly toward the central longitudinal grate-bar, and a front grate-section D₂, which has rear pivotal bearings and which inclines from its front extremity downwardly toward the central longitudinal grate-bar. 10th The combination of a rear grate-section, which is at its rear extremity pivotally supported upon bearings which project from the walls of the fire-chamber, a central longitudinal grate-bar which is supported in bearings it, or upon the end-plates of the fire-chamber, and which is provided at each end with a front hooked supporting-lug, and a front grate-section which is at its rear extremity pivotally supported upon the front hooked supporting-lugs of the central longitudinal grate-bar. 11th The combination, with a central longitudinal grate-bar, of a rear grate-section which consists of a longitudinal connecting-web, and two distinct alternating series of transverse bars, and a front grate-section which consists of a longitudinal connecting-web and two distinct alternating series of transverse bars, substantially as and for the purposes set forth. 12th The combination, with a central longitudinal grate-bar D, of a rear grate-section D₁, which consists of a longitudinal connecting-web d and two distinct alternating series d¹⁰ and d¹¹ of transverse bars, and a front grate-section D₂ which consists of a longitudinal connecting-web d₂ and two distinct alternating series d₂¹⁷ and d₂¹⁸ of transverse bars. 13th The combination, with a central longitudinal grate-bar, which is provided with short lateral bars or agitating fingers, of a rear grate-section which embraces a longitudinal connecting-bar or web and two distinct series of alternating transverse bars and a front grate-section which embraces a longitudinal connecting-bar or web and two distinct series of alternating transverse bars. 14th The combination, with a central longitudinal grate-bar D which is provided with short lateral bars or agitating-fingers d₁ and d₅, of a rear grate-section D₁ which embraces a longitudinal connecting-bar or web d₁, and two distinct series d₁¹⁰ and d₁¹¹ of alternating transverse bars and a front grate-section D₂ which embraces a longitudinal connecting-bar or web d₂, and two distinct series d₂¹⁷ and d₂¹⁸ of alternating transverse bars. 15th The combination, with a central longitudinal grate-bar which is provided with lateral supporting-lugs, and with short lateral bars or agitating-fingers, of a rear grate-section which has a series of transverse bars which are adapted to engage with the lateral supporting lugs upon the central bar, and which has also a series of transverse bars which are adapted to operate in connection with the short lateral bars or agitating-fingers. 16th The combination, with a central longitudinal grate-bar D, which is provided with lateral supporting-lugs d₁ and d₅, and with short lateral bars or fingers d₃ and d₄, of a rear grate-section D₁ which has a series of transverse bars d₁ which engage with the lateral supporting-lugs d₁ upon the central bar, and which has also a series of transverse bars d₁¹⁰ which operate in connection with the short lateral bars or fingers d₃. 17th The combination, with a central longitudinal grate-bar, which is provided with two series of lateral supporting-lugs, and with two series of lateral bars or agitating-fingers, of two grate-sections, each of which has two series of transverse bars of dissimilar longitudinal extent, the longer series being adapted either to rest upon the supporting-lugs or to be passed vertically between them, and the shorter series being arranged coincident with, and adapted to be operated in connection with the short lateral bars or agitating-fingers. 18th The combination, with a central longitudinal grate-bar D which is provided with two series d₂ and d₄, of lateral supporting-lugs, and with two series d₂ and d₄ of lateral bars or fingers, of two grate-sections D₁ and D₂, each of which has two series of transverse bars of dissimilar longitudinal extent. 19th The combination, with a central longitudinal grate-bar D, which is provided with two series d₂ and d₄, of lateral supporting-lugs, and with two series d₂ and d₄, of lateral bars or fingers, of two grate-sections D₁ and D₂ which have two series d₂¹⁰, and d₂¹¹, and d₄¹⁷, and d₄¹⁸, respectively of transverse bars, the longer bars d₂¹⁰, and d₄¹⁷, being operated either to rest upon the supporting-lugs or to be passed vertically between them, and the shorter bars d₂¹¹ and d₄¹⁸ being arranged coincident with, and operating in connection with the lateral bars or fingers. 20th The combination of a central longitudinal grate-bar which has two horizontal transverse perforations with a rear grate-section, which has two pairs of engaging-lugs, which are coincident with the two perforations in the central grate-bar, and a front grate-section which has a single pair of engaging-lugs, whereby when an operating lever is applied in one of the transverse perforations, the two grate-sections may be agitated simultaneously or the front section alone may be agitated, and whereby when the lever is applied in the other transverse perforation the rear section only of the grate may be agitated. 21st The combination of a central longitudinal grate-bar, which is supported at its ends upon suitable bearings, and which has two horizontal transverse perforations with a rear grate-section, which has two pairs of engaging-lugs, which are coincident with the two perforations in the central grate-bar, and a front grate-section which has a single pair of engaging-lugs, the two grate-sections resting upon suitable supports, whereby, when an operating lever is applied in one of the transverse perforations, the two grate-sections may be agitated simultaneously, or the front section alone may be agitated, and whereby, when the lever is applied in the other transverse perforation the rear section only of the grate may be agitated. 22nd The combination of a central longitudinal grate-bar D, which is provided with perforations d¹ and d with a rear grate-section D₁,

which has engaging-lugs d_{12} , d_{12} , which are coincident with the perforations in the central grate-bar, and a front grate-section D , which has a single pair of engaging-lugs d_1 , whereby, when an operating lever is applied in connection with the perforation d_1 and the lugs d_1 , the two grate-sections may be agitated simultaneously whereby, when the lever engages the perforation d_1 and the lugs d_1 , only the front section alone of the grate will be moved, and whereby when the lever is inserted in the perforations d_2 in connection with the lugs d_{12} , the rear grate-section D_2 may be reciprocated while the front grate-section will remain at rest. 23rd. The combination, with a central longitudinal grate-bar of two grate sections, each of which has a connecting-web and transverse bars upon the middle portion of its flat upper surface of each of which is a longitudinal transversely A-shaped or pyramidal agitating projection. 24th. The combination, with a central longitudinal grate-bar D , of a reciprocating grate-section D_1 and D_2 , each of which includes a longitudinal connecting-web, and transverse bars upon the middle portion of the flat upper surface of each of which is a continuous unobstructed transversely Y-shaped or pyramidal longitudinal projection d_{21} . 25th. In a grate, a grate-bar which is provided in the middle portion of its flat upper surface with a longitudinal agitating projection d_{21} , which in transverse section is pyramidal or A-shaped. 26th. In a grate, a grate-bar, the main portion of which is flat upon its upper surface, and which diminishes downwardly to the bottom of the bar, and which in the middle portion of such flat upper surface is provided with a transversely pyramidal or A-shaped portion, which extends unobstructedly from end to end of the bar. 27th. In a grate, the combination, with a connecting web of a grate bar, the main portion of which is flat upon its upper surface, and which diminishes downwardly from such surface to the bottom of the bar, and which in the middle portion of the flat upper surface is provided with a pyramidal double-inclined or A-shaped portion which extends in uniform dimensions from end to end of the bar. 28th. The combination, with a central longitudinal grate-bar, of a grate section which is provided with a connecting-web, and with a series of bars which are arranged crosswise upon such web and at right angles to the central bar, and each of which in its main portion diminishes in transverse extent from top to bottom. 29th. The combination, with a central longitudinal grate-bar D of a grate-section which embraces a connecting-web, and a series of grate-bars which extend across the connecting-web, and each of which in its main portion diminishes in transverse extent from top to bottom. 30th. The combination, with a central longitudinal grate-bar D , of a grate-section which embraces a connecting-web, and a series of bars, each of which in its main portion diminishes in transverse extent from top to bottom, and each of which upon its flat fuel-supporting surface is provided with a transversely pyramidal or A-shaped portion, which extends centrally along the bar from end to end thereof. 31st. The combination, with a central longitudinal grate-bar of a grate-section which is provided with a series of transverse bars, each of which is in its main portion tapered from top to bottom, and each of which is at its ends of rectangular form. 32nd. The combination, with a central longitudinal grate-bar D , of a grate-section D_1 , which is provided with a series of transverse bars d_{10} , each of which is in its main portion tapered from top to bottom, and each of which is at its ends of rectangular form, as and for the purpose described. 33rd. The combination of a central longitudinal grate-bar, a grate section which is provided with a series of transverse bars, each of which is in its main portion tapered from top to bottom, and each of which is at its ends of rectangular form in transverse section, and series of supporting-lugs corresponding with the transverse bars, and each diminishing in transverse extent from the top downwardly. 34th. The combination of a reciprocating grate, with a vertical end-plate, which is provided with a helving projection, which is coincident with the surface of the grate when the grate is in its operative position. 35th. The combination of a reciprocating grate, with a fuel-chamber, the end-plate of which is provided with a shelving projection, which is coincident with the surface of the grate when the grate is in its reciprocating position. 36th. The combination of a reciprocating grate, with a fuel chamber, the end-plate of which is provided with a shelving clearing-projection, the upper surface of which inclines from the top downwardly and inwardly toward the centre of the fuel chamber, and the lower surface of which is perpendicular to the vertical face of the end-plate, and projects over the ends of the grate at a point but a short distance above the same. 37th. The combination, with a central longitudinal grate-bar, of two oppositely placed grate-sections, and an end-plate which is provided with a shelving projection which closely overhangs each of the two grate-sections. 38th. The combination, with a central longitudinal grate-bar D , and two reciprocating grate-sections D_1 and D_2 , each resting upon the central longitudinal bar, of an end-plate A , of the fuel chamber which is provided with a shelving projection a_3 , which closely overhangs the central supporting bar and each of the two grate-sections. 39th. The combination, with an end-plate which is provided with an overhanging projection, which is coincident with the projection upon the end-plate, and a reciprocating grate-section which is closely overhung by each of the two projections. 40th. The combination, with an end-plate A_1 which is provided with an overhanging projection a_3 , of a grate-front or basket-portion E which is provided with an overhanging projection e_5 , which is coincident with the projection a_3 upon the end-plate, and a reciprocating grate-section D_2 which is closely overhung by each of the two projections. 41st. A grate, the front or basket portion E of which is provided with an overhanging projection e_5 , which operates in connection with the reciprocating portion of the grate to clear the surface of the same. 42nd. The combination, with a reciprocating grate, of a vertical end-plate, which is provided upon its interior face with a projection, the upper surface of which is inclined from the top downwardly, and the lower surface of which is perpendicular to the vertical face of the end-plate. 43rd. The combination, with a fuel chamber having a vertical grate-front, of a front-supporting rail which inclines from the top downwardly toward the rear, and which is provided with discharge-openings, and with pivoted weighted valves which operate to automatically discharge into the space below such openings of the contents of the fuel chamber so may be precipitated upon such supporting rail. 44th. The combination, in a grate, of a rear recip-

roating grate-section, a front reciprocating grate-section and an intermediate fixed grate bar, the grate-sections resting respectively at front and rear upon the grate bar. 45th. The combination, in a grate, of a rear reciprocating grate-section D_1 , a front reciprocating grate-section D_2 , and intermediate fixed grate-bar B . 47th. The combination, in a grate, of a rear reciprocating grate-section, a front reciprocating grate-section, and an intermediate fixed grate-bar which supports the front of the rear grate-section, and which supports also the rear of the front grate-section. 47th. The combination, with a grate which embraces a longitudinal connecting-bar or web, and a series of transverse grate bars, the ends of which have vertical sides of a fuel chamber, which embraces a series of supporting-lugs, which correspond with the transverse grate-bars, and which at their ends are diminished from the top to the bottom. 49th. A grate-bar which is provided with a lateral supporting-lug, the main upper surface of which is horizontal and which has at its outer extremity an upturned projection or engaging hook. 50th. In a fire-grate, a grate-bar which is provided with a lateral supporting-lug which has a flat horizontal upper surface, and an upturned hook, in combination with a grate-section, which has a bottom hook, which engages with and turns pivotally upon the supporting-lug of the grate bar. 51st. The combination, with the grate-bar D , provided with the supporting lugs d_1 , d_2 , of the grate-section D_2 , provided with end bottom hooks d_{12} , d_{12} , whereby it is adapted to engage and turn pivotally upon the supporting-lugs d_2 , as described. 52nd. A grate which is provided with a pair of downwardly extending bottom engaging lugs, and with a corresponding pair of flaring guide lugs contiguous to the engaging lugs, whereby, when an operating lever is applied it is directed with certainty to its engaging position. 53rd. The combination, with the grate-bar D having a transverse opening extending through the same from front to rear, of a rear grate-section D_2 , which is provided upon its under surface with engaging-lugs and with flaring guide lugs, substantially as and for the purposes set forth. 54th. The combination of a rear grate-section, a central grate-bar, a front grate-section, a supporting-rail which is provided with a slot, and an operating lever which engages with both the grate-sections, the central grate bar, and the slotted supporting-rail. 55th. The combination, in a grate, of a central grate-bar provided with a transverse perforation, a front grate-section, a rear grate-section, a fuel chamber which is provided with supporting-lugs for the front grate-section and for the rear grate-section, a supporting-rail which has a longitudinal slot, and a coincident adjustable stop, and an operating lever which engages with the walls of the slot in the supporting rail with each of the two grate-sections, and with the central perforated grate bar, substantially as described. 56th. The combination, with a fuel chamber which is provided with front and rear supporting-lugs, of a central grate-bar which has transverse perforations, a front reciprocating and dumping grate-section, a rear reciprocating and dumping grate-section, a supporting-rail which has longitudinal slots and coincident adjustable stops, and an operating lever which engages the central perforated grate-bar, the front grate-section, the rear grate-section and the slotted supporting rail, whereby when the operating lever is applied in one of the slots in the supporting rail, the two grate-sections may be dumped simultaneously, or the front grate-section may be dumped by itself, and whereby when the operating lever is applied in the other slot of the supporting-rail, the rear grate-section only may be dumped. 57th. The combination, with a reciprocating and dumping grate, and a supporting rail, which is provided with operating-slots, and with slidable stops which are adjustable either within or out of the slots, of a central bar which is fixed in position and which is provided with operating openings, and an operating lever which engages with the grate with the supporting rail and with the central bar, substantially as and for the purposes set forth. 58th. In a grate, a grate-bar, which is provided with a transverse perforation to receive an operating lever, with lateral agitating fingers and lateral supporting lugs, substantially as and for the purposes set forth. 59th. In a grate, a grate-bar D which is provided with a transverse perforation d_1 to receive an operating lever, and with lateral agitating fingers d_2 , and d_3 , and lateral supporting lugs d_4 and d_5 , as set forth. 60th. The combination of a reciprocating and dumping grate, which is pivotally supported at its rear, a vertical grate-front, and a front-supporting rail which is provided with a longitudinal slot, the walls of which serve as a bearing for an operating lever. 61st. The combination of a reciprocating and dumping grate, a vertical grate front E , and a front-supporting rail A_3 , which is provided with a longitudinal slot a_1 or a_2 , the walls of which serve as a bearing for an operating lever. 62nd. In a grate, a series of transverse bars, each of which is in its main portion tapered from top to bottom, and is at its ends of rectangular form. 63rd. In a grate, a series of transverse bars d_{10} or d_{11} , each of which is throughout its main portion tapered from top to bottom, and each of which is at its ends of rectangular form. 64th. The combination, with the grate-front E , of the supporting-rail A_3 having arms A_4 , secured, as described, to the lower portion of the grate-front, and forming in connection therewith an opening at for the passage of ashes and clinkers. 65th. The combination, with the grate-front E , of the supporting rail A_3 secured by its ends to the face-plates A_1 , A_2 , and having arms A_4 which are secured to the lower portion of the grate front, and which form in connection therewith the openings a_1 for the passage of ashes and clinkers. 66th. The combination, with the grate front E , of the supporting rail A_3 having openings a_1 for an operating lever, and supported at its ends by the face plates A_1 and intermediately by the connection of its arms A_4 with the lower portion of the grate front, as set forth. 67th. The combination, with the supporting rail A_3 , of the grate-front E , the arms A_4 having bearings a_2 , and the valves a_3 having eccentrically placed journals a_2 , as and for the purposes set forth. 68th. The combination of vertical end plates A_1 , A_2 , horizontally-projecting supporting lugs a_7 upon the end plates, upwardly-projecting hooks a_7 upon the supporting lug, and a grate-section, which is provided on its lower rear portion with a downwardly-projecting lug which terminates in a horizontally-projecting hook which engages behind the upwardly-projecting hook of the supporting lug, as and for the purposes specified. 69th. The combination of vertical end plates A_1 , A_2 ,

horizontally-projecting supporting-lugs *a7* upon the end plates, upwardly-projecting hooks *a7* upon the supporting-lug, and a grate-section *D1*, which is provided upon its lower rear portion with a downwardly-projecting lug *d5*, which terminates in a hook which engages behind the upwardly-projecting hook *a7* of the supporting lug *a7*, as described. 70th. The combination of a vertical end plate, which has a shelving projection, a supporting-lug below the shelving projection, and a reciprocating grate which is provided with a rear bottom hook, which engages with the supporting-lug, the upper surface of the grate when it is in its operative position being nearly in contact with the lower surface of the shelving projection. 71st. The combination of vertical end plates *A*; *A'*, having shelving projections *a3*, *a3*, a supporting lug *a7* below the shelving projections, and a grate which is provided with rear bottom hooks *d5*, *d5*, which engage with the supporting-lugs, the upper surface of the grate when it is in its operative position, being nearly in contact with the lower surface of the shelving projection. 72nd. The combination, with the vertical grate front *B*, of the supporting-rail *A3* secured to the face-plates *A*, *A*, and to the grate-front, and provided with openings for an operating lever. 73rd. The combination, with the grate front of an open fire grate, of a supporting-rail secured to the grate-front, and to the face plates at the sides of the grate-front inclined downwardly from front to rear and provided with self-closing valves. 74th. In a fire-grate, a grate section, which at each end at its rear extremity is provided upon its bottom surface with a downwardly-projecting engaging-hook. 75th. In a fire grate, a grate-section *D1* or *D2*, which at each end at its rear extremity is provided upon its bottom surface with a downwardly-projecting engaging-hook *d5* or *d5*.

No. 24,888. Grinding Mill. (*Moulin à Blé*.)

Mil J Althouse, Waupun, Wis., U.S., 6th September, 1886; 5 years.

Claim.—1st. In combination with the horizontal shaft and its grinding disk, a co-operating disk, and a weighted lever acting to urge said shaft onwise and maintain the separation of the disks. 2nd. In combination with the grinder shaft and the weighted lever, the intervening leather, substantially as and for the purpose described. 3rd. In combination, with the tempering screw and the bearing plate *J*, the supporting hub and the lining therein, constructed as described, to serve as a shaft bearing and also to retain the plate in place. 4th. In combination with the feed throat and the feed-screw therein, the flange to prevent material from being expelled in an upward direction. 5th. In combination, with the eccentric, the lever *K* embracing the wooden lining arranged with its grain onwise to the eccentric. 6th. In combination with the feed shoe, the actuating lever and the elastic bushing *T*, substantially as shown and described. 7th. In combination, with the hopper and the sliding gate therein, the pivoted button arranged to bear forcibly on the gate, whereby the gate is held frictionally in position. 8th. In combination, with the tempering screw, its support, the jam nut, and the nut operating handle removable therefrom, and arranged to hang upon the screw, substantially as and for the purpose described. 9th. In combination with the casing or body *E*, the hopper and the hopper sustaining arms *L*, constructed and arranged as described, their upper ends flanged and secured to the hopper, and their lower ends seated upon and bolted to the casing. 10th. The grinding disk, consisting of the hard metal disk or grinder proper, and the soft metal disk secured to its rear face. 11th. As a new product, a grinder composed of a front grinding disk of hard metal, with a suitable dress, and a back plate of softer metal secured permanently and rigidly thereto, said back plate having its rear face dressed in a plane parallel with that of the grinding face. 12th. In a grinding mill, the combination of a shaft *B*, a disk *I* secured rigidly therein and having a circular concentric recess with its face in a plane at right angles to its axis, and a grinding disk consisting of the hard and soft metal parts, constructed and united, as described, the soft metal part seated in disk *I*, as shown, whereby the grinding surface is maintained in the proper relation to the shaft. 13th. The herein described method of securing parallelism of the grinding surfaces of a disk mill, consisting in the following steps, first forming the two disks, each with a rear surface parallel with the grinding surface, second, revolving the disk receiving surfaces of the mill about an axis coincident with that of the operative disk subject to the action of a cutting tool, and forming therein concentric surfaces at right angles to said axis, and, third, seating and rigidly securing the backs of the disks against said surfaces. 14th. A grinding disk, provided with the feeding furrows, the diamond dress encircling the same, and the peripheral teeth having the abrupt forward faces and cutting edges, as described and shown.

No. 24,889. Service Pipe for Hydrants or Buildings, etc. (*Tuyau de Distribution pour Bornes-Fontaines ou Bâtimens, &c*.)

George B. Bassett, Watertown, N. Y., U. S., 6th September, 1886; 5 years.

Claim.—1st. The combination, with a water main of two lateral pipes connected at their outer ends and connected with the main in close proximity, as and for the purpose shown and set forth. 2nd. The combination, with a water main, of the lateral pipes communicating with their outer ends, and connected with the main in close proximity to each other, the diameter of the main between the two pipes being enlarged, as and for the purpose shown and set forth. 3rd. The combination, with a water main, of a casting or joint forming a part of the main, and having two openings or necks at one side near to each other, as and for the purpose shown and set forth. 4th. The combination, with a water main, and having a bulge or enlargement to one side formed with the apertures or necks near to each other, as and for the purpose shown and set forth. 5th. The combination, with a water main, of a casting or joint having two necks or apertures at one side in close proximity to each other, and two lateral pipes secured in the necks or apertures and having their outer ends communicating to form one continuous passage, as and for the purpose shown and set

forth. 6th. The combination, with a water main, of a casting or joint forming a part of the main, and having a bulge to one side formed with two apertures or necks close to each other, and two lateral pipes secured in the apertures or necks, and having their outer ends communicating to form a continuous passage, as and for the purpose shown and set forth. 7th. The combination, with a hydrant, of two lateral pipes opening with their ends in the lower end of the hydrant, and having their other ends secured to an opening into a main in close proximity to each other, as and for the purpose shown and set forth. 8th. The combination, with a hydrant, of two lateral pipes opening with their ends in the lower end of the hydrant, and a joint in a main having a bulge at one side, having the ends of the pipes secured to and opening into in close proximity to each other, as and for the purpose shown and set forth. 9th. The combination of a main, having a casting or joint formed with a bulge at one side, having two apertures or necks in close proximity to each other, a hydrant having two necks or apertures in the lower end outside of the valve, and two lateral pipes secured in the necks or apertures of the hydrant, and the casting or joint, as and for the purpose shown and set forth. 10th. The combination of a water main, a casting or joint having a bulge at one side, formed with two necks or apertures in close proximity to each other, a hydrant, a Y-shaped joint secured in the lower end of the hydrant, and two lateral pipes secured in the necks of the bulged casting or joint, and of the Y-shaped joint, as and for the purpose shown and set forth. 11th. The Y-shaped joint having a lip or web projecting from the crotch into the shank or main branch, as and for the purpose shown and set forth. 12th. In combination with a hydrant and a water main having two parallel lateral pipes extending from one side in close proximity to each other, a Y-shaped joint secured with its shank or main branch in the lower end of the hydrant, and with its branches in the ends of the pipes, and having a lip or web projecting from the crotch into the shank or main branch of the joint, as and for the purpose shown and set forth.

No. 24,890. Harvesting and Binding Machine. (*Moissonneuse-Lieuse*.)

Samuel Johnston, Brockport, N. Y., U. S., 6th September, 1886; 5 years.

Claim.—1st. In a harvesting machine, the combination of the platform and the binding devices with a pivoted vibrating collecting arm adapted to sweep across the platform from the grain side when collecting the cut grain, a reciprocating arm carrying a packer and adapted to receive the grain from the advancing collecting-arm and deliver it to the binder, the said packer being adapted to approach toward and recede from the collecting arm, reel arms or beaters to deposit each gavel upon the platform when the said packer and collecting arm are farthest from each other, and operating mechanism to actuate said parts whereby their movements shall be properly timed, substantially as and for the purpose specified. 2nd. In a harvesting machine, the combination of the platform and the binding devices, with a pivoted collecting-arm adapted to sweep across the platform from the grain side when collecting the cut grain, a reciprocating arm carrying a packer adapted to approach the collecting arm and receive the grain therefrom, and to retreat and deliver it to the binder, and a vibrating butting-board arranged to act upon the butts of the grain during its transit to the binder, substantially as and for the purpose specified. 3rd. In a harvesting machine, the combination of the platform and the binding devices, with a pivoted collecting-arm adapted to sweep across the platform while collecting the cut grain, a reciprocating arm carrying a packer adapted to approach the collecting arm from the other side of the platform and receive the grain therefrom, as said collecting arm advances, and then to retreat and deliver it to the binder, and a vibrating butting-board arranged to act upon the butts of the grain during transit to the binder, reel arms or beaters to deposit each gavel upon the platform when the said packer and collecting arm are farthest from each other, and operating mechanism to actuate said parts whereby their movements shall be properly timed, substantially as and for the purpose specified. 4th. In a harvesting and binding machine, the platform and cutters, in combination with the usual gathering reel or rakes to deliver the cut grain back upon the platform, collecting devices adapted to sweep across the platform and collect each gavel before the next succeeding one falls and deliver it to the binder, an adjustable butting-board hinged or pivoted to the machine by parallel bars, and operated by means of crank and pitman connected to the board between the points of connection of the bars with the board, substantially as described, to straighten the butts of the gavel during their passage to the binder and control the location of the band around the bundle, substantially as and for the purpose specified. 5th. In a harvesting machine, the platform, the binder and suitable rake or reel arms, to deliver the cut grain onto the platform, in combination with a collecting device to pass across the platform and deliver the grain to one side, leaving the platform clear for the next gavel, and a packer adapted to reciprocate between the binder and collecting device, said packer being provided with two sets of prongs or fingers, arranged one in advance of the other, each set acting on different gavels, whereby when one set is receiving the gavel from the collecting device, the other set is receiving the gavel previously acted on by the first set, and whereby both gavels are simultaneously advanced toward the binder, substantially as and for the purpose specified. 6th. A device for collecting cut grain and moving it over a platform of a harvesting machine, consisting of a vibrating arm to which one or more wheels, armed with fingers or teeth, are journaled, in combination with means to reciprocate said arm, and means to prevent the toothed wheels rotating in one direction, but allowing of their rotating in the other direction when passing the pivoted collecting arm, whereby the roll over the collected grain without disturbing it, and in moving in the opposite direction they are locked against rotation and move the cut grain with them, substantially as and for the purpose specified. 7th. In a device for collecting cut grain and moving it over a platform, the combination, with a reciprocating collecting-arm, of a vibrating arm to which one or more wheels armed with fingers or teeth are journaled, in combination with means to reciprocate said arm and means to prevent the toothed wheels rotating when the arm is moving toward the binder, springs or friction devices whereby

the rotation of the wheel is prevented when the arm is moving in the other direction, or gathering the grain, and until the resistance offered by the collected grain is greater than that afforded by the spring or friction devices when the wheels are allowed to rotate pass over the gavel, substantially as and for the purpose specified. 8th. A packer for a harvester and binder, consisting of a vibrating arm having its free end provided with toothed wheels, adapted to turn when passing the pivoted collecting-arm, and having pawls to prevent said wheels rotating when the arm is moved in the other direction, and projecting arms arranged in front of the wheels, and provided with gravitating pawls, whereby as the packer-carrying arm is moved the toothed wheels move the grain forward, and upon the next movement in the same direction the pawls push the grain still farther forward, thereby keeping each gavel separate and causing an extended movement of the grain with a limited throw of packer-carrying arm, substantially as and for the purpose specified. 9th. A packer for a harvester and binder, consisting of a vibrating arm, having its free end provided with toothed wheels adapted to turn when passing the pivoted collecting-arm, and having pawls to prevent said wheels rotating when the arm is moved in the other direction, and projecting arms arranged in front of the wheels and provided with gravitating pawls, whereby as the packer-carrying arm is moved the wheels move the grain forward and upon the next movement in the same direction, the pawls receive and push the grain still farther forward, thereby keeping each gavel separate and causing an extended movement of the grain with a limited throw of packer, in combination with a vibrating butting-board adapted to act upon the grain while in transit to the binder, substantially as and for the purpose specified. 10th. A packer consisting of the vibrating arm N, having toothed wheel X, provided with ratchet wheels X' and spring pawls Y, in combination with the arms W having gravitating pawls W', substantially as and for the purpose specified. 11th. The packer consisting of vibrating arm N, provided with toothed wheels X and arms W, provided with gravitating pawls W', in combination with the vibrating butting-board L hinged to links L', operating rod K', and crank K, substantially as and for the purpose specified. 12th. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W armed with gravitating pawls W', in combination with the vibrating butting-board L, hinged to links L', means to adjust the butting-board to or from the packer, operating rod K' and crank K, substantially as and for the purpose specified. 13th. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W armed with gravitating pawls W', in combination with the vibrating butting-board L hinged to links L', means to adjust the butting-board to or from the packer operating-rod K' and crank K, and means to vary the throw of the said butting-board, substantially as and for the purpose specified. 14th. The packer consisting of vibrating arm N, provided with toothed wheels X and arms W, provided with pawls W', in combination with vibrating butting-board L hinged to links L', operating rod K', and crank K, the platform P, vibrating collecting arm M provided with teeth m, gearing M² N² connecting the packer-carrying arm N, collecting arm M, crank O and link O' to vibrate said collecting arm, substantially as and for the purpose specified. 15th. The packer consisting of toothed wheels X and the projecting arms W, provided with pawls W' forming two sets of teeth to act upon the grain, in combination with the binder or needle arm, and the guard U² under which the packer works and through which the needle arm descends, substantially as and for the purpose specified. 16th. The packer consisting of toothed wheels X, and the projecting arms W provided with pawls W', forming two sets of teeth to act upon the grain, in combination with the binder or needle arm, the vibrating collecting arm M adapted to sweep the grain across the platform to the packer, and tooth Z on the platform over which the grain is swept by the gathering arm, and by which it is prevented from moving back while the packer carrying and gathering arms recede to gather and carry a fresh gavel to the binder, substantially as and for the purpose specified. 17th. The combination of the collecting arm M, the packer-carrying arm N and the needle arm, and the device for starting said needle arm and operating mechanism whereby the collecting the packer-carrying and the binder arms are caused to work in unison, so that the needle-arm shall descend between the arms W, W, W while holding the complement of grain for one bundle, and before the first gavel for the next bundle is delivered to the binder, substantially as and for the purpose specified.

No. 24,891. Fifth-Wheel for Carriages, etc.

(*Rond d'Avant-train de Voiture, etc.*)

Joseph V. Alexander, Taylor's Chapel, Tenn., U. S., 6th September, 1886; 5 years.

Claim.—1st. The combination, with the socket having end openings or slots, and the ball having a radial slot extending through it, and outward from centre to periphery of the axle, and its attached block having a segmental form which adapts it to fit in and fill said slot, as shown and described. 2nd. The combination, with the ball having a slot or recess, of the axle having a corresponding construction which adapts it for detachable connection with said ball, as shown and described. 3rd. The combination, with socket and ball having a radial slot, of the axle having a central portion which fits in said slot and whose ends coincide and are flush with the spherical surface of the ball, as shown and described for the purpose specified.

No. 24,892. Metal Fencing, etc.

(*Clôture Méallique, etc.*)

William Orr, Glasgow, Scotland, 6th September, 1886; 5 years.

Claim.—1st. In metal fencing standards and droppers, composed of pieces of incomplete section, or having a slot extending throughout the whole or a portion of the length, the wires or bars and staves or thrust plates being held by fasteners passing out through the slot from within the tube, substantially as hereinbefore described and illustrated under several examples on the appended drawings. 2nd. In metal fencing, the several standards or fasteners hereinbefore described with reference to the drawings annexed, for the wires or bars when such fasteners are used with standards or droppers, con-

structed as set forth. 3rd. For telegraphic and telephonic purposes, posts and fasteners for the arms carrying the wires, constructed substantially as hereinbefore described. 4th. In conjunction with straining posts or standards for metal fencing, the several straining or winding drum arrangements hereinbefore described with reference to Figs. 20 to 25 inclusive of the drawings.

No. 24,893. Car-Coupling. (*Attelage de Chars.*)

George L. Walton, Bougere, La., U. S., 6th September, 1886; 5 years.

Claim.—1st. A coupling for cars, constructed, arranged and operating substantially as herein described and shown, consisting of the combination with the draw-head B, the elliptic springs C and pivoted draw-bolt D, as and for the purpose set forth. 2nd. In a coupling for cars, the elliptic springs C, placed longitudinally in the draw-head B on either side of a draw-bolt D, and secured to the upper side of the draw head so that their lower sides may bear upon the coupling link H, and to spring on its pivot to automatical couple the connecting link, substantially as herein described and shown.

No. 24,894. Washing Machine.

(*Machine à Laver.*)

Nelson C. Baughman, (Administrator of the estate of Leander Becker), York, Penn., U. S., 6th September, 1886; 5 years.

Claim.—1st. The combination, with the tub or box, of the vibrating handle, the arms extending down into the box, the rubber hung by a pivotal connection upon said arms, and the other rubber pivoted to the sides of the box, and connected to the first named rubber by the arms, whereby when the handle is operated, a back-and-forth and slightly oscillatory motion is given the first-mentioned rubber, and a reciprocating circular motion is given the other rubber, substantially as described. 2nd. The combination, with the tub, of the vibrating handle, the arms connected to the handle and extending down into the tub, the rubber C having the rear sockets on its heads for receiving the pivots of the levers, and having the forwardly extended arms, and the rubber D having its heads pivoted to the sides of the box, and having the socketed arms with which the forwardly extended arms of the rubber C are connected by a jointed connection, substantially as described.

No. 24,895. Protector for the Soles and Heels of Boots and Shoes. (*Protecteur pour les Semelles et les Talons des Chaussures.*)

Eleazer Kempshall, New Britain, Ct., U. S., 6th September, 1886; 5 years.

Claim.—1st. An imbedded protector having an enlarged base, as described, situated inward, as described, with a heel, substantially as described. 2nd. An imbedded protector having an enlarged base, as described, situated inward, as described, with a sole, substantially as described. 3rd. The improved protector, provided with a filling, constructed and arranged substantially as described for the purposes set forth. 4th. In the construction of protectors, for the purposes set forth, the combination of the hollow portions a, necks b and projections c, substantially as described. 5th. The improved form of protector having body a, and flange a' constructed and arranged substantially as described for the purposes set forth.

No. 24,896. Combined Flour Box and Sifter.

(*Berniquet et Sas Combines.*)

William C. Marr, Onawa, Iowa, U. S., 6th September, 1886; 5 years.

Claim.—1st. A combined flour box and sieve, comprising the casing A provided with the slot b, the adjustable cover b' arranged to close the slot, the removable partition B adapted to be inserted through the slot and to fit closely against the walls of the box, the sieve-drawer C constructed to fit closely against the walls of the box, and the agitator B' arranged above the sieve, all substantially as and for the purpose described. 2nd. A combined flour box and sieve comprising the casing A, having the slot b, the adjustable cover b' arranged to close the slot, the removable partition B adapted to be inserted through the slot and fit closely against the walls of the box, the sieve-drawer C constructed to fit closely against the walls of the box, the agitator B' arranged above the sieve, and the worm-conveyor D arranged in a chamber below the sieve, substantially as and for the purpose described.

No. 24,897. Knitted Cap. (*Casquette Tricotée.*)

Carl Freschl, Milwaukee, Wis., U. S., 6th September, 1886; 5 years.

Claim.—A cap composed of a single piece of circular or hose-like knitted fabric, having a loose stitch throughout except in that part of the fabric which forms the top of the cap, which part has a close stitch, the end of the fabric being closed up at the top of the cap, which top of the cap is flat, or nearly flat without plaits, seams or puckering wrinkles, the sides of the cap being double (the fabric being doubled upon itself) and provided with a band thereabout, the double fabric being doubled upon itself forming this band and a lining, which is attached to the knitted fabric on the inside, all substantially as described.

No. 24,898. Krotophone. (*Krotophone.*)

Samuel A. Barnes, Philadelphia, Penn., (assignee of Edward S. Spaulding, New York, N. Y.), U. S., 6th September, 1886; 5 years.

Claim.—The method, herein described, of transmitting sounds electrically, which consists in conducting an electric current to a given point, and then dispersing said current electrically so as to produce and amplify the crepitations, substantially as herein described.

No. 24,899. Belt Gearing.*(Engrenage à Courroie.)*

The Knickerbocker Company, (assignee of Orville M. Morso), Jackson, Mich., U.S., 6th September, 1886; 5 years.

Claim.—1st. The combination, with a wheel, which is positively geared with a belt, of belt-supporting wheels capable of independent relative movement with reference to the geared wheel, substantially as set forth. 2nd. The combination of a sprocket-wheel and belt-supporting rings, capable of differential rotative movement with reference to each other, substantially as set forth. 3rd. The combination of a sprocket-wheel and belt-supporting rings arranged side by side, with the face of the belt-supporting ring projecting beyond the face of the sprocket-wheel, substantially as set forth. 4th. The combination, with a shaft *a*, of sprocket-wheel *E* secured to said shaft, and belt-supporting pulleys mounted loosely on said shaft, substantially as set forth. 5th. The combination, with a belt, of metallic sprockets provided with sound-deadening washers, substantially as set forth. 6th. The combination, with a sprocket-wheel *E* and belt-supporting rings *F*, capable of differential rotative movement, of an endless belt *C* provided with sprockets *d*, having approximately the form of truncated cones, substantially as set forth. 7th. The combination, with a belt, of a sprocket *d* provided with a sleeve *d*⁵, fastening bolt *d*⁴ and sound-deadening washer *d*⁴, substantially as set forth.

No. 24,900. Spark Arrester. *(Arrête-Flammèche.)*

Hunter Bruce, St. Thomas, and Isaac H. Radford, Toronto, Ont., 6th September, 1886; 5 years.

Claim.—1st. A smoke-stack having a bell-mouthed pipe *A* inserted in it, so as to leave a space between the case *B* and the said bell-mouthed pipe *A*, the combination of the cone *C* suspended from the deflecting-plate *D*, which is supported from the top of the bonnet *E* by the bolts *F*, substantially as and for the purpose specified. 2nd. The deflecting-plates *D*, *G* and *H*, supported from the top of the bonnet *E* by the bolts *F* having adjusting nuts *a* on them, in combination with the inverted cone *C* suspended from the plate *D* within the bell-mouth of the pipe *A*, substantially as and for the purpose specified.

No. 24,901. Station Indicator for Railway Cars. *(Indicateur de Station pour Chars de Chemins de Fer.)*

William W. Currie, Smith's Falls, Ont., 7th September, 1886; 5 years.

Claim.—1st. In a station indicator, the rollers *F*, *F*¹, provided with notches, and the drums *D*, *D*¹, provided with ratchets *K*, *R*, in combination with levers *P*, *P*¹, having points to enter the notches and ratchets, and adapted to be lifted for starting the machine, and to automatically stop the machine, substantially as described. 2nd. The combination, with the lever or pivoted arm *O*, for reversing the machine, of the panel *S* attached to the arm and held against the face of the device, substantially as and for the purposes described. 3rd. The combination, with the shifting lever *O*, of the eccentrics *A* above and below the lever for raising and lowering it, substantially as described. 4th. The combination, with the drums *F*, *F*¹, of the gear wheels *H*, *I*, *J*, *K* and *L*, and spring *G*, of the gear-wheels *H*, *I* and *J* being journaled upon a shifting arm *O*, substantially as and for the purposes described. 5th. The face *B* having the spots *b*, *c*, in combination with the ribbon *C* having the terminal distances and station marked upon it, substantially as described. 6th. The combination, with the drums *F*, *F*¹, and spring *G*, of the gear-wheels *H*, *I*, *J*, *K*, *L*, *M*, and *N*, and the wheels *H*, *I* and *J* being journaled on the shifting arm *O*, substantially as and for the purposes set forth.

No. 24,902. Ironing Table. *(Table à Repasser.)*

George Race, Norwich, N.Y., U.S., 7th September, 1886; 5 years.

Claim.—1st. In an ironing board, the combination of 1st. top, a block or strip *B* secured rigidly thereon near one end, legs *B*¹, fitted thereto, longitudinal guides or ways *C*, *C* arranged on the bottom or top at a short distance from each other, and having inwardly projecting blocks *c*, *c* at their ends, a recessed block *D* fitted on said ways and adapted to slide thereon, legs *E* pivoted to said guiding block or strip *D*, and the legs *B* and a strip *h* secured to the sliding block *D* and adapted to fit between the inwardly projecting blocks *c*, *c* of the guides or ways, when the legs *E*, *B* are unfolded, substantially as and for the purpose set forth. 2nd. The combination, in an ironing board, with a top having supporting legs, and provided with slots *b*, *b* enlarged heads, of a bosom board having headed pins to engage the same, a shoulder or plate on the under side of said top, and a button pivoted to the bosom board, substantially as set forth. 3rd. The combination, in an ironing board, with a top having suitable supporting legs, and elongated slots provided with enlarged ends, of a bosom board having headed pins to engage the same, a plate or shoulder on the under side of said top, and pivoted button on the under side of the bosom-board, and a pin on said bosom-board adapted to engage an opening in the top, substantially as set forth. 4th. The combination, in an ironing board, with a top provided with supporting legs, of a removable ironing board, a removable bosom-board recessed to receive the end of the top, a pin on said ironing board to engage a recess in the top, a plate or shoulder on the under side of said top, and eccentrically-pivoted button pivoted to the bosom-board to engage the same. 5th. In an ironing board, the combination, with a top having slots at its front end, of a removable ironing board *F*, a sliding bosom board *G*, a wedge or rod fitted in an opening between said top and adapted to clamp the article being ironed in position, and a pivoted button adapted to lock the bosom-board and top together, substantially as and for the purpose set forth.

No. 24,903. Axle Box Collar.*(Collet de Boite à Graisse.)*

Ebenezer Partridge, Birmingham, Eng., 7th September, 1886; 5 years.

Claim.—1st. The back revolving colling-shaped collar *E*, grease chamber *I*, notches *U* on the front inner edge, either as a complete collar or with a removable piece, as at figures 1 and 3, for attachment to the back end *D* of an axle box *C*, as and for the purpose described. 2nd. The sliding plate *P* for locking said front, adjustable inner edge notched back, revolving collar *E* of axle boxes with the recessed or cleared screw bolt *I* for moving said plate *P* to and fro, as described. 3rd. Recessing the back face of an axle box to that the sliding plate *P* may be screwed thereon, for locking or releasing a back revolving collar, whether of the construction before referred to or any other back revolving collar which has notches for inner adjustment as the leather washer wears away, or whether used plain or in connection with any machine requiring revolving collars having notches.

No. 24,904. Gate. *(Barrière.)*

John Hughesdon, Carlin, Nev., U. S., 7th September, 1886; 5 years.

Claim.—The combination of a gate, the rear end piece of which is hollow and provided with a door at its bottom, two posts having a screw-threaded cross-piece at their tops, said posts being set at an angle to each other, an adjustable supporting-screw through said cross-piece having a supporting chain swivelled to its lower end, and a post having a notched pin upon one of its sides, as shown and described.

No. 24,905. Cabinet for Paper Sheets and Bags. *(Buffet pour Feuilles et Sacs de Papier.)*

Joseph A. Pritchard, Fenelon Falls, Ont., 7th September, 1886; 5 years.

Claim.—1st. The combination, in a cabinet, of a shelf or drawer, and a reciprocating frame to drag when pulled and roll when automatically receded from the front, as set forth for the purpose described. 2nd. The combination, in a cabinet, of a drawer *B* having a rail *P*, provided with a spring *G*, roller *H* having ratchet *K*, and a yoke *I* having a pawl *L*, handle *J* and stop *K*, as set forth. 3rd. The combination, in a cabinet, of a drawer *B* having a rail *P*, and provided with hook *E*, and reciprocating yoke *I* having a roller *H* to alternately drag and rotate, as set forth.

No. 24,906. Belt Fastening. *(Joint de Courroie.)*

Timothy Gingras, Buffalo, N. Y., U.S., 7th September, 1886; 5 years.

Claim.—The combination, with the bolting *A*, *A*¹, of metallic staples or fastenings *B* having a centre portion *b* and pointed ends *b*¹, *b*¹, and connecting the two ends of the belt by inserting the pointed ends of each alternate staple from opposite sides of the belt, whereby the centre portion of each alternate staple will cross the joint on opposite sides of the belt and clinching the pointed ends, substantially as set forth.

No. 24,907. n Plough. *(Scarificateur.)*

John Draper, Whitby, Ont., 7th September, 1886; 5 years.

Claim.—The combination of the ratchet lever 2, loose segment 3 and fixed segment *A*, axle *B*, bracket *C*, connecting rod *D*, latch *E* and spring *H*, substantially as and for the purpose hereinbefore set forth.

No. 24,908. Die and Swage for Forging Hammers, etc. *(Matrice et Élampe pour Forger les Marteaux, etc.)*

Henry H. Warren, Cote St. Paul, Que., 7th September, 1886; 5 years.

Claim.—1st. The combination of the die *A* having surface *G*, guide *B* and swage *F*, constructed, arranged and operating substantially as described. 2nd. The combination of the die *A* having surface *G* and rest *H*, guide *B* and swage *F* having side projections *Q*, the whole substantially as described. 3rd. The combination of the die *A* having surface *G* and projection *R*, guide *B* and swage *F*, substantially as described. 4th. The combination of the die *A* having surface *G*, and projections *A*¹ and *R*, with guide *B* and swage *F* having side projections *Q*, substantially as described. 5th. The combination of the die *A* having surface *G* and projections *A*¹ and *R*, guide *B*, swage *F* having side edges or projections *Q* and rounded end *P*, guide *L*, the whole substantially as described.

No. 24,909. Floor Mop. *(Torchon à Parquet.)*

Ezekiel B. Ketchum, St. John, N.B., 8th September, 1886; 5 years.

Claim.—The combination of the handle *E*, with the tube *D*, with the screw *H* and the clamp *A* connecting the mop *C* around the bow *B* the whole being held in position when adjusted by the spring *f*, the whole in place adjusted and combined as described in the specification, substantially as and for the purposes therein set forth.

No. 24,910. Bleaching and Apparatus therefor. *(Blanchiment et Appareil pour cet objet.)*

Eugène Hermite, Rouen, France, 8th September, 1886; 5 years.

Claim.—1st. The employment for bleaching purposes generally of the chemical reaction resulting from the decomposition by electrolysis of chloride of magnesium, calcium, and aluminum, preference being given to chloride of magnesium. 2nd. The arrangement of the troughs or vats with sets or electrodes for bleaching, with rollers or with frames, as hereinbefore described and for the purposes set forth.

No. 24,911. Can Opener.*(Cisailles à Boîtes Métalliques.)*

Henry R. Bothwell, Toronto, Ont., 8th September, 1886; 5 years.

Claim.—1st. A can opener, constructed of any suitable material, the cutter preferably of steel and fitted on a square seat formed on the neck of the device, as shown and described. 2nd. A can opener A, composed of the handle *b*, cutter *c*, neck *e*, and fulcrum *f*, as shown and described. 3rd. In a can opener A, composed of the handle *b*, cutter *c*, neck *e* and fulcrum *f*, the combination of the knife *d*, as shown on the handle *b*, arranged and operating substantially as set forth.

No. 24,912. Steam Engine Lubricator.*(Graisseur de Machine à Vapeur.)*

Warren H. Craig and David F. Robinson, Lawrence, Mass., U. S., 8th September, 1886; 5 years.

Claim.—1st. In a sight-feed lubricator, the combination of the following: a condenser, a steam pipe leading thereto, and a pipe leading from the condenser through the oil reservoir to a shank or support below such reservoir, with means of communicating with the top of the oil reservoir, the construction being such below the oil reservoir that the incoming steam and outgoing oil will not commingle, such separate passages being formed in the metal of such shank and oil reservoir, substantially as shown or described. 2nd. The combination, with a lubricator having a condenser and oil reservoir, with means of communication, of a column cast through such reservoir, with steam and oil passages arranged therein, one for the discharge of steam to the condenser and one for the discharge of steam and oil, the latter passage having a duct leading from such passage to the bottom of a sight feed chamber, all being substantially as represented. 3rd. In a lubricator of the character described, the shank *k* being formed therein, a steam inlet *c*, it being concentric with and connecting to a passage formed integral with the lubricator, for the conveyance of steam from the boiler to the condenser, such shank being recessed at its junction with the cup, in such a manner as to communicate with the passage *j* and the oil discharge *m*, substantially as shown and described. 4th. In a sight-feed lubricator having an oil reservoir and condenser, the combination of the passage *C*, passage *J* and *b*, and sight-feed glass *X*, passage *W*, valve *X* and passage *U*, all being for the purpose set forth. 5th. The shank *k*, provided with the passage *M* and *C*, its valves *G* and *P*, in combination with the oil reservoir *A*, its passages *C* and *J* and condenser *B*, substantially as described. 6th. The combination, with an oil reservoir having a column *h* cast therein, and a passage *C* to lead steam to the condenser, of the passages *J* and *Ji* to lead such steam from the condenser *o* to the oil discharge passages *M* and *Mi*, such passages having means of communication with the sight-feed chambers and oil reservoir, substantially as set forth. 7th. The combination, with a lubricator having a condenser and observation chamber and oil reservoir, of the passage *C* passing through such reservoir, this passage having a check valve *I*, and also having a pipe leading out of the condenser and communicating with the oil reservoir and oil discharge passages, substantially as set forth. 8th. In a sight-feed lubricator the combination of the shank *k* having steam and oil passages passing through the same and separate and distinct from one another, of a recess within such shank into and out of which one of such passages opens, all being substantially as set forth.

No. 24,913. Stocking Supporter. (Jarretière.)

The Willard Manufacturing Company (Assignee of Rodney S. Willard (St. Albans, Vt., U.S., 8th September, 1886; 5 years.

Claim.—A stocking-supporter, of the character specified, provided with parallel spring-holding wires, and an elastic eye and a band loosely surrounding the parallel wires above the eye, substantially as described.

No. 24,914. Leather Washer. (Rondelle en Cuir.)

Timothy Gingras, Buffalo, N.Y., U.S., 8th September, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a leather washer consisting of an annular ring, having an abutting joint secured together by a metal staple, substantially as set forth. 2nd. The leather washer herein described, consisting of a strip of leather *A* bent to the desired form, and having its abutting ends secured together by a metal staple *B*, substantially as set forth.

No. 24,915. Waggon. (Wagon.)

James T. Burdick, Friendship, N. Y., U. S., 10th September, 1886; 5 years.

Claim.—1st. In a waggon, the combination, with the stationary frame or bottom frame *A*, provided with a seat *B*, of the box or body *D* detachably secured to the bottom or frame *A*, substantially as set forth. 2nd. The combination, with the stationary frame *A*, provided with a seat *B*, of the body or box *D* provided with a seat *E*, and detachably secured to the frame *A*, substantially as set forth. 3rd. The combination, with the frame *A*, provided with ears or supports *f*, of the removable box *D* provided with recesses or openings engaging over said ears or supports, substantially as set forth. 4th. The combination, with the frame *A*, provided with ears or projections *f*, of the body *D* supported by the said ears or projections, and means, substantially as described, whereby the box *D* is removably secured to the frame *A*, substantially as set forth. 5th. The combination, with the frame *A*, provided with ears or supports *f*, of the removable box *D* having recesses or openings engaging over said supports, and turn buttons *i*, substantially as set forth.

No. 24,916. Machine for Making Sand Moulds for Casting Metals. (Machine à Faire les Moules en Sable Maignre de Fonderie.)

Matthew R. Moore, Indianapolis, Ind., U.S., 10th September, 1886; 5 years.

Claim.—1st. A group of separately movable rammers in contact with each other, in combination with an enclosing casing and provisions for admitting fluid under pressure to act upon the whole, substantially as herein specified. 2nd. A group of separately movable rammers in contact with each other, in combination with an enclosing casing and with provisions for admitting a fluid under pressure to actuate them, and with springs to move the rammers in the opposite direction, substantially as herein specified. 3rd. A group of separately movable rammers, in contact with each other, an enclosing casing, provisions for actuating by fluid and springs, in combination with each other, and with means, as the nuts *es*, for adjusting the force of the springs, as herein specified. 4th. A group of separately movable rammers in contact with each other, in combination with an enclosing casing, and means for admitting fluid under pressure, and with packing arranged to perform the double functions of keeping the rammers in contact with each other and of maintaining a tight joint between the rammers and the casing, as herein specified. 5th. The combination, with the frame *A*, packed as shown, of the rammers *c* in contact with each other, springs *E* and adjusting means, as *e*, *es*, the rammers being arranged to be operated by fluid pressure, and the whole adapted for joint operation in making moulds for castings, as herein specified.

No. 24,917. Machine for Making Sand Moulds for Casting Metals. (Machine à Faire les Moules en Sable Maignre de Fonderie.)

Matthew R. Moore, Indianapolis, Ind., U.S., 10th September, 1886; 5 years.

Claim.—1st. A group of bars *c, e*, arranged to move independently, in combination with provisions for allowing the same to act by their gravity in effecting a uniform compression of moulding sand, substantially as herein specified. 2nd. A group of separately movable rammers, having different weights arranged to act by their gravity, with varying degrees of force in compressing moulding sand, as herein specified. 3rd. A group of separately movable rammers arranged to act independently by their gravity, in combination with duplicate moulding benches, and with provision for presenting the said rammers thereto in succession, substantially as herein specified. 4th. A group of separately movable rammers carried on a revolving frame, in combination with a sand-hopper, and chute arranged to serve by alternately supplying and ramming sand in flasks in one or more moulding benches substantially as herein specified. 5th. A horizontally movable plate made in sections, arranged to act to different extents, and a horizontally movable sand hopper, in combination with each other and with one or more moulding benches or machines with which they may be operated in succession, substantially as shown and described. 6th. A group of separately movable rammers or bars, arranged to act by their gravity, in combination with means for presenting a flask and pattern with sand thereto, and with a silhouette plate matching the pattern, all arranged for joint operation substantially as herein specified. 7th. The combination of a cylinder, as *O*, a plunger or piston, as *M*, and a valve, as *V*, with parts *E*, *I*, *I*, *K*, *L*, *P*, *Q*, *R* and *S*, in connection with flasks and sand arranged to operate the patterns, and ram the moulds by means of fluid pressure, substantially as described. 8th. The combination of a cylinder, as *O*, a platen, a flask and support, a pattern, or a pattern and silhouette plate, a plunger or piston, as *M*, and a valve, as *V*, with a hollow base plate, as *A*, serving as a reservoir for fluid under pressure, substantially as specified.

No. 24,918. Sash Fastener. (Arrête-Croisée.)

Frank A. Bascom, Greenville, Penn., U. S., 10th September, 1886; 5 years.

Claim.—In a window sash fastening or supporting device, the combination, substantially as set forth, of the housing *C*, the actuating lever *D* having an internally screw-threaded cylindrical head *D* journalled in said housing, and the externally screw-threaded bolt *E* fitting in said head *D*, and having a presser plate *E* at its outer end.

No. 24,919. Plumber's Trap.*(Soupape de Latrines.)*

James Morrison, Toronto, Ont., 10th September, 1886; 5 years.

Claim.—A plumber's trap, made of spun metal, and provided with the union points *D* and *E* to connect with the pipes *B* and *C*, substantially as and for the purpose specified.

No. 24,920. Spring Tooth Harrow.*(Herse à Dents Élastiques.)*

Charles La Dow, Albany, N.Y., U.S., 10th September, 1886; 5 years.

Claim.—1st. A harrow frame, composed of the spring bars *A*, *A'* crossing each other, and spring-teeth mounted on the bars at their junction with each other, in combination with means adapted to clamp the teeth and bars together. 2nd. A sectional harrow-frame, consisting of the elastic bars *A*, *A'*, crossing each other, spring-teeth mounted on the bars at their point of junction with each other and hinges between the sections. 3rd. A harrow-frame, composed of the elastic bars *A*, *A'* crossing each other, diagonally spring-teeth mounted on the bars and supported solely from the points where the bars cross each other, and means adapted to unite the bars and teeth at their point of junction. 4th. A harrow-frame, composed of bars crossing each other, teeth mounted on the bars so as to be supported from the points where the bars cross each other, and clamp-bolts arranged in two opposite angles formed by the crossing bars which hold the bars relatively to each other without being perforated or embedded into each other. 5th. A jointed harrow-frame and spring-teeth, in combination with wheels adapted to balance the sections, and also to cut into the ground so as to prevent swerving of the harrow-frame. 6th. The combination of a harrow-frame, spring teeth thereon adapted to hook into the earth as they are drawn forward, and a pole

pivoted thereto so as to swing laterally, substantially as described. 7th. In a harrow, the combination of the bars A, A', spring-teeth B, supporting wheels C, C', the cranked rods T, T', the lever J and the link K. 8th. A harrow frame, composed of flat metal bars A, A', teeth mounted on the bars at the points where they cross each other, in combination with clamp bolts formed independently of the teeth, which prevent the bars from having end motion relatively to each other and permit adjustment of the pitch of the teeth. 9th. In a harrow, a sectional frame adapted to conform inequalities of surface spring-teeth vibrating on the sections, and wheels or other supporting devices having contact with the ground at three or more points sections, in combination with mechanism, whereby the sections can be simultaneously raised or lowered on their supporting devices.

No. 24,921. Method for Obtaining Oil from Wells. (*Mode de Tirer l'Huile des Puits*.)

Tbursten G. Hall, Chicago, Ill., U. S., 10th September, 1886; 5 years.

Claim.—1st. The herein described method of refining oil in the well, which consists in injecting into the well steam charged or impregnated with a bleaching or refining agent, substantially as set forth. 2nd. The herein described method of refining oil in the well, which consists in applying a suitable bleaching or refining agent to the oil in the well, substantially as set forth. 3rd. The herein described method of producing refined oil, which consists in injecting into the well steam charged with a bleaching or refining agent, and then separating the more volatile from the less volatile component hydro-carbon, combinations by distillation, substantially as set forth.

No. 24,922. Street Car. (*Char de Tramway*)

Martin A. Cutter, Galveston, Texas, U. S., 10th September, 1886; 5 years.

Claim.—1st. In a revolving street-car, the combination of the body, provided with an annular flanged circle-plate secured to its bottom, and enclosing the brake-operating devices with the annular supporting or truck frame provided with wheels placed tangentially to the radius of said annular frame, carrying the flanged circle-plate and further connected therewith by clamps secured to the truck-frame and embracing the flanged circle-plate, as set forth. 2nd. In a revolving street-car, the annular truck-frame, provided with four radially-placed projections, each of which carries the two depending jaws, of a pedestal formed to receive an axle-box, said jaws being integral with said frame, as and for the purpose stated. 3rd. In a revolving car, the annular truck-frame provided with forward and rear extension terminating in upwardly-projecting catch-pins, in combination with the horizontally-sliding catch-block, its attached rod and the bell-crank lever, and stop-plate pivoted to the platform-floor, and arranged to operate in the manner and for the purpose specified. 4th. The annular truck-frame, provided with radially-extending projections having parallel arms which extend downward and form the jaws of the pedestals, in combination with axle-boxes having free vertical play between said jaws, and springs secured to the truck with their ends resting upon the axle-boxes between the jaws, substantially as and for the purpose specified. 5th. An annular truck-frame, provided with pairs of vertical arms connected at the bottom by a slotted or dovetailed bar, said parts being made integral with the frame, in combination with the brakes having projecting tongues sliding in said slots or dovetails, the parts being arranged and operating as set forth. 6th. In a revolving street-car, the annular truck-frame, provided with brake holding and guiding devices, as described, in combination with the brake-operating mechanism consisting of pairs of slotted levers connected by bars, a vertically moving block, links connecting said bars and block, and means for operating said block, as specified. 7th. In a revolving street-car brake, the truck-frame, as provided, with brake supports and guides, the brake-bars I, I', the block J and links connecting said block and bars, in combination with centrally placed standard K, the lever K', bell-crank hand-lever L and rod connecting said hand-lever with the lever K, all arranged as shown and described to operate the brakes from the driver's platform. 8th. As an improvement in street-cars and railways for the same, the combination of the cars having suitable switch-operating devices, as described, with the movable switch-rail elbow lever or cam pivoted to one of the main rails and connected to the switch-rail, and an independent cam pivoted to the outer rail and acting directly upon the switch-rail, as shown and described.

No. 24,923. Combined Label and Holder.

(*Etiquette et Attache-Etiquette Combinés*.)

William Rambo, jr., Ottawa, Ohio, U. S., 10th September, 1886; 5 years.

Claim.—1st. A price indicator for boxes and other receptacles provided with vertical sides of a body made from cardboard or other flexible material, and provided integrally at its lower portion with a straight projecting tongue adjacent to the upper portion of which are formed slots presenting a short side piece at either side of said tongue, substantially as shown. 2nd. In an indicating tag or card for boxes and other receptacles having straight vertical sides, of a body made from cardboard or other flexible material, and having figures or emblems printed thereon, and provided at its lower portion with a downwardly-projecting straight tongue, adjacent to which are open slots presenting side pieces shorter than the said tongue, the parts being formed integral with each other and from a single piece of material, substantially as shown.

No. 24,924. Rock-Drilling Machine.

(*Machine à Percer le Roc*.)

Nathan C. Pond, Marshall O. West and Ernest Simons, Port Chester, N. Y., U. S., (assignees of Simon Ingersoll, Glen Brook, Ct.) U. S., 10th September, 1886; 5 years.

Claim.—1st. The combination, in a rock-drilling machine, of legs

having balls at their upper ends, a frame having partial sockets near its lower corners to receive the said balls, cheek pieces each shaped with a heel at one end to rest on the said frame, a partial ball socket near the other end, and a binding screw fitted through each cheek piece into the frame between the heel and the socket, substantially as shown and described. 2nd. The combination of the crosshead, the spindle journaled therein, the throwing spring on the spindle, the shaft having mated cranks and straps or other flexible connections between the crosshead and the said cranks, as described. 3rd. The combination of the spindle, its throwing spring, the crosshead, the shaft having mated cranks, flexible connections between the cranks and crosshead, a hand crank wheel loosely journaled on the shaft, and a pawl and ratchet wheel connection between the wheel and shaft, as described. 4th. The combination of a frame having vertical ways, a carriage fitted to slide on the ways, a drill spindle journaled to rotate and to slide vertically in the said carriage, a shaft journaled across the carriage and having mated cranks, a crosshead loosely, the spindle, flexible connections between the crosshead and cranks, and a spring for throwing the spindle, as described. 5th. The combination of the shaft having mated cranks, a balance-wheel journaled to revolve freely on the shaft, a pawl and ratchet wheel connection between the said shaft and balance wheel, the spindle, the spring and crosshead therefor, and the flexible connections between the said crosshead and cranks, whereby the spindle will be raised until the cranks pass over their dead centre, then the crank shaft will be quickly revolved ahead of the balance-wheel, and finally the wheel and shaft will be again engaged by the said pawl and ratchet wheel, as set forth. 6th. The combination of a frame having vertical ways, a carriage fitted to slide on the said ways, the spindle crosshead, crank shaft and connections mounted on the said carriage, and a screw engaging the carriage with its thread and journaled in the frame having bearings to resist endways thrust whereby the carriage may be raised or lowered, as set forth. 7th. The combination of a stationary frame, a carriage fitted to slide vertically thereon, a feed screw fitted to slide the carriage upon the frame, a drill holding spindle, and means for reciprocating it longitudinally in the carriage, a collar conical or rounded on its lower side fixed to the said spindle, a feed lever pivoted midway to the carriage and inclined diagonally into the path of the said spindle collar, a screw nut upon the said feed screw provided circumferentially with ratchet teeth, a hook-shaped pawl connecting the upper end of the feed lever with the said ratchet toothed nut, and a spring impelling the lower end of the feed lever toward the spindle, as shown and described. 8th. The combination of a stationary frame, a carriage fitted to slide thereon, a drill spindle fitted to reciprocate longitudinally in the carriage, and provided with a collar tapering or rounded on its lower side, a feed lever pivoted to the carriage and having one end inclined diagonally into the path of the said collar, and a spring impelling the said end of the lever constantly toward the spindle, as described. 9th. The combination of a stationary frame, a carriage fitted to slide thereon, a feeding device for the carriage, a lever to operate the feeding device, and a drill spindle fitted to reciprocate longitudinally a given distance in the carriage, the said spindle being provided with a collar tapering or rounded on its lower side, and the said lever having one end slanted diagonally into the path of the collar near the lower end of the said path, as described. 10th. The combination of a drill spindle adapted to reciprocate longitudinally, and having a collar tapering or rounded on its lower side, and a feed lever having an inclined end hung diagonally into the path of the said collar, as described.

No. 24,925. Spring Lock and Guard for Sword-Bayonet and Bayonet. (*Resort-Arret et Garde de Sabre-Bayonnette et de Bayonnette*.)

Hugh R. Little, Halifax, N. S., 10th September, 1886; 5 years.

Claim.—1st. As a means for retaining a sword bayonet and bayonet in their scabbards, a steel spring lock A fastened to scabbards with steel pins or rivets B, as shown on drawing and tracing marked N. 2nd. In combination with said spring lock, a steel guard C rivetted to scabbard with copper washer plate D on inside of scabbards, as shown, said guard acting as a check or restrainer to further movement of spring lock, as indicated.

No. 24,926. Scale Beam. (*Fletau de Balance*.)

Francis James, (assignee of John W. Palmer), Mo., U. S., 10th September, 1886; 5 years.

Claim.—1st. The combination, substantially as before set forth, of the longitudinally grooved cylinder, of the scale beam, the sliding weight and the rotating screw. 2nd. The combination, substantially as before set forth, of the longitudinally grooved cylinder, of the scale beam, the sliding weight and the retaining screw carrying a spring actuated piston. 3rd. The combination, substantially as before set forth, of the cylinder, of the scale beam and the sliding weight lined with leather. 4th. The combination, substantially as before set forth, of the longitudinally grooved cylinder, of the scale beam, the hollow sliding weight and the retaining screw.

No. 24,927. Letter-Copying Machine.

(*Machine à Copier*.)

Zebulon A. Lash, (assignee of John F. Lash), Toronto, Ont., 10th September, 1886; 5 years.

Claim.—1st. In a letter-copying machine in which the manuscript is copied on paper carried between the revolving rollers, a roller E arranged to damp the paper passing round the roller A, in combination with said roller A and the roller D, arranged to wring the paper on the roller after it has passed the roller E. 2nd. In a letter-copying machine, the combination of a main roller A, a copying-roller H, a wringing-roller arranged to press upon the paper and a wetting apparatus, substantially as described. 3rd. In a letter-copying machine in which the manuscript is copied on paper carried between two revolving-rollers, the damping-roller E and a hard unyielding

roller, arranged in combination with a roller made of soft and yielding material, for the purpose of wringing the copying paper before it is brought in contact with the manuscript, substantially as and for the purpose specified. 4th. In a letter-copying machine, the combination of the damping-roller E, the hard unyielding roller A, and the soft and yielding rollers D, H, revolving in contact with said rollers E, A, respectively substantially as and for the purposes specified. 5th. The rollers A, D and E, the latter being dampened and arranged to act on the paper I, as specified, and the roller D revolving in contact with the rollers A, E, in combination with the roller L arranged to make the wiper I hug the roller E, substantially as and for the purpose specified. 6th. The roller E revolving in the pan F, in combination with the rollers L and K, journalled in the pivoted arm M arranged to act on the paper I, substantially as and for the purpose specified. 7th. In a copying machine in which the manuscript is copied on a continuous web of paper carried between rollers, the combination with the rollers A, D, H arranged in relation to each other, as specified, of a revolving roller N, arranged substantially as and for the purpose specified. 8th. The damping roller E and main roller A, in combination with the wringing-roller D, arranged to hug the surfaces of the rollers A, E, for the purpose of forming a double wringer for the copying paper I, substantially as and for the purpose specified.

No. 24,928. Thill Coupling.

(Armon de Limonière.)

William H. Henry, Palermo, and Jonathan Butts, New York, (assignees of William H. Hannan), Palermo, N. Y., U. S., 10th September, 1886; 5 years.

Claim.—1st. The thill iron T formed with the hinge-pin a, and provided with the bushing n, in combination with the draft-eye composed of the fixed lower half b, and the upper half b' hinged to the forward portion of the lower half, and provided with the rearward projection c, the cams d, d' pivoted on the shank e of the draft eye, and the bail f connected with said cam and adapted to be placed across the projection c, substantially as described and shown. 2nd. In combination with the thill iron T formed with the hinge-pin a, the clip C formed with the shank e, eye-section b b' and perforated lug r, the eye-section b b' hinged to the forward portion of the section b, and formed at its rear end with the rearward projection c, the cams d, d' formed of a single piece of wire bent at its centre to the shape of the loop i, and bent at the ends of said loop into coils d, and having the extremities l, l' bent toward and in line with each other and inserted into the perforated lug r, and the bail f hung on the coils d, d' and embracing the shank e and projection c, substantially as described and shown.

No. 24,929. Lath Machine. (Machine à Lattes.)

Isaac M. House and Alfred R. Williams, Gravenhurst, Ont., 10th September, 1886; 5 years.

Claim.—1st. The friction rollers C, D, driven by belts from pulleys on the saw-arbor b, and journalled on the pivoted lever e, which is a part of the bracket E. 2nd. The lever e and bracket E, pivoted to the fixed bracket or frame F, for the purpose of bringing the friction rollers C, D, in contact with the friction-pulley G. 3rd. The friction pulley G being journalled on the bracket or frame F, and on the opposite end of whose spindle g is a small pulley p supported in a similar bracket, which pulley drives the feed-rollers a, a', a'', by a belt passing round the pulleys A, A', all arranged and operating substantially as shown and for the purpose specified.

No. 24,930. Check-Rein Holder.

(Accroche Fausse-Réins.)

Robert E. King, Warrenton, N.C., U.S., 10th September, 1886; 5 years.

Claim.—1st. A check-rein holder adapted for connection with the harness saddle, and consisting of a body or frame provided with a wall or bearing, and with guides inclined with reference to said bearing, and the roller held and movable in said guides, substantially as set forth. 2nd. The combination, with the frame or case having inclined guides, and a wall or bearing of the roller held and movable in the guides and the guide pin or bar, substantially as set forth. 3rd. The herein described clamping device for straps, comprising a body or frame provided with a wall or bearing, and with guides inclined with reference to said bearing, and having wings arranged at approximately right angles to their main portions, and the roller held and movable in said guides, and into and out of the wings thereof, all being arranged substantially as described, whereby when the roller is in said wings the strap may move back and forth without being clamped by said roller, substantially as set forth. 4th. The combination of the body or frame having a wall or bearing, and guides inclined with reference to said wall or bearing, and formed with wings or enlarged portions at their rear ends, and the roller movable in said guides and into and out of the wings or enlarged portions thereof, substantially as set forth. 5th. The herein described clamping device for straps, comprising a body or frame provided with a wall or bearing, and with guides inclined with reference to said bearing and having wings arranged to approximately right angles to their main portions and the roller held and movable in said guides and into and out of the wings thereof, the said wings being projected toward or in a reverse direction from the wall or bearing aforesaid, and all arranged, substantially as described, whereby when the roller is in said wings the strap may move back and forth without being clamped by said roller, substantially as set forth. 6th. As an improved article of manufacture, a check-rein holder, consisting of a frame having guide rings B for the reins, and provided with inclined guides c and wall or bearing A, and the roller held and movable in said guides, substantially as set forth.

No. 24,931. Reclining Chair. (Fauteuil Briel.)

Friedrick Hunger and Solomon Schmuck, Cleveland, Ohio, U.S., 10th September, 1886; 5 years.

Claim.—1st. In a reclining chair, the combination, with the chair-back and arm-posts respectively hinged to the seat and to the arms, substantially as indicated, of extension braces in the form of a sector, the parts of the brace made male and female, the one portion of the brace being secured to the arm-post, and the other portion pivoted to the arm, the two parts of the brace having holes, projections or depressions for mutually engaging the pivoted parts of the brace with a hand lever arranged under the respective arms for operating the extension bar, substantially as set forth. 2nd. In a reclining chair, the combination, with a seat back arms and arm-posts, the parts hinged to each other, substantially as indicated, of an extension brace in the form of a sector having its centre at the axis of the hinge d, the parts made male and female forming a slip-joint, and provided respectively with suitable holes, depressions or projections for engaging each other, the one part of the brace being secured to the arm-post and the other portion of the brace being pivoted to the arm, a hand lever for elevating the pivoted part to disengage it for tilting the chair back, and so arranged that the parts of the brace when left will engage each other by means of the gravity of the pivoted portions, substantially as set forth.

No. 24,932. Washing Machine.

(Machine à Laver.)

Jean B. Jodoin, St. Césaire, Que. (assignee of Frédéric Tremblay, Salem, Mass., U.S.), 10th September, 1886; 5 years.

Claim.—1st. The arms C, provided with the shanks b, which slide through the guides c on the cross-arms D, and are held by the spring d, substantially as shown and described. 2nd. The combination of a circular tub having a corrugated metal lining and bottom ribs e, with cross-arms D having the guides c, and the fluted arms C attached to the shanks b and controlled by the coil springs d, substantially as shown and described and for the purpose set forth.

No. 24,933. Deposition of Platinum by Electricity. (Application du Platine par l'Électricité.)

The Bright Platinum Plating Company (assignee of William A. Thomas), London, Eng., 10th September, 1886; 15 years.

Claim.—1. The process of depositing platinum by electricity, the employment of a bath, consisting of a solution of platinum in the form of a chloride, to which is added a solution of ordinary phosphate of soda, and then a solution of ordinary phosphate of ammonia, the whole being subsequently boiled, and chloride of sodium solution added, all substantially as specified.

No. 24,934. Transfer Surface for Producing Copies of Type-writing, etc., and Process of Manufacturing the Same. (Surface Communicative pour Reproduire les Copies de Graphotypie, etc., et Procédé de Fabrication de telle Surface.)

John T. Underwood and Frederick W. Underwood, Brooklyn, N. Y., U.S., 10th September, 1886; 5 years.

Claim.—1st. The process of manufacturing transfer surfaces by the employment of precipitates of dye, matter dried and mixed with oil, wax, or oleaginous matter, substantially as set forth. 2nd. The composition herein described for the manufacture of a substitute for carbon paper, composed of a precipitate of dyo matter in combination with oil, wax, or oleaginous matter, substantially as set forth. 3rd. A sheet of material or fabric coated with a composition composed of a precipitate of dye, matter obtained as described, in combination with oil, wax or oleaginous matter, substantially as and for the purpose set forth.

No. 24,935. Automatic Gate.

(Barrière Automatique.)

Alexander D. McDonell, Roxborough, Ont., 11th September, 1886; 5 years.

Claim.—1st. In a swinging gate, as above described, the swinging lever B having gate post A as fulcrum, and the gate pin C as resistance, substantially as and for the purpose hereinbefore described. 2nd. In a swinging gate, the plate D provided with holes at each end, substantially as and for the purpose hereinbefore described. 3rd. In a gate latch, the plate F to which is pivoted the keepers E, E', held together by wire G having weight H and controlling pins J, J', substantially as and for the purpose hereinbefore described.

No. 24,936. Garment Support or Stocking Fastener. (Bretelle ou Jarretière.)

George F. Atwood, Swanton, Vt., Jedediah D. Beeman, Moriah Centre, N.Y., George W. Beeman, Fairfax, Vt., and Leonard L. Beeman, East Greenwich, R. I., U. S., 11th September, 1886; 5 years.

Claim.—1st. The combination, with the frame having the eyes at the ends of its arms for attachment, the outward bends intermediate of the eyes and point and the interlocking teeth of the slide bar between the eyes and bends of the arms, substantially as specified. 2nd. The combination, with the frame having the eyes at the ends of its arms for attachment, and the outward bends intermediate of the eyes and point of the slide-bar between the eyes and bends of the arms, substantially as specified.

No. 24,937. Flour Bolt. (Bluteau.)

August Heine, Silver Creek, N. Y., U. S., 11th September, 1886; 5 years.

Claim.—1st. The combination, with a revolving reel, provided on its inner side with elevating ribs F, separated from the bolting sur-

face by open spaces *g*, of a deflector *N*, provided with a wall *n*, curved concentric with the reel and separated from the bolting surface by a narrow space through which the ribs *F* move freely, and through which the material is elevated and allowed to dash again upon said ribs, substantially as set forth. 2nd. The combination, with a revolving reel, provided on its inner side with elevating ribs, of an arch-shaped deflector *N*, composed of a concentric portion *n* arranged opposite the ascending side of the reel, and an inclined portion having deflecting boards *o*, and arranged opposite to the descending side of the reel, substantially as set forth. 3rd. The combination, with the casing *A*, provided with a bearing *C*, and a bearing *C* having an extension *r*, the reel *B* and the reel shaft *b* of the deflector *N* secured at one end to the extension *r*, and supported at the opposite end upon the shaft *b*, substantially as set forth. 4th. The combination, with the stationary case and the reel head *D*, of a ring *J* joined to the head and supported movably on the case, whereby the ring *J* can adjust itself on the case to the position of the reel head, substantially as set forth. 5th. The combination, with the stationary case, and the reel head *D*, of a ring *J* joined to said head, and provided with arms *k* and sockets *l* secured to the case and holding the arms *k* loosely, substantially as set forth.

No. 24,938. Railroad Frog. (*Rail de Croisement*)

Axel A. Strom, Austin, Ill., U.S., 11th September, 1886; 5 years.

Claim.—1st. A railroad frog, having its parts secured together by connected clamps, independently adjustable longitudinally upon their connecting medium, substantially as described. 2nd. A railroad frog, having its parts secured together by connected clamps, independently adjustable longitudinally upon their connecting medium, embracing opposing bevelled surfaces, substantially as described. 3rd. A railroad frog, comprising diverging rails *A* and converging rails *A*, plates *t* forming filling and having their outer edges bevelled toward one extremity, which extends beyond the diverging ends of the rails *A*, a plate *t* forming filling, the rails *A*, clamps *C* to secure the parts of the frog together, and means, substantially as described, connecting the clamps, the whole being constructed and arranged to operate as and for the purpose set forth. 4th. A railroad frog comprising diverging rails *A* and converging rails *A*, plates *t* forming and having their outer edges bevelled toward one extremity, which extends beyond the diverging ends of the rails *A*, a plate *t* forming filling between the rails *A*, clamps *C* to secure the parts of the frog together, and tie-rods *D* connecting the clamps and provided with lock-nuts *p*, the whole being constructed and arranged to operate substantially as described. 5th. A railroad frog, comprising diverging rails *A* and converging rails *A*, plates *t* forming filling, and provided toward one extremity with lugs *q* projecting between the adjacent flanges of the rails *A*, and having their outer edges bevelled toward their opposite extremity, which extends beyond the diverging ends of the rails *A*, a plate *t* forming filling and provided toward one extremity with a lug *q* projecting between the flanges of the rails *A*, clamps *C* to secure the parts of the frog together, and tie-rods *D* connecting the clamps and provided with lock-nut *p*, the whole being constructed and arranged to operate substantially as described.

No. 24,939. Frame for Track Drill.

(*Dâti de Semoir en Ligne.*)

Axel A. Strom, Austin, Ill., U.S., 11th September, 1886; 5 years.

Claim.—A frame for track drill, comprising the bar *A* and arms *B* provided with hooks *h* in combination with the movable rest *n* sliding on the bar *A*, and provided with rigid extension *C* projecting inward from it, to serve as a bearing for the pivoted self-feeding device, substantially as described.

No. 24,940. Expansion Link of the Valve Gear of Locomotives, etc. (*Filaux à Déclente de Distribution par Tiroir de Locomotives, etc.*)

Herbert W. Garratt, Lower Clapton, Eng., 11th September, 1886; 5 years.

Claim.—The improvement, hereinbefore described, in the expansion links of the valve gear of locomotive and other steam engines, that is to say the prolongation of the expansion links, and of the slots therein to such an extent beyond that necessary to admit of the engine being put into full forward or full backward gear, that when the engine is "blind" in full gear, the valve covering the steam port through which steam is required to pass, in order to start the engine, may be pushed backward sufficiently to uncover or partially uncover that part by lowering or raising the links beyond the full gear position.

No. 24,941. Coffee or Tea Pot.

(*Cafetière ou Théière.*)

William H. Hopkins, Sodus, N. Y., U.S., 11th September, 1886; 5 years.

Claim.—1st. The combination, with the coffee or tea pot having a tube *B* secured thereto, of the extractor *C* having the tube *F* extending downward therefrom, and the filter *J* inserted in said extractor, substantially as shown and described. 2nd. The combination, with the coffee or tea pot having the spout, of the lid or cover having a central orifice, a tube secured thereto, and the cap fitting the outer end of the spout and the orifice in the cover, substantially as shown and described. 3rd. In combination with the extractor *C*, the filter *J* fitted therein, the tube *F* extending downward from the filter and provided with a stop-cock, said filter comprising a bail or handle, and a band *K* provided with hooks to receive the filtering cloth, as set forth.

No. 24,942. Process for Copying Letters, etc.

(*Procédé pour Copier les Lettres, etc.*)

Herbert C. Capel and William Gaskill, London, Eng., 11th September, 1886; 5 years.

Claim.—1st. In a copying press, the combination of a fixed platen, a movable platen, a treadle, and means for connecting the said treadle with the movable platen, substantially as and for the purpose described. 2nd. In a copying press, the combination of a fixed platen *b*, the movable platen *c*, the treadle *d* and the rods *f, f*, substantially as described. 3rd. The combination, with a copying press operated by foot power, of a book-rack *l*, drawers *m* and desk or table *n*, substantially as described.

No. 24,943. Spark-Arrester. (*Pare-Étincelle.*)

Frederick S. Bragg, Coming, N. Y., U.S., 11th September, 1886; 5 years.

Claim.—1st. The combination, with the smoke-box of a locomotive boiler, of a cinder discharge opening in the bottom of said smoke-box at the end farthest from the flue sheet, a valve or gate across said opening and limited to leave a permanent opening through said gate, as and for the purpose set forth. 2nd. The combination, with the smoke-box of a locomotive boiler, of a cinder discharge opening in the bottom of said smoke-box at the end farthest from the flue sheet, a gate across said opening, and provided with an air inlet port through it, and a supplemental valve or gate for regulating said inlet, substantially as described and shown for the purpose set forth. 3rd. The combination, with the smoke-box of a locomotive boiler, of a wire netting interposed between the ends of the flues and stack, a cinder discharge opening in the bottom of said smoke-box at the end farthest from the flue sheet, a gate across said opening and provided with an air inlet port through it, and a supplemental valve or gate for regulating said inlet, substantially as described and shown for the purpose set forth.

No. 24,944. Non-Intoxicating Beverage.

(*Boisson non-Capiteuse.*)

Charles W. Hayward, Halifax, N. S., 11th September, 1886; 5 years.

Claim.—The process, as described, of making a non-intoxicating beverage composed of malt, hops, water and yeast, substantially in the proportions and for the purposes set forth.

No. 24,945. Dust Pan. (*Porte Ordure.*)

Jehiel F. Wynkoop, Philadelphia, Penn., U.S., 11th September, 1886; 5 years.

Claim.—A dust pan having a triangular covered dirt receptacle, and an open tubular handle connected therewith at the apex of the triangle, and adapted to serve as a discharge passage, substantially as described.

No. 24,946. Rail Bender.

(*Machine à Cintrer les Rails.*)

Axel A. Strom, Austin, Ill., U.S., 13th September, 1886; 5 years.

Claim.—1st. In a rail-bender, the combination of a frame *A*, and rollers *C* and *F*, arranged at one side of the frame to permit the application of the machine, substantially as described. 2nd. In a rail-bender, the combination of a frame *A*, rollers *C*, *C* and *F*, arranged at one side of the frame, and friction-roller *K*, *K*, substantially as and for the purpose set forth. 3rd. In a rail-bender, the combination of a frame *A*, rollers *C*, *C* and *F*, arranged at one side of the frame, and a spindle *G*, substantially as and for the purpose set forth. 4th. In a rail-bender, the combination of a frame *A*, rollers *C*, *C* and *F*, arranged at one side of the frame, a screw *D* and nut *E*, substantially as and for the purpose set forth. 5th. In a rail-bender, the combination of a frame *A*, rollers *C*, *C* and *F*, arranged at one side of the frame, a screw *D*, a nut *E*, and a spindle *G*, substantially as and for the purpose set forth. 6th. In a rail-bender, the combination of the frame *A*, screw *D*, nut *E*, rollers *C*, *C* and *F*, spindle *G*, and guide-bar *H*, substantially as and for the purpose set forth. 7th. In a rail-bender, the combination of the frame *A*, screw *D*, nut *E*, rollers *C*, *C* and *F*, spindle *G*, guide-bar *H*, and friction-rollers *K*, *K*, substantially as and for the purposes set forth. 8th. A device for bending rails comprising in combination, a frame *A* having its extremities bent and joined by a cross-bar *B*, and provided with a central opening *a*, a screw inserted at one end through the central opening in the frame provided with a nut *E* for tightening it, and having a divided head *SS* connecting the screw with the cross-bar, and affording bearings for a roller *F* to embrace the head of a rail at one side, rollers *C*, *C* in suitable bearings in the bent extremities of the frame *A* to embrace the head of the rail at its opposite side, and means, substantially as described, for actuating the roller *F*, as set forth. 9th. A device for bending rails comprising in combination, a frame *A*, having its extremities bent and joined by a cross-bar *B*, and provided with a central opening *a*, a screw inserted at one end through the central opening in the frame provided with a nut *E*, and having a divided head *SS* connecting the screw with the cross-bar, and affording bearings for a roller *F* to embrace the head of a rail at one side, rollers *C*, *C* in suitable bearings in the bent extremities of the frame *A* to embrace the head of the rail at its opposite side, friction-rollers *K*, *K*, and means, substantially as described, for actuating the roller *F*, as set forth. 10th. The combination of the frame *A*, cross-piece *B*, rollers *C*, *C*, *F* and *K*, *K*, screw *D*, nut *E*, guide-bar *H*, pins *c*, *c*, and spindle *G*, as and for the purpose set forth.

No. 24,947. Chair for Railroad Tracks.

(*Coussinet de Rail de Chemin de Fer.*)

Axel A. Strom, Austin, Ill., U.S., 13th September, 1886; 5 years.

Claim.—A switch or head chair comprising in combination, a plate *A* and a cross-bar *B*, formed in one or more parts and secured upon the plate *A*, and slitted transversely part way across, and having the edges on each side of slit bent upward to afford slots *t* and rockets *s* closed on one side, substantially as described.

No. 24,948. Machine for Making Sand Moulds for Casting Metal.
(*Machine à Faire les Moules en Sable Maigre de Fonderie.*)

Matthew R. Moore, Indianapolis, Ind., U.S., 13th September, 1886; 5 years.

Claim.—1st. The construction and use of a group of independently movable rammers, in combination with means for so operating them that they may move to unequal extents in compressing different parts of the sand, and arranged to serve as herein specified. 2nd. A group of independently movable rammers, in combination with means for operating them to unequal extents in compressing different parts of the sand, and with provisions for presenting and removing a flask, as herein specified. 3rd. In combination with a group of separately movable rammers, and provisions for depressing the same to unequal extents in compressing different parts of the sand, a series of springs arranged to return the rammers to their places, substantially as herein specified. 4th. A group of rammers, arranged as shown, so that some act on smaller areas of the sand than others, and for that reason serve with more effect, substantially as herein specified. 5th. A group of rammers, in combination with actuating pistons of different areas, so as by that means to act on different parts of the sand with unequal forces, substantially as herein specified. 6th. The construction and use of a group of independently movable rammers, arranged to act on unequal areas of the sand, in combination with actuating pistons having different areas, as herein specified. 7th. The guides H, arranged as shown, in combination with the pistons M, rammers M₂, piston rods M₁ and provisions for admitting and discharging fluid, as herein specified. 8th. A group of independently movable rammers, in combination with pistons and cylinders, and with a single cock or valve controlling the admission of fluid to all, as herein specified. 9th. A group of independently movable rammers, in combination with a corresponding group of pistons and cylinders, and with provisions for admitting steam or other fluid under pressure and with provisions for removing water from such cylinders, as herein specified. 10th. A group of separately movable rammers, in combination with separately forcing means for each, and with provisions, as the cocks F, for putting certain rammers out of use at will, substantially as herein specified. 11th. A yielding presser consisting of the combination of rammers M₂, piston rods M₁, pistons M, spiral springs L, cylinders G and cylinder head G₁, constructed and operating substantially as herein specified.

No. 24,949. Heating Apparatus. (*Calorifère.*)

Garth & Co. (assignees of John G. Smith), Montreal, Que., 13th September, 1886; 5 years.

Claim.—1st. A radiator formed of sections built up and secured together, each communicating separately with inlet and outlet, so as to secure a distinct and separate circulation in each section. 2nd. The combination, with sections making up a radiator, of the inlet, outlet and bent pipes communicating separately with each section, as and for the purposes set forth. 3rd. In a radiator, the combination, with inlets and outlets, the former being at a higher level than the latter, of a diaphragm projecting downwards from the upper side of the foot chamber or base, as and for the purposes described. 4th. In combination, with the foot chamber, of a sections forming part of a radiator, a diaphragm formed of one or two parts, its collective or individual length being greater than the depth of the chamber, all as herein set forth.

No. 24,950. Twist Indicator for Ships' Cables. (*Indicateur de Torsion pour Câbles de Navires.*)

James Scotland, Saint Pierre, Miquelon, 13th September, 1886; 5 years.

Claim.—As an instrument for indicating twist in a ships' cable, a magnet fixed on a vertical arbor, which is free to rotate, and which is connected by toothed gearing with one or more index pointers, arranged to move over a dial or dials showing numbers of turns, substantially as hereinbefore described.

No. 24,951. Electric Conductor.

(*Conducteur Electrique.*)

Edward G. Acheson, New York, N.Y., U.S., 13th September, 1886; 5 years.

Claim.—1st. An electric conductor, consisting of a line wire, an insulating covering for the same, a continuous homogeneous metallic shield of thin flexible material, and a protective covering, substantially as described. 2nd. An electric conductor, consisting of a line wire, an insulating covering of fibrous material and asphaltum, a thin flexible shield of electrolytically deposited copper, a coating of metallic alloy and a protective covering, substantially as described. 3rd. The method of forming electric conductors, which consists in covering insulated conductors with an electrolytically deposited shield, by first forming a layer of comparatively hard crystalline deposit, and then forming upon such deposit a layer of comparatively soft and flexible deposit, substantially as described. 4th. The method of forming electric conductors, which consists in covering them with an electrolytically deposited shield of different layers in one continuous operation, by passing the conductors through baths of different size and supplied with currents of different electromotive forces, substantially as described. 5th. The method of forming electric conductors, which consists in covering the insulated conductor with a metal shield, electrolytically deposited in layers of different degrees of hardness, and covering the same with a metal alloy by passing the conductor through a molten mass of the alloy, substantially as described.

No. 24,952. Ratchet Drill. (*Perçoir à Rochet.*)

Axel A. Strom, Austin, Ill., U.S., 13th September, 1886; 5 years.

Claim.—1st. The combination, with a ratchet drill, of a self-regulating feeding device, substantially as and for the purpose set forth. 2nd. The frame A, made to pass over the rail and catch the rail at or near the centre of the web, substantially as described. 3rd. In a ratchet drill, the combination of a drill-stock D, actuating lever E, and a self-regulating feeding device, substantially as described. 4th. In a ratchet drill, the combination of a drill-stock D, actuating lever E, spring-dog and ratchet *g*, *g*₁, *c*, and a self-regulating feeding device, substantially as described. 5th. In a ratchet drill, the combination, with the actuating lever E and drill-stock, of a ratchet *e*, one or more dogs *g*, and a spring behind each dog, substantially as described. 6th. In a ratchet drill, the combination, with the actuating lever E and drill-stock, of an annular head upon the lever E to surround the drill-stock, a ratchet *e* within the annular head, one or more dogs *g* to engage with the ratchet, a spring *g*₁ behind each dog, and a washer provided with slots *c* to allow the dogs to pass into the annular head, substantially as described. 7th. In a ratchet drill, the combination, with the rotary drill-stock D, of a recessed sleeve D₁, a dog B₁ and a lever B, substantially as and for the purpose set forth. 8th. In a ratchet drill, the combination, with the rotary drill-stock D, of a self-regulating feeding device, comprising a recessed sleeve D₁, a lever B, a dog B₁, a cog-wheel C and a feed-screw *c*, substantially as described. 9th. The combination, in a ratchet drill, of the dog B₁ lever B, latch *b*₁ and recessed sleeve D₁, substantially as and for the purpose set forth. 10th. In a ratchet drill, the combination, with the rotary drill-stock, of a self-regulating feed device, comprising a recessed sleeve D₁, a lever B and dog B₁ hinged to move together, a latch *b*₁ on the lever B, a cog-wheel C and a feed-screw *c*, substantially as described. 11th. A ratchet drill, having a self-regulating feed, and comprising in combination jaws *b*, a lever B, a dog B₁, a latch *b*₁, a drill stock D, a feed-screw *c*, a cog-wheel C, a recessed sleeve D₁, an actuating lever E, having an annular head to surround the drill-stock, and containing a ratchet *e*, dogs *g* in the drill-stock and containing a ratchet *e*, dogs *g* in the drill-stock to engage with the ratchet and a spring *g*₁ for the dogs, the whole to be supported by a suitable frame, and being constructed and arranged to operate substantially as described.

No. 24,953. Machine for Making Sand Molds for Casting Metals. (*Machine à Faire les Moules en Sable Maigre de Fonderie.*)

Matthew R. Moore, Indianapolis, Ind., U.S., 13th September, 1886; 5 years.

Claim.—1st. A group of separately movable pressers or rammers, in combination with springs arranged to force down the rammers independently, substantially as herein specified. 2nd. A group of independently movable rammers or sectional pressers and corresponding springs, in combination with each other and with provisions for independently adjusting the forces of the several springs, as herein specified. 3rd. The spring A, provided with separate and independent means, as *g*, for adjusting their tension, in combination with the movable sections or rammers *c*, and with the frame or containing piece A, the whole forming a yielding platen adapted to be adjustably secured in a machine, and to serve, substantially as herein specified. 4th. A group of separately movable rammers, in combination with springs arranged to act independently therein, and with provisions for presenting flasks with patterns and sand thereto, and forcibly pressing them together, substantially as herein specified.

No. 24,954. Churn. (*Baratte.*)

William J. W. Dolano, Jr., Waterbury, Vt., 13th September, 1886; 5 years.

Claim.—In a working body churn, having its sides arranged at angles to each other, and divided longitudinally through two of these angles, whereby a section of the churn body is separated and formed into a lid, the combination of said lid hinged at one side to the main portion of the body, the hook C on one part of the body, the staple or strap D arranged on the other part of the body, a link G extended across and bearing upon the angular edge or corner made by the meeting edges, and the lever E pivoted to the free end of the link, and provided with the extension or part *c* arranged to engage under the hook C, substantially as set forth.

No. 24,955. Car-Coupling. (*Attelage de Chars.*)

Benjamin B. Morgan, Ann Arbor, Mich., U.S., 13th September, 1886; 5 years.

Claim.—1st. In combination with the draw-bar K, the pivoted hook H and the toe T connected therewith, and the pin P pivoted to the end of the toe T, substantially as described. 2nd. In combination with the draw-bar K, having the bevelled throat-piece M, the pin B extending across the front of said draw bar above the throat-piece, whereby a throat C is left between said throat-piece and pin, substantially as described. 3rd. The combination with the pivoted toe T, the pin P removably pivoted thereto, substantially as described. 4th. In combination with the draw-head K, the pivoted toe T having its lower face curved to form a backing for a link, substantially as described. 5th. A draw-bar, having a recess cut therein, and a coupling-bar across its front end, a swinging hook pivoted in the draw-bar, and a lateral toe T connected with the hook and rising in said recess when the hook is raised, substantially as shown and described.

No. 24,956. Machine for Manufacturing Seamless Tubes, etc. (*Machine à Fabriquer les Tubes, etc., sans Ourlet.*)

Charles Kellogg, Buffalo, N.Y., U.S., 13th September, 1886; 5 years.

Claim.—1st. As an improvement in machinery for manufacturing tubes and other hollow cylindrical articles, the combination of the

mandrels D, D', having the same diameter and affixed to a suitable mandrel-rod, with the horizontal and vertical rolls of a universal rolling mill, for the purpose specified. 2nd. The combination of the horizontal and vertical rolls, of a universal rolling mill, a mandrel composed of the solid stationary parts D, D', having equal diameters and placed in the pass of the rolls, with the bearing surfaces of the said parts respectively in line with the axes of the rolls B, C, the mandrel-rod and the forked standard E, substantially as specified.

No. 24,957. Metallic Oil Barrel.

(*Baril Méallique à Huile.*)

James W. Cuthbertson, Bothwell, Ont., 13th September, 1886; 5 years.

Claim.—1st. In a metallic oil barrel, an end or head E formed in one or more sections in which a raised portion c₁ is formed, substantially as and for the purpose set forth. 2nd. In a metallic oil barrel, a corrugated body B formed with a projection b₂, in combination with an end or head E, substantially as and for the purpose set forth. 3rd. In a metallic oil barrel, an end or head E constructed in one or more sections, in which a raised portion c₁ and a concave portion c₂ are formed, in combination with a body B formed with a flange b, substantially as and for the purpose set forth. 4th. In a metallic oil barrel, an end or head E formed in one or more sections, and with a raised portion c₁, in combination with a corrugated body B formed in one or more sections, substantially as and for the purpose set forth.

No. 24,958. Neck Yoke for Team Harness, etc. (*Volée d'Avant de Voiture, etc.*)

Duncan McPhail, Lachute, Que., 13th September, 1886; 5 years.

Claim.—1st. The combination of the bar A, ferrule B, staple b, hook C, spring D, ring E and ring F. 2nd. The combination of the bar A, ferrule B, staple b, hook C and spring D. 3rd. The combination of the bar A, bolts a, washers a', links a'', ring A', staple b, hook C, spring D, ring E and ring F, all substantially as shown and described and for the purpose set forth.

No. 24,959. Horse Shoe. (*Fer à Cheval.*)

Christopher D. Lang and Robert J. Nicholson (assignees of Horace Hobson), Sheffield, Eng., 13th September, 1886; 5 years.

Claim.—1st. In horse shoes, the combination of the two undercut grooves A, A', with the transverse groove B to hold removable pads for the purpose specified, substantially as set forth. 2nd. The elastic pads C, of the form shown, in combination with horse shoes, for the purpose specified and herein described and shown.

No. 24,960. Bridge. (*Pont.*)

Joseph Tomlinson, Ely, Iowa, U.S., 16th September, 1886; 5 years.

Claim.—1st. In a bridge or like structure, a chord composed of two or more substantially parallel eye-bar chords placed one above another, and connected at the ends by pins passing through web extensions of the supporting posts, whereby the tension on the upper tiers of the compound chords are not effected by the tension of the lower parallel tiers, as set forth. 2nd. In a bridge or like structure, a flexible chord composed of two or more eye-bars, chords placed one above another and connected together at the ends by pins passing through web extensions of the supporting posts, and pinned to a saddle composed of plates or eye-bars pinned together horizontally and arranged in tiers one upon another and upon the top of the pier posts, as set forth. 3rd. In combination with a compound column or pier post consisting of posts b, a, a', b, the saddle E composed of eye-bars g, h, i, connected at their ends by pins, substantially as set forth. 4th. In a bridge or like structure, the combination of a compound or double post, and independent sets of suspenders running from each main member of the compound post to the lower chord and vertical member to be sustained. 5th. In a bridge or like structure, the combination of a series of sets of eye-bar suspenders, and a separate anchorage for each series of sets of eye-bar suspenders, substantially as explained. 6th. In a bridge, the combination of main trusses, and intermediate truss, and vertical posts connecting the lower chords of the main trusses, and the upper chords of the intermediate trusses and adapted to move with the cords to which they are connected as the longitudinal members of the bridge expand or contract. 7th. In a bridge, the combination of pier posts, saddles composed of eye-bars or plates resting upon said posts and arranged in tiers, one tier above another, flexible compound chords composed of two or more eye-bar chords placed one above another, connected by pins to the extension webs of posts, and attached to the saddles, a platform and suspenders connecting the platform and the chords, all substantially as described and shown. 8th. In a bridge, the combination of chords composed of two or more single eye-bar chords placed one above another, compression lower chords, compound posts extending from said lower chords to the eye-bar chords, and independent sets of suspenders extending from the top of each main member of the compound posts to the lower chords, substantially as set forth. 9th. The herein described bridge consisting of suitable piers, columns or posts mounted upon the piers, compound eye-bar chords extending from the pier posts in the direction of the bridge, compression chords extending from the piers in the same direction, compound compression posts or members extending from compression chords to the eye-bar chords, and suspenders extending from each main member of the compound posts to the chords, substantially as shown and described. 10th. In combination with piers A, B and posts C, compound eye-bar chords D, saddles E composed of eye-bars or plates, suspenders F, lower chords G and compound posts H, all combined and arranged substantially as set forth. 11th. In a bridge, such as described and shown, the combination, of lower chords G, compound posts H, having vertical extensions k, and chords D composed of eye-bar chords joined together and connected with the vertical extensions by pins j. 12th. In a bridge, or like structure, a saddle composed of eye-bars or plates pinned together in sectional lengths, the bars or plates of the middle section curved inwardly, spaced apart and connected to the end sections by pins at right angles to the convergent chords, and

arranged in tiers to bear one upon another on the top of the pier posts, as set forth.

No. 24,961. Cement, etc. (*Ciment, etc.*)

Frederick Ransome, Lower Norwood, Eng., 16th September, 1886; 5 years.

Claim.—1st. The process of manufacturing cement, etc., which consists in first reducing the cement material to a dry powder, according to the degree of fineness required in the burnt cement, and then burning such dry powder by keeping it in continuous movement whilst exposed to the heated products of combustion of a gas or other furnace so that the cement produced may be used without subsequent grinding. 2nd. The process of manufacturing cement, etc., which consists in first reducing the cement material to a dry powder, according to the degree of fineness required in the burnt cement, and then burning such powder in a slowly revolving chamber heated by the combustion of gas, substantially as described. 3rd. The process of manufacturing cements, etc., which consists in first passing through the cement material a suitable amount of burning gases, and then using said gases to heat the supply of oxygen, substantially as described. 4th. The process of manufacturing cements, etc., which consists in uniting with gases from a generator, a suitable amount of oxygen, then passing the same through a regenerator and then into the chamber containing the cement material, substantially as described. 5th. The process of manufacturing cements, etc., which consists in uniting with gases from a generator, a suitable quantity of heated air, then passing the combined air and gases through a regenerator, and then into a furnace containing the cement material, substantially as described. 6th. The process of manufacturing cements, etc., which consists in uniting with gases from a generator, a suitable quantity of air heated by the outgoing products of combustion, then passing the combined gases and air through a revolving cylinder into which the cement material is gradually fed, substantially as described. 7th. The process of manufacturing cements, etc., which consists in first reducing the cement material to a dry powder, and then burning the same in a suitable furnace, by keeping it in a continuous movement therein whilst exposed to the combustion of gas made in a separate gas producer, and mixed in said furnace with a suitable amount of oxygen, substantially as described. 8th. The process herein described, of manufacturing cements, etc., which consists in first reducing the same to a dry powder, and then burning such powder in a revolving chamber, heated by the combustion of gas from a separate producer, mixed in said chamber with a suitable amount of oxygen, substantially as described. 9th. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas producer, and a trap between said gas producer and cylinder, substantially as described. 10th. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas producer and a mechanical feeder, substantially as described. 11th. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas producer, and a gas pipe connecting said producer with the revolving cylinder, and an air tube passing through said gas pipe to supply the same with the oxygen, whereby the air is heated by the gas and the two are mixed in the revolving cylinder, substantially as described.

No. 24,962. Hoof Pad.

(*Bourrelet de Sabot de Cheval.*)

Eugene F. Collins, Anson, Mo., U. S., 16th September, 1886; 5 years.

Claim.—1st. In a hoof-pad, the combination, with the pad proper, of the bar D extending beneath the same and bent up at its front end, means for supporting said bar at the rear end, an upright standard f near the front end extending through said pad, and an auxiliary bar H secured to the upper end of said standard f, and the point v of which is adapted to rest above the horseshoe. 2nd. In a hoof-pad, the combination, with the pad proper, of the bar D extending beneath the same, means for supporting said bar at its forward end, the headed stud E rigidly secured to the underside of said bar near its rear end, and the strap K adapted to pass over the hoof and provided with a slot r adapted to receive the stud E. 3rd. In a hoof-pad, the combination, with the pad proper, of the bar D extending beneath the same, means for supporting said bar at its forward end, the headed stud E extending through said bar near its rear end and rigidly secured therein, the shank of said stud also projecting through the pad, its inner end being bifurcated, and the so-split ends folded over onto the pad, and the strap K adapted to pass over the hoof, and provided with a slot r adapted to receive the stud E. 4th. In a hoof-pad, the combination, with the pad proper, of the bar D extending beneath the same, and bent up at its front end, an upright standard f near the front end extending through said pad, an auxiliary bar H secured to the upper end of said standard f, and the point of which is adapted to rest above the horseshoe, the headed stud E extending through said bar near its rear end and rigidly secured therein, the shank of said stud also projecting through the pad, its inner end being bifurcated, and the so-split ends folded over onto the pad, and the strap K adapted to pass over the hoof and provided with a slot r adapted to receive the stud E. 5th. In a hoof-pad, the combination, with the pad proper, of the bar D extending beneath the same, and bent up at its front end, an upright standard f near the front end extending through said pad, an auxiliary bar H secured to the upper end of said standard f, and the point of which is adapted to rest above the horseshoe, the headed stud E rigidly secured to the underside of said bar near its rear end, and the strap K adapted to pass over the hoof and provided with a slot r adapted to receive the stud E.

No. 24,963. Doubling and Twisting Machine. (*Machine à Retordre.*)

Samuel Etehbells Newcastle, Del., U.S., 16th September, 1886; 5 years.

Claim.—1st. The following devices for preventing the kinking of the yarn, and when the yarn breaks stopping the motion of the upper roller, viz., first, the lever c', second, its supporting shaft z', third, the upwardly bent lever f' pivoted in said lever c' said lever z' being provided with the strip g' and with the supporting wire or rib h',

fourth, a rest *h* independent of said levers, in combination with devices for guiding and twisting the yarn in a doubling and twisting machine, substantially as set forth. 2nd. In combination, viz., first, the pivoted lever *e*, second, the lever *f* pivoted on said lever *e*, said lever *f* being provided with the strip *g* and with the supporting wire or rib *p*, third, a rest *h* independent of said levers, fourth, the pivoted lever *i*, the shaft *z*, the levers *e* and *f* being respectively supported by said shaft, fifth, the rollers and devices for guiding the yarns from the spools to the twisting mechanism, sixth, the twisting mechanism, and seventh, the supports for the spools containing the yarns to be twisted, substantially as set forth.

No. 24,964. Nail Cutting Machine.

(*Machine à découper le Clou.*)

Edwin H. Bissett, Winnipeg, Man., 16th September, 1886; 5 years.

Claim.—1st. In a nail-cutting machine, the combination of the rotary cutter head *8*, the vibrating feed table *9*, chute *14* having passages *15*, disks *16* having radially sliding blocks *17*, trip hammers *20*, and means for intermittently rotating the disks, as set forth for the purpose described. 2nd. In a nail-cutting machine, the combination of the rotary cutter-head *8* and vibrating feed table *9*, as set forth. 3rd. In a nail-cutting machine, the combination of the rotary disks *16*, having radially sliding blocks *17* to receive and grip the headless nails, and hammers *20* to head the nails, as set forth.

No. 24,965. Manufacture of Tablets, Blocks, Rollers, Pads, etc., for Inking or Serving with Colour Stamps, Dies, Types or Printing Forms.

(*Fabrication des Tables, Blocs, Rouleaux, Matelas, etc., pour Distribuer l'Encre ou les Couleurs aux Etampes, Caractères et Formes d'Imprimerie.*)

Henry C. Stephens (assignee of William J. Payne), London, Eng., 16th September, 1886; 5 years.

Claim.—As a new article of manufacture for inking a serving stamps, dies, types or formes with colour, a tablet block roller pad, or other piece, consisting of glycerine and gelatine, or their equivalent, mixed with water and dye, and cast in moulds, substantially as herein described.

No. 24,966. Cord Holder for Self-Binding Harvesters.

(*Porte-Ficelle pour Moissonneuses-Lieuses.*)

The Johnston Harvester Company (assignee of Orville Cooley) Batavia, N. Y., U. S., 16th September, 1886; 5 years.

Claim.—1st. The combination, in a grain binder, of the cam-wheel mounted upon the knitter driving shaft, remote and distinct from the knitter driving wheel, provided with the scroll-like spiral rib engaging the teeth of the gear wheel, journaled to the knitter-frame upon its outer vertical face, and meshing into its outer vertical face, and meshing into the pinion attached to the cord-holding disk, thereby forming a direct connection between the spiral cam-wheel and the disk, so that the latter will be moved one notch for each revolution of the said cam-wheel, and there retained in position, substantially as and for the purpose hereinbefore set forth. 2nd. In combination with the cord-holding disk and gear-wheels, the plate forming the heel extension of the bundle discharge arm, provided with means for securing the same to the knitter driving shaft, the scroll cam-wheel having the adjusting slots and the bolts for securing the scroll cam-wheel to the discharge arm plate, substantially as and for the purpose hereinbefore set forth. 3rd. The holder-shoe having the lobe at the pivoted end countersunk on both sides thereof, in order to permit a rolling motion of the shoe, in combination with the pivot bolt, and the knitter-frame having the longitudinal slot to receive the said bolt of the shoe and permit lateral adjustment of the same, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the cord-holder shoe, the pivoted knitter-jam and the L-shaped spring secured to the knitter-frame, one arm of said spring adapted to bear against the holder shoe and the other acting to operate the knitter-jaw, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the knitter-frame, the double-grooved cord-holding lever pivotally connected thereto at its upper end, the cord-holding disk having a single peripheral groove for the reception of the central rib of the holding lever the lever adjusting spring, the pinion secured to the cord-holding disk, the gear-wheel meshing into the pinion and co-acting with the spiral cam-wheel, substantially as and for the purpose hereinbefore set forth.

No. 24,967. Folding Table. (Table Pliante.)

Riley Decker and Cornelius S. Barrett, Charlotte, Mich., U. S., 16th September, 1886; 5 years.

Claim.—In a folding table, the combination of the leaves hinged together and each having a catch *m*, the turn bar pivoted upon one of the leaves, the round *n*, the legs hinged to the under side of the table and journaled upon the round, and the traces *c* attached to the round and the inner legs to prevent lateral movement of the latter upon the round, substantially as described.

No. 24,968. Abdominal Truss.

(*Bandage Herniaire.*)

Adeline M. L. Armstrong (assignee of James L. Armstrong), Ottawa, Ont., 16th September, 1886; 5 years.

Claim.—1st. A truss, consisting of a round wire spring band, having adjustable tubular sliding extensions, with covered disk ends, a de-

tachable sectional pad carried adjustably for position and pressure by means of an adjustable collar and coiled spring, such pad consisting of a back plate bezel and core, substantially as shown and described. 2nd. A truss pad, consisting of a detachable core held at its back edge in a bezel by a back plate detachably connected thereto at one end by a pin or hook on the plate engaging an eye in the bezel, and a notched stud on the bezel engaging an eye in the plate at the other end, the straight shank of a coiled spring adjustably secured to the plate by a stud passing through the same, and provided with a nut on the inside clamping the spring shank against said plate, substantially as shown and described. 3rd. The combination of a round wire band *A*, tubular extensions *A'*, each having a covered disk *A''* and connected by a set screw *a*, a collar *B*, set screw *B'* securing the said collar adjustably upon the band *A*, spring *C* coiled upon the band and held by the collar *B* and carrying the pad plate *D*, having pin *d*, bezel *E* having notched stud or button *e*, core *F* held in bezel *E*, stud *G* passing through plate *D* and provided with nut clamping, the spring shank *c* passing through said stud against the plate *D*, substantially as shown and described. 4th. The combination of a round wire band *A*, tubular extension slides *A'* and circular loops suitably covered to form disk *A''*, a set screw *a* near the end of the tube *A'* adapted to impinge upon the band *A*, substantially as shown and described. 5th. The combination of the band *A*, collar *B*, set screw *B'*, coiled spring *C*, shank *c*, stud *G*, nut *g* and plate *D*, substantially as shown and described. 6th. The combination of the coiled spring *C*, straight shank *c*, clamping stud *G*, plate *D*, bezel *E* and core *F*, substantially as shown and described. 7th. The combination of the plate *D*, pin *d*, bezel *E*, notched stud *e* and core *F*, substantially as shown and described. 8th. The combination of the collar *B*, set screw *B'*, spring *C*, spring shank *c*, plate *D*, bezel *E*, core *F* and stud *G*, substantially as shown and described.

No. 24,969. Railway Gate.

(*Barrière de Chemin de Fer.*)

John A. Smith, Drakes Creek, Ark., U. S., 20th September, 1886; 5 years.

Claim.—In an automatic gate, the combination of the slotted levers *D*, provided at their lower ends with the rods *l, p*, the gate sections having the upper and lower guide-rods *d*, the posts *C* provided with the pulleys *e*, and hooks or staples *f*, the brackets adapted to receive the rod *e* on the gate sections, and the rails hinged at *a* and provided with the cross ties *c*, having the slotted bearings *r* to engage the rods of the levers *D*, the whole arranged as shown, described and for the purpose specified.

No. 24,970. Fence. (Clôture.)

Lewis H. Colbert, Bluffton, Ind., U. S., 20th September, 1886; 5 years.

Claim.—The combination of the inclined post *A*, the stake *B* driven in the ground at a distance from the inner side of the post, the inclined brace *C* attached near its upper end to the post *A*, and having its said upper end projecting beyond the latter, the rails *B* on the outer side of the inclined post, and the wire *D* attached to the upper end of the brace *C* extending down on the outer sides of the rails *B*, and back under the lower of the said rails, and having its rear end attached to the stake *B* and to the lower end of the brace, thereby securing them together, supporting the rails and bracing the post, substantially as described.

No. 24,971. Embalming and Laying Out Board. (Table pour Embaumer et Enterrevelr.)

The Economy Manufacturing Company (assignee of Noah T. Shaw), Columbus, Ohio, U. S., 20th September, 1886; 5 years.

Claim.—1st. The combination, with the hinged frame sections, of the hinged end legs *c*, the brace rods *f, j*, hinged to the head and foot ends of the said frame sections, and connected to the said leg cross-bars, and the clamp screws *g* in the said cross-bars, whereby the legs are adjusted to set the table as may be desired, for the purpose described. 2nd. The combination, with the hinged frame sections, of the hinged end and middle legs, the brace rods *e* and *f, f*, the latter passing through the cross bars of the end legs, and retaining their connection therewith, and the clamp screws *g* in said leg-bars, whereby the table can be turned and supported upon the middle legs in the operation of adjusting it to a horizontal or to an inclined position, for the purpose described.

No. 24,972. Steam Boiler. (Chaudière à Vapeur.)

George F. Burnett, St. Hyacinthe (assignee of John Foster, St. Simon), Que., 20th September, 1886; 5 years.

Claim.—1st. The combination of the outer shell *A*, having inner casing *B*, with the barrel *E* and fire-box *G*, the whole constructed and arranged substantially as described. 2nd. The novel arrangement and construction in a boiler, of an outer boiler arranged with an inner sub-boiler or barrel, provided with tubes, arranged as described, whereby the products of combustion are caused to envelop the said inner sub-boiler or barrel, substantially as described.

No. 24,973. Paper Trimming Machine.

(*Machine à Ebarber le Papier.*)

Frank M. Edmunds, Franklin Falls, N. H., U. S., 21st September, 1886; 5 years.

Claim.—In a paper-trimming machine, the cutters to trim the edges of the web, combined with pipes having open mouths to receive the ribbons or strips of paper cut from the web, and also the dust present at such operation, and with an exhaust apparatus to suck and take away from the trimming machine the said ribbons or strips of paper and dust, all substantially as described.

No. 24,974. Adjustable Carriage for Saw Mills. (*Charriot Mobile de Scierie.*)

George Strong, South Rockwood, Mich., U. S., 21st September, 1886; 5 years.

Claim.—1st. A carriage for saw or bolt mills, consisting of the frame A, the arms C connected by the braces U, G, the shaft F passing through the arms C and resting on the boxes B, thus giving the carriage its rotary motion. 2d. A carriage for saw or bolt mills, provided at its rear end with a suspended gearing being made to engage with the cogs of the wheel J, for raising and lowering the rear end of the carriage, as and for the purposes herein specified. 3d. A carriage for saw or bolt mills, provided with a shaft H, and having mounted thereon the wheel J, the cogs of which mesh with the gearing H, said wheel being operated by means of the lever M which is secured to the outer end of the shaft R, as and for the purposes herein described. 4th. A carriage for saw or bolt mills, said carriage being operated by the gearing H, the wheel J, and leaves M, said lever being held in the required position by means of the notches d in the quadrant L, all substantially and for the purposes herein set forth.

No. 24,975. Process for Purifying and Preparing Gypsum or Sulphate of Lime. (*Procédé pour Epurer et Préparer le Gypse ou la Chaux Sulfatée Hydratée.*)

William Manning, Boston, Mass., U. S., 21st September, 1886; 5 years.

Claim.—1st. The process, hereinbefore described, of treating gypsum, the same consisting of crushing, grinding calcination and agitation in water until disintegration is completed, then floating the same in a floating apparatus to effect purification and uniformity of grain, then forcing the water in which the gypsum is contained through filter presses, then subjecting the resulting cakes to heat to effect drying, and finally crushing or grinding the same to an impalpable powder, as substantially set forth. 2nd. As a new article of manufacture, alabaster, in the form of an impalpable powder, made and prepared as hereinbefore described.

No. 24,976. Adjustable Window Shaving Mirror. (*Miroir à Barbe à Griffes.*)

Sydney A. Phillips, New York, N. Y., U. S., 21st September, 1886; 5 years.

Claim.—1st. An improved article of manufacture, a mirror, provided with a clamp rigidly secured to its back to adapt it to be secured to a window-sash, as set forth. 2nd. The combination, with a mirror, of a U-shaped clamping bar D rigidly secured to the back of the mirror, with its arms projecting therefrom, and having a screw-threaded hole in one of its arms, and a hand-screw E working in the screw-threaded hole of the arm of the said bar, substantially as herein shown and described.

No. 24,977. Hoisting Machine. (*Ascenseur*)

Alexander Robertson and James Robertson, Welland, Ont., 21st September, 1886; 5 years.

Claim.—1st. In a hoisting machine, in which the power is applied to the top of a vertical shaft, the bracket or frame A, A, placed longitudinally, in which is journaled or otherwise secured the main or drum shaft S, the vertical shaft B, and the shaft I, substantially as and for the purpose specified. 2nd. In a hoisting machine, in which the power is applied through a vertical shaft, a gear C secured to the vertical shaft, and having two bevel faces with cog gearing formed thereon, substantially as and for the purpose specified. 3rd. In a hoisting machine, in which the motive power is communicated to the rope drums through an adjustable friction clutch, a gear wheel F journaled upon the drum shaft, and having formed upon or attached to it an annular flange G to engage with a friction belt, substantially as and for the purpose specified. 4th. In a hoisting machine, in which the drums are journaled upon the shaft, the drum shaft B rigidly secured to the frame, substantially as and for the purpose specified. 5th. In a hoisting machine, in which the motive power is communicated to the rope drums through an adjustable friction clutch, a friction belt J having two or more turns around a friction flange, one end of the belt being rigidly attached to the drum and the other end to a swinging arm, substantially as and for the purpose specified. 6th. In a hoisting machine, in which the motive power is communicated to the rope drums through an adjustable friction clutch, a screw L having an annular or curved groove or grooves formed upon or attached to its periphery, substantially as and for the purpose specified.

No. 24,978. Railway Crossing Gate or Signal, and Electrical Means for Automatically Operating it. (*Barrière de Passage à Niveau ou Signal de Chemin de Fer et Appareil Electrique pour le Faire Fonctionner Automatiquement.*)

Theodore A. B. Putnam, New York, N. Y., U. S., 21st September, 1886; 5 years.

Claim.—1st. The combination, with a railway track, of a gate or signal at a road or street crossing, adapted to close across said road or street and to open and clear the same, means for causing said gate when standing normally open to close itself, a detent normally restraining said gate from so closing, a signal-transmitting point located at a distance up the track, suitable connection between said detent and said point, whereby on the passage of a train past such point the detent is withdrawn and the gate permitted to close, and the treadle on the track in proximity to the crossing adapted when acted on by the passage of a train to impart to said gate a tendency to open, substantially as and for the purposes set forth. 2nd. The combination,

to form an automatic railway gate or signal, of a walking beam or lever normally tilted to an inclination, a carriage rolling thereon and normally supported on its higher arm, a gate or signal depending from said carriage, a detent restraining said carriage from rolling down said lever, suitable means connected with a remote signal-transmitting point for withdrawing said detent, and a treadle connected with said lever and adapted, when depressed by the passage of a train, to tilt said lever to the opposite inclination, and thereby impart to said carriage a tendency to travel to the arm of the lever on which it is normally supported, substantially as set forth. 3rd. The combination, with a railway track, of a gate or signal at a road or street crossing adapted to close across said road or street and to open or clear the same, means for causing said gate, when standing normally open, to close itself, a detent normally restraining said gate from so closing, a signal-transmitting point located at a distance up the track, suitable connection between said detent and said point, whereby, on the passage of a train past such point, the detent is withdrawn and the gate permitted to close, a treadle on the track in proximity to the crossing, adapted, when acted on by the passage of a train, to impart to said gate a tendency to open a detent engaging said gate when closed, and restraining it from opening a signalling point on the track beyond the crossing, and suitable connection between said point and said detent, whereby the passage of the train past said point will cause the withdrawal of the detent and permit the gate to open, substantially as set forth. 4th. A walking beam or lever, arranged approximately parallel to a railway track with one of its arms extending over and across a road or street crossing of said track, and standing normally inclined with said arm lower than its opposite arm, in combination with a carriage adapted to roll on and along said lever, with means for tilting said lever to the opposite inclination, and with suitable detents for retaining said carriage at either end of said lever, and restraining it from rolling down the inclined surface thereof, substantially as set forth. 5th. As a means of operating railway gates or signals, a walking beam or lever adapted to be inclined in both directions from the horizontal and normally standing inclined in one direction, in combination with means for causing it to tend always to assume such position with a treadle on the track, adapted to be operated by the passage of a locomotive or train, and suitably connected with said lever, whereby the latter will be tilted to the opposite of its normal position on the operation of said treadle with a detent adapted to engage the lever when so shifted from the treadle, and suitable means, substantially as set forth, for disengaging said detent and thereby releasing the lever. 6th. The combination to form a railway crossing-gate or signal, of a walking beam or lever arranged alongside the track and extending across the street or road, counterweighted at one end, or otherwise tending to assume an inclined position, a carriage rolling along said lever, suitable detents adapted to engage said carriage when at opposite ends of said lever, and to restrain it from running down the inclined surface thereof, a treadle on the track adjacent to the crossing, suitable connecting mechanism between said treadle and lever, whereby the passage of a train past the crossing operates said treadle and tilts said lever into a position inclined in the opposite direction to its normal position, and a suitable pawl or detent adapted to engage the lever when so tilted and restrain it from returning to its normal position, substantially as set forth. 7th. The combination of walking-beam or lever F, its counter-weight F', carriage G, detents I, J adapted to engage said carriage track-treadle K, suitable connecting mechanism between it and said lever, and detent L adapted to engage said lever when tilted to the opposite of its normal position and to be disengaged by impact of said carriage, substantially as set forth.

No. 24,979. Boot. (*Botte.*)

Oudif Lemay, Montreal, Que., 21st September, 1886; 5 years.

Claim.—1st. A blank, made of a single piece of leather, and forming, when folded, the upper complete, and an outside heel counter. 2d. A boot or shoe upper composed of a single piece of leather, of the shape shown and described, with cut B folded at a and F, E' and sewn along the line c, e, g, all as herein set forth and for the purpose described.

No. 24,980. Lacing Stud. (*Bouton à Lacer.*)

Francis M. Piper and James H. Reed, Lynn, Mass., U. S., 21st September, 1886; 5 years.

Claim.—1st. An improved manufacture, a lacing stud blank of the form shown, cut from sheet metal and having the portion designed to form the crown of the stud of a convex shape, said crown being provided with downwardly projecting edges A, and having at one end a beak which will project when the stud is formed downward to the level of the plate, and at the other a neck and a plate c, provided with means whereby the finished stud may be secured to the material, substantially as shown and described. 2d. A lacing stud having a crown substantially parallel with the plate, and provided with downwardly-projecting edges, a beak projecting downwardly toward the plate, a curved neck supporting the crown, and a plate located beneath the crown and provided with means whereby the stud may be secured to the material, substantially as set forth.

No. 24,981. Churn Power. (*Moteur de Baratte.*)

Charles J. Felrath, Gatesville, Texas, U. S., 21st September, 1886; 5 years.

Claim.—1st. The combination, with the standards A, of the vertically-adjustable frame B, having a vertical opening about its middle, with a horizontal journal bearing at one end carrying a vertical fly-wheel and crank, and a horizontal and vertical journal, bearing at the other end the first carrying a vertical toothed segment, a pinion connecting the fly-wheel and segment, and a pinion and shaft-socket arranged about a vertical axis and deriving motion from the toothed segment, substantially as described. 2nd. The combination of the standard A, having squared upper end, the sliding balanced frame B with set screw b, the crank D and fly-wheel E arranged at one end of frame B, the toothed segment E, pinion F, pinion f and shaft-socket g, substantially as shown and described.

No. 24,982. Method of Setting Wheel Tyres.*(Manière de Poser les Baudages des Roues.)*

Peter Francis, Uxbridge, Ont., 21st September, 1886; 5 years.

Claim—The combination of the heads A, A, and screw-bolt c, cap G, bolt B, felloe D and tire E, substantially as hereinbefore set forth.**No. 24,983. Steam Heater. (Calorifère à Vapeur.)**

William C. Bronson, Saratoga Springs, N. Y., U. S., 21st September, 1886; 5 years.

Claim—In a steam-heater, the combination, with the tubes F, J, M, H and the chute L, of the water-chamber I having curved aperture N for the passage of the products of combustion, and central aperture K for the passage of the coal, substantially as herein shown and described, whereby the products of combustion have a free upward passage and the lower end of the chute is protected from the fire, as set forth.**No. 24,984. Sewing Machine. (Machine à Coudre.)**

Lewis S. Bortree, Toledo, Ohio, U.S., 1886; 5 years.

Claim—1st. The combination, in a sewing-machine, of a shuttle pointed at opposite ends, and provided with the tension spring, as described, the shuttle-carrier arm, the yoke pivoted thereto and provided with the depending arms and the drive-shaft and cam, substantially as specified. 2nd. The combination, in a sewing-machine, of a sliding yoke, provided with arms, as set forth, and connected with the shuttle-carrier, and the drive-shaft carrying the cam provided with the wings to engage the arms of the yoke, substantially as specified. 3rd. In a sewing-machine, the combination, with the drive-shaft, of a sliding rotative cam thereon, and a sliding yoke adapted to be moved by the said cam and connected with a double acting shuttle, substantially as specified. 4th. The combination, in a sewing-machine, of the drive-shaft, a grooved cylinder thereon, a switch engaging the groove of the cylinder, a sliding rotative cam and a sliding yoke having connection with a double-acting shuttle-carrier, substantially as specified.**No. 24,985. Alarm for Doors, etc.***(Sonnerie pour Portes, etc.)*

Naham J. Busby, Maplewood, Mass., U. S., 21st September, 1886. 5 years.

Claim—1st. The combination, with a bell, and mechanism, substantially as described, for repeatedly sounding it, and with the operative wire provided with means of pulling it, as described, of the bent wire or take-up K applied to the frame it, and the shaft of the hooked arm L, or catch of the scape wheel of the said bell-sounding mechanism, all being essentially as set forth. 2nd. The combination, with the bell and its sounding mechanism, and the supporting frame thereof, of the bracket arranged with such frame, as represented, and provided with the ear, as described, for reception of the actuating wire, and to serve therewith as a means of arresting the knob in its backward pull, as explained. 3rd. The combination, with the bell and its sounding mechanism, and the supporting frame thereof, and with the actuating wire and the take-up K thereof, as described, of the stationary ear for reception of the said wire, and to serve with it as means of arresting the downward movement of the said take-up, all being substantially as set forth.**No. 24,986. Lasting Tack Strip.***(Broguettes Ramées Solides.)*

Frank Chase, Boston, Mass., U.S., 21st September, 1886; 5 years.

Claim—A lasting tack strip, consisting of wire bent at intervals into loops, pressed into tack form and pointed, substantially as and for the purposes hereinbefore set forth.**No. 24,987. Circulating Boiler.***(Chaudière de Calorifère.)*

William Schimpf and Othnel A. Kora, Shenandoah, Penn., U. S., 21st September, 1886; 5 years.

Claim—In a circulating boiler, the combination, with the boiler having downwardly-projecting extensions, of the fire-box consisting of two shells and connecting rings forming the water space, an inverted T-formed pipe connecting the fire-box water space with the boiler proper, and side pipes connecting said water space with the extended sides of the boiler, substantially as described.**No. 24,988. Brace. (Bretelle.)**

Henry Beaudry, Montreal, Que., 22nd September, 1886; 5 years.

Claim—In combination with the end of a brace strap, a reinforcement of same running transversely across such strap just below the button hole and independently of the stitching round same, all as herein set forth.**No. 24,989. Wire Straining Machine.***(Machine à Tendre le Fil de Fer.)*

John Reid, Dunedin, N.Z., 22nd September, 1886; 5 years.

Claim—1st. The body of the wire-straining machine, composed of the parts marked by the letters A to A₄, A₅, A₁₁ and A₁₂, in combination with its attached retaining pin A₃, its cam-gripper C, and the springs A₇ and A₉, substantially as and for the purposes herein described and illustrated in the drawings. 2nd. The combination of the body A, and its appurtenant parts, with the combined reel and lever marked by the letters B to B₄, and D to D₂, substantially as herein described and as illustrated in the drawings.**No. 24,990. Horse Shoe Pad.***Bourrelet de Fer à Cheval.)*

David Meredith, Syracuse, N. Y., U. S., 22nd September, 1886; 5 years.

Claim—1st. The improved horseshoe-pad having its perimotor corresponding to the inner edge of the shoe, and composed of the metal plate A, leather disk B, reinforcing rim d, provided with the lug a, the leather cover f, and pivoted keys b, b, b, substantially as described and shown. 2nd. In combination with a horseshoe, the plates A, B and d fitted to abut against the inner edge of the shoe, the lug a, pivoted keys b, and the cross-bar C attached to the underside of the plate A and projecting over the bottom of the shoe, substantially as described and shown. 3rd. In combination with the horseshoe pad having pivoted keys b, b, provided with heads e, as shown, the cross-bar C fixed to the underside of the pad, and having apertures n surrounding the heads e, substantially as described and shown.**No. 24,991. Clothes Dryer. (Séchoir à Linge.)**

Louis E. Hastings, Indianapolis, Ind., U.S., 22nd September, 1886; 5 years.

Claim—1st. The above-described clothes-dryer consisting of the plate A, having standards B, arms c and bars d formed integral therewith, and a series of drier-arms H having notches a and j, all combined and arranged to co-operate as and for the purpose specified. 2nd. In a clothes-dryer, the combination, with plate A having standard B, arms c and bars d formed integral therewith, and a series of drier-arms H of the flange F formed integral with the plate, and arranged substantially as specified.**No. 24,992. Fastening for Railway Rails,***Rail Joints, etc. (Boulon Cousinnet pour Assujétir les Rails, les Joints des Rails, etc., de Chemins de Fer.)*

Alfred B. Ibbotson, Sheffield, Eng., 22nd September, 1886; 5 years.

Claim—1st. A staple formed or double bolt, wherein the cross-bar is made with a central bearing surface, connected with the shanks by bent or curved corner portions, so formed as to prevent their serving as bearing surfaces, substantially as and for the purpose set forth. 2nd. A screw-bolt, provided at its neck or part adjacent to its head with screw-threads differing from those which enter the nut either in their diameter, their pitch, or their direction or in any or all of these particulars, for the purpose specified. 3rd. The combination, with a screw-bolt provided at its neck or part adjacent to its head with screw-threads, differing from those which enter the nut either in their diameter, their pitch, or their direction, or in any or all of these particulars, of an "Ibbotson" lock-nut, for the purposes specified. 4th. A fastener for the purposes specified, consisting of a plate having secured therein two or more screw-bolts, provided at their necks or parts adjacent to their heads, with screw-threads differing from those which enter the nut either in their diameter, their pitch, or their direction, or in any or all of these particulars, substantially as set forth. 5th. The combination, with a fastener of the kind above described, of means for holding the same in place when the nuts are slackened or taken off, substantially as and for the purpose set forth. 6th. The combination, with a railway rail and sleeper, of the devices for securing the rail, substantially as above described and as shown. 7th. A rail joint in which the fish-plates are secured by my improved fastening devices, substantially as described with reference to Fig. 6 of the drawings. 8th. The combination, with the fish-plate C, of the screw-bolts d, screw-threaded at their necks, and inserted in tapped holes in the said fish-plate, substantially as and for the purpose set forth. 9th. The combination of the cross-bar D₂, the shanks at connected therewith by the bent or curved corner portions d₃, and one or more intermediate screw-bolts d₅ screw-threaded at their necks and inserted in tapped holes in the said cross-necks, and inserted in tapped holes in the said cross-bar, substantially as and for the purpose set forth.**No. 24,993. Combination Knife, Ink Eraser,***Paper Cutter and Pencil Sharpener. (Cunif, Grattoir, Ploir et Taille-Crayon Combinés.)*

John W. L. Hillman, Fair Haven, Mass., U.S., 22nd September, 1886; 5 years.

Claim—1st. The combination, with a knife-handle having longitudinal blade-receiving slot, and a cone-shaped recess in one end, of a blade pivoted in said handle and having its outer end tapered to conform to said cone-shaped recess, and bevelled upon one side only, substantially as set forth. 2nd. The combination, in a knife-handle J, N, L, H, of a split cone J, K, H, in the end of the handle J, N, L, H, with the blade D passing into split cone J, K, H, when closed, substantially as set forth.**No. 24,994. Kerosene Lamp Without Chimney.***(Lampe à Kérosène sans Cheminée.)*

Richard M. Wanzel, Hamilton, Ont., (assignee of Abel G. Heath, New York, N. Y., U.S.) 23rd September, 1886; 5 years.

Claim—1st. In combination with a lamp without a chimney, of a central air tube E, the same enclosing a fan G, driven by wheel movement on the outside of said tube E, to supply fresh oxygen to the burner and prevent charred wick and oil drip from it to drop on and clog the wheel movement, substantially as specified. 2nd. In combination with the tube E, of the bracket M secured on the outside of the said tube, by which the spindles of the wheel movement may have their bearing on tube and bracket, substantially as and for the purpose specified. 3rd. The combination of a central air tube E, fan G enclosed in the same, and clock movement placed on the exterior of said tube to drive the fan, substantially as specified. 4th. In

combination with the central tube E, fan G and clock movement on the outside of tube, of the stop U, substantially as and for the purpose specified.

No. 24,995. Screw Conveyer. (*Vis Sansfin*.)

James A. Gowans, Henry E. Gates, Stratford, Ont., and John M. Duncan, Boston, Mass., U.S., 23rd September, 1886; 5 years.

Claim.—1st. The combination, with a conveyer shaft, of a flight provided with a loop or open frame, which surrounds the shaft loosely, and a fastening, whereby said loop or frame is adjustably secured to the shaft, substantially as set forth. 2nd. The combination, with the conveyer shaft, of a flight provided with a loop C and a set screw d and t, e, whereby the flight is adjustably secured to the shaft, substantially as set forth. 3rd. The combination with the conveyer shaft, of a flight provided with a loop C having V-shaped bearing surfaces g, p on its inner sides, substantially as set forth. 4th. The combination, with the conveyer shaft, of adjustable flights pivotally secured to the shaft, and a rod, whereby the flights are connected and adjusted simultaneously, substantially as set forth. 5th. The combination, with the conveyer shaft of adjustable flights pivotally secured to the shaft, a rod, whereby the flights are connected and adjusted simultaneously, and a clamp, which is secured to the shaft and on which said rod is secured, substantially as set forth. 6th. The combination, with the conveyer shaft of adjustable flights provided with loops, which surround the shaft loosely, a rod, whereby the flights are connected, and a fastening, whereby the flights are adjustably secured in place, substantially as set forth. 7th. The combination, with the conveyer shaft, of adjustable flights provided with loops C, a rod H connecting the flights, and a clamp I secured to the shaft and provided with jaws J, in which the rod is guided, substantially as set forth. 8th. The combination, with the conveyer shaft, of a corrugated flight adjustably secured to said shaft, substantially as set forth.

No. 24,996. Stump Puller. (*Arrache-Saucle*.)

James H. Riddle, Rockton, (assignee of James L. Martin, Dockor's Point, Penn., U.S., 23rd September, 1886; 5 years.

Claim.—1st. In a stump-puller, the combination, with the supporting-frame, of a hook D, lever E and grip H, and connecting links, a grip U connected to the lever E, by a link C, a manipulating-lever F connected to the lever E by a link B, and a lifting-bar K, substantially as described. 2nd. The herein-described grip provided with the steel plug h, and the slot g and the shoulder o, substantially as described. 3rd. In a stump-puller, the combination of the following elements: supporting-frame hook D, levers E, F, links a, b, and p, grips G and H, formed with shoulders o and steel plugs h, and a bar K, substantially as set forth.

No. 24,997. Stove Pipe Damper.

(*Clé de Tuyau de Poêle*.)

Charles G. Shepard and Walter J. Shepard, Buffalo, N. Y., (assignees of Charles W. Lasher, Davenport, Iowa), U. S., 23rd September, 1886; 5 years.

Claim.—1st. The combination, with a suitable damper-blade, of the rod C passing through and fastened to said blade, and having at one end the knob H, and at the other the slot M, the sleeve G loosely mounted on said rod, and the tapered collar M, N, fitting in said slot and adapted to force the sleeve away from said slot and toward said knob, substantially as shown and described and for the purpose set forth. 2nd. The combination, with a damper-blade B, and a rod C passing through and supporting the same, of a sleeve G loosely mounted on the rod, a hollow handle F formed integrally with the sleeve, and a key or collar M, N, lying within said hollow handle and passing through said rod, whereby the handle is secured on the rod, substantially as shown and described and for the purpose set forth.

No. 24,998. Automatic Lubricator for Machinery. (*Graisneur Automatique de Machine*.)

Henry J. Delaney and Robert C. Giljohann, (assignees of Frank H. Bolto), Milwaukee, Wis., U.S., 23rd September, 1886; 5 years.

Claim.—1st. The combination, with the receptacle of a lubricator-cup of a piston, a screw or piston rod operating said piston, a coiled spring affixed at one end to said screw or piston rod, and at its other end to an inclosing cover for winding and holding the outer end of said spring when wound, substantially as set forth. 2nd. The combination of the receptacle A having a discharge duct E, piston F having a central screw-cut aperture, screw H, cover O, spring G, and cover K, said spring being affixed at one end to screw H, and at the other end to said cover, as set forth. 3rd. The combination, with the receptacle A, piston E, screw H, and spring G, of the cover O provided with catch or pawl N, and the cover K provided with an annular ratchet M, substantially as and for the purpose specified. 4th. The combination, with the cover O provided with catch N, and cover K provided with ratchet M engaging upon said pawl, of the spring P and knob R, said spring being interposed between said cover K and said knob, and adapted to hold said ratchet down upon said pawl while it yields, to permit said ratchet to be turned over said pawl while winding said spring, as set forth.

No. 24,999. Horse Blanket.

(*Couverture de Cheval*.)

Edward M. Henoy, Montreal, Que., 23rd September, 1886; 5 years.

Claim.—As a new article of manufacture, a horse blanket cut from a jute body and felt lining quilted together, all as and for the purpose set forth.

No. 25,000. Hydraulic and other Cements.

(*Ciment Hydraulique et autres*.)

Robert Bosso and Franz Wollers, Brunswick, Germany, 24th September, 1886; 5 years.

Claim.—1st. As a new article of manufacture, the herein-described hydraulic cement in which the particles have a soft silky feel, greasy to the touch, instead of being sandy and sharp, and which has the peculiar qualities, herein set forth. 2nd. The process of making hydraulic cement, which consists in slacking hot slag, such as described, in water, taking a mixture of the granulated and dried result with or without previous grinding, and sifting slacked lime and silicic acid if required, in the chemical proportions requisite to produce cement, and submitting the mixture to a supplementary or finishing treatment in a ball mill, or a machine with a similar action and effect, but without further calcination, substantially as described. 3rd. The process of making hydraulic cement, which consists in mixing slags, ground and sifted, with slacked lime and silicic acid if required, in the chemical proportions requisite to produce cement, and submitting the mixture to a supplementary or finishing treatment in a ball mill, or a machine with a similar action and effect, but without calcination, substantially as described. 4th. The improvement in the process of manufacturing hydraulic cement, which consists in pouring hot slag, such as described, into water and drying finely, grinding, sifting and mixing, the resultant with slacked lime and silicic acid if required without further calcination, substantially as described. 5th. The manufacture and use, for cement making, of the hereinbefore described improved ball mill in which a large number of balls of 2 inches diameter downwards are used to effect the comminution, and in which the cement is separated from the balls on completion by means of a stationary grate, and in which the filling and emptying of the machine is effected while it is running, substantially as described. 6th. The improvement in the process of making hydraulic cement, which consists in taking combined silicic acid, alumina and lime in the proportions requisite to form hydraulic cement, mixing and grinding the same, and submitting them to a further pounding and rubbing action, substantially in the manner described. 7th. The improvement in the process of making cements hydraulic, which consists in taking the ground cement and submitting it to a supplementary grinding or pounding in a ball mill, such as described, whereby the particles acquire a fine silky lamellar structure, substantially as described.

No. 25,001. Pulp Digester for Paper Making. (*Pourrissoir de Papeterie*.)

George W. Russell, Lawrence, Mass., U. S., 24th September, 1886; 5 years.

Claim.—1st. In a pulp-making apparatus, a boiler provided with a compound lining composed of sections of cast or wrought metal plate, provided with projections or prongs and having a cast metal face held in place by the said prongs, the said sections being placed in the metal boiler and having their lead-coated edges soldered or fused together, substantially as described. 2nd. In a pulp-making apparatus, a boiler provided with a compound lining composed of sections of cast or wrought metal plate, provided with projections or prongs and having a cast metal face held in place by the said prongs, the said sections being placed in the metal boiler and having their lead-coated edges soldered or fused together, combined with lead-covered section-holding rings, substantially as described.

No. 25,002. Manufacture of Shovels.

(*Fabrication des Pelles*.)

Edward L. Fenerty, Halifax, N.S., 24th September, 1886; 5 years.

Claim.—1st. A shovel socket suitably countersunk or bevelled on its inside upper edge, substantially as and for the purpose set forth. 2nd. A socket shovel having a covering plate secured to the pan and socket, substantially as and for the purpose set forth.

No. 25,003. Manufacture of Sulphuric Acid and Cement. (*Fabrication de l'Acide et du Ciment Sulfureux*.)

Uriah Cummings, Buffalo, N.Y., U.S., 24th September, 1886; 5 years.

Claim.—1st. The herein-described method of manufacturing sulphuric acid, which consists in calcining a mixture of clay and sulphate of lime, substantially in the proportions specified, and recovering the sulphuric acid which is driven off, substantially as set forth. 2nd. In the manufacture of sulphuric acid, the herein-described method of producing hydraulic or Portland cement as a by-product, which consists in calcining a mixture of clay and sulphate of lime in the proportions to form a hydraulic or Portland cement, substantially as set forth. 3rd. The herein-described method of manufacturing hydraulic or Portland cement, which consists in calcining a mixture of clay and sulphate of lime, substantially in the proportions specified and set forth.

No. 25,004. Double-Acting Steam Pump.

(*Pompe à Vapeur à Double Action*.)

James D. Bain, Hamilton, Ont., 24th September, 1886; 5 years.

Claim.—In a double-acting steam pump, the combination and arrangement of the several parts, which constitute the general design, as set forth, in the drawing, namely, the cylinder B with its steam chest C, and the stand A with its two bearings L, cast to or secured to the end of said cylinder, the cylinder and pump rod H, cross-bars F, slide C, connecting rods e, cranks e', fly wheels M, eccentric K, rod J, oscillating arm J, and valve spindle L, all operating together and in connection with the pump D, with its air valve D1 and pipes D2, substantially as and for the purpose hereinbefore set forth.

No. 25,005. Base Burning Stove for Steam Heating Boilers. (*Poêle à Foyer Bas pour Chaudières de Calorifères à Vapeur.*)

William B. Dunning, Geneva, N. Y., U. S., 24th September, 1886; 5 years.

Claim.—1st. In a steam heating apparatus, the combination of an annular water chamber and a central fuel reservoir, arranged within the said annular boiler and resting upon the top thereof, with an annular space between the magazine, and substantially as specified. 2nd. The combination, in a steam heating apparatus, of an annular boiler, a centrally-arranged fuel reservoir, vertical pipes for the passage of the products of combustion, a direct flue (with damper) to the chimney, and a smoke chamber wholly exterior to said boiler, substantially as set forth. 3rd. The combination of an annular boiler, an interior centrally located reservoir, an annular space between the said reservoir and boiler for the passage of the products of combustion, smoke flues in the annular boiler, an upward direct draft pipe through the dome to the chimney, and an exterior smoke chamber, all arranged substantially as set forth. 4th. The combination of a central magazine resting at its top upon an annular boiler, smoke-passages between said magazine and boiler, an upward direct draft flue through the dome, side draft opening and descending flues for the products of combustion, substantially as set forth. 5th. The combination, in an annular boiler, a central magazine, ascending direct and descending flues, and a steam drum connected with said boiler, substantially as set forth. 6th. The combination of the central magazine B, the annular boiler A, the annular smoke passages between the reservoir and the boiler, the descending flues a, the direct upward smoke flue A', and the annular smoke chamber D, the parts being all constructed and arranged substantially as set forth.

No. 25,006. Attachment to Carding Machine. (*Appareil de Machine à Carder.*)

William D Van Egmond, Seaforth, Ont., 24th September, 1886; 5 years.

Claim.—As an attachment to a finisher carding machine, the lick rim or tumbler E containing narrow strips of card clothing, in combination with the feed-rollers D and drum C, for the purpose of producing spotted, clouded or variable-colored roving on the wool in process of carding, substantially as shown and for the purpose specified.

No. 25,007. Running Gear for Vehicles. (*Train de Voiture.*)

Stephen Burdall, Fremont, Ohio, U. S., 24th September, 1886; 5 years.

Claim.—1st. In a running gear for vehicles, the combination, with fifth-wheel plates, each having segmental lugs or rub-irons extending in front and behind the same, and each provided with a rearwardly-extending arm, of the strap II secured to the reach and connected at its front end to the upper plate of the fifth-wheel in front of the axle, and the king-bolt passing through said rearwardly-projecting arms and through the strap, substantially as set forth. 2nd. In a running gear for vehicles, the combination, with fifth-wheel plates, the upper plate being provided on its lower or bearing fall with transverse ribs integral therewith, and each provided with a rearwardly-extending arm, of a reach secured to the rearwardly-projecting arm of the upper plate of the fifth-wheel, a strap II secured to the reach and connected to said upper plate in front of the axle, and a king-bolt passing through both of said rearwardly-projecting arms and through the strap, substantially as set forth.

No. 25,008. Horse Shoe. (*Per à Cheval.*)

Hurold Holland, Lynn, Mass., U. S., 24th September, 1886; 5 years.

Claim.—1st. In a horse shoe, the body A provided with the holes x, f, and socket E, the calk C, provided with the shank m, having the hole z, the pin D provided with the groove t, and the loop H, combined and arranged to operate, substantially as described. 2nd. In a horse shoe, a detachable calk, a pin for securing said calk in the shoe, and a loop or fastener for locking said pin, said loop or fastener when in use being disposed in a socket formed in the body of the shoe, whereby it is prevented from being readily broken or worn out, substantially as set forth. 3rd. In a horse shoe, the calk C having the shank m provided with the hole z, in combination with the body A provided with the holes x, f, a, pin for securing the calk in the shoe, and a device for locking the pin, the hole z being so disposed that when the shank m is inserted in the hole x and the shoe is in position for use, the hole z will be slightly below the plane of the hole f, whereby a strain will be exerted by the pin to draw the shoulders of the calk against the under side of the shoe and hold it firmly in position, substantially as described. 4th. In a horse shoe, the loop H having the eye h, in combination with the pin D, having the groove t for securing said pin in the shoe, substantially as set forth. 5th. In a horse shoe, the pin D provided with the annular groove t for receiving a wire adapted to retain the pin in the shank of the calk, substantially as described. 6th. In a horse shoe, the projection J provided with the socket E disposed opposite the inner side of the toe-calk B, for receiving the pin D, and a loop or fastener for securing said pin in the calk, substantially as set forth.

No. 25,009. Ventilating Attachment for Stoves. (*Appareil de Ventilation pour Poêles.*)

Warren M. Brinkerhoff, Auburn, N. Y., U. S., 24th September, 1886; 5 years.

Claim.—1st. The combination, with a stove, of a ventilating passage separate from the flues of the stove, communicating with the outer air at its lower end, rising therefrom, adjacent to the wall of the stove to a point above the lower wall of the smoke outlet, and provided with an outward turn and discharging into the outlet, sub-

stantially as described. 2nd. The combination, with a stove having an opening through the side of the stove body forming the smoke outlet, of a ventilating passage separate from the flues of the stove communicating with the outer air at its lower end, rising therefrom, adjacent to the wall of the stove body, to a point above the lower wall, and below the upper wall of the smoke outlet, and provided with an outward turn and discharging into the outlet, the said turn and portion of the passage being located in the path of the products of combustion, substantially as described.

No. 25,010. Gas Burner Tip. (*Bout de Bec à Gaz.*)

Eddy T. Thomas, New York, N. Y., U. S., 24th September, 1886; 5 years.

Claim.—1st. A gas tip burner made in sections, as and for the purpose specified. 2nd. A gas tip burner divided in two sections on the flue of the slot d, as and for the purpose specified. 3rd. A gas tip burner divided in two sections and having locking devices n and m, as and for the purpose specified. 4th. A gas tip burner made in sections and provided with rings C, or other means to designate the size of the burner, as and for the purpose specified. 5th. A gas tip burner made in sections and provided with collar I part b, as and for the purpose specified. 6th. A gas tip burner made in sections and having outer walls tapering towards the bottom, as and for the purpose specified. 7th. A gas tip burner formed in sections and moulded from clay or any earthy substances, as and for the purpose specified. 8th. A gas tip burner formed in sections, in combination with a barrel or pipe o, as and for the purpose specified.

No. 25,011. Vapour Bath. (*Bain à Vapeur.*)

Carrie A. Munro, Olive Branch, Ohio, U. S., 24th September, 1886; 5 years.

Claim.—1st. A vapour bath, formed of a series of tubular telescopic sections, the intermediate section being open at both ends, and the outer sections being open at their ends adjacent to the intermediate sections, and forming close joints therewith when extended, substantially as set forth. 2nd. A vapour bath, comprising the tubular sections A, having a door D in its front end, the opening a in its top and opening A' in its rear end, the tubular section B open at both ends, fitting within section A, and having its tip inclined downward and rearward, as shown, the forward end of the said section being of greater diameter than the opening A', the tubular section C open at its forward end and inclined, as shown, to readily pass through the opening B of section B, the open end of section C being of greater diameter than the opening B, and a vapor generator within the section C, substantially as set forth. 3rd. A vapor bath, comprising the tubular telescopic sections A, B, C, the guard I formed of a series of bars extending across the open end of section C, the water vessel F in the section C, the cup G within the vessel F and surrounded by a water space, and the hood H inclining towards the guard bars I, to direct the vapors between them into the sections A, B, substantially as shown and described. 4th. A vapor bath, made in telescopic sections A, B, C, the section A having a door for entrance of the patient and an opening to receive the patient's neck, and a rear opening A', the section B, having a lip b fitting at said opening A', and a rear opening B', and the section C having a lip c fitting at said opening B', and provided with a door C', substantially as described for the purposes set forth.

No. 25,012. Fire-Proof Paint. (*Penture Réfractaire.*)

James C. Emerson, Barnstead, N. H., U. S., 24th September, 1886; 5 years.

Claim.—The improved fire-proof paint herein described, consisting of a liquid composition of matter containing coal-tar, caustic, potash and muriatic acid, incorporated and assimilated substantially as set forth.

No. 25,013. Combined Scale, Weight Tray and Twine Box. (*Balance, Porte-Poids et Porte-Fil Combinés.*)

J. Franklin Laurence, Philadelphia, Penn., U. S., 24th September, 1886; 5 years.

Claim.—1st. A scale formed with a vertical pivot, in combination with a rotary weight tray, which is centrally mounted on said pivot, substantially as and for the purpose set forth. 2nd. A scale, in combination with a rotary weight tray and a vertical pivot, which supports the bearings of the scale beam and forms the axis for said tray, which is centrally mounted thereon, substantially as described. 3rd. A rotatable weight holder or tray, in combination with a twine box, which is provided with an axis for said tray, substantially as and for the purpose set forth. 4th. A scale and a rotatable weight-holding tray, in combination with a twine box having an axis for said tray, and supporting the bearings of the scale beam, substantially as and for the purpose set forth. 5th. A scale, provided with a rotatable weight-holding tray connected therewith, and located below the scale beam, substantially as and for the purpose set forth. 6th. A scale, provided with a weight-holding tray and a twine box, both connected therewith and located below the scale beam, substantially as and for the purpose set forth.

No. 25,014. Combined Oil and Vapour Burner. (*Bec de Lampe et à Gaz.*)

Frank B. Many, Cleveland, Ohio, U. S., 24th September, 1886; 5 years.

Claim.—1st. In an oil and vapour burner, a wick chamber and a combustion chamber, one immediately above the other, and having open communication between them, substantially as set forth. 2nd. In an oil and vapour burner, a set of tubes constructed to form a wick chamber between them, with another set of tubes resting thereon, and having a chamber which is a continuation of the wick chamber and open at the top, substantially as set forth. 3rd. In an

oil and vapour burner, a pair of imperforate tubes forming a wick chamber closed at the bottom and open at the top, with a pair of perforated tubes placed above the aforesaid tubes, and having an open chamber between them in free communication with the wick chamber, substantially as set forth. 4th. In an oil and vapour burner, the wick tubes, with the perforated tubes of the combustion chamber, the inner one of which has a diaphragm to divert the air into the combustion chamber, substantially as set forth. 5th. In an oil and vapour burner, the outer tube of the combustion chamber vertically adjustable, and a lever to raise the tube from its seat, substantially as set forth. 6th. In an oil and vapour burner, a combustion chamber formed by a stationary inner tube, and a vertically adjustable outer tube with a lever pivoted on the burner and adapted to raise said outer tube, substantially as set forth. 7th. In a vapour burner, a communicating and combustion chamber formed between two perforated tubes, and provided with a diaphragm to divert the air into the chamber, substantially as set forth.

No. 25,015. Multiple Telegraphy.

(*Télégraphe à Courants Multiples.*)

Alfred M. A. Beale, New York, N.Y., 25th September, 1886; 5 years.

Claim.—1st. The improvement in the art of multiple telegraphy, substantially as herein set forth, which consists in utilizing the intervals occurring between the successive movements of the armatures, of two or more electro-magnets placed successively and so that the armature of the first electro-magnet closes a circuit and allows an energizing current to pass to the second electro-magnet, and so on, to cause said armatures, during said intervals, to close successively (but not possibly simultaneously) two or more circuits to main line. 2nd. The improvement in the art of multiple telegraphy, substantially as herein set forth, which consists in utilizing the intervals between the successive movements of the armatures of two or more electro-magnets placed successively and at each end of the line, the said electro-magnets at each end being disposed so that the armature of the first electro-magnet closes a circuit and allows an energizing current to pass to the second magnet, and so on, to cause said armatures, during said intervals, to close successively (but not possibly simultaneously) circuits through two or more signalling instruments from main line. 3rd. In combination with a circuit, including a source of electricity, a circuit breaker, an electro-magnet and line, a circuit, including the armature of said magnet, a line connection closed by said armature, a signalling apparatus and a source of electricity, substantially as described. 4th. In combination with a circuit, including a source of electricity, a circuit breaker, a commutator, a polarized relay and line, a circuit, including the armature of said relay, a connection to line closed by said armature, a signalling apparatus and a source of electricity, substantially as described. 5th. In combination with a circuit, including a source of electricity, a circuit breaker, an electro-magnet and line, a circuit, including the armature of said magnet, a connection to line closed by said armature, a circuit breaker and the aforesaid source of electricity, the said circuit breakers operating alternately to establish their respective circuits, substantially as described. 6th. In combination with a circuit, including a source of electricity, a circuit breaker, an electro-magnet and line, a local circuit closed by the armature of said magnet, an electro-magnet in said local circuit and in circuit with the armature of said last mentioned electro-magnet, a connection to line closed by said armature, a signalling apparatus and source of electricity, substantially as described. 7th. In combination with a circuit, including a source of electricity, a circuit breaker, an electro-magnet and line, a circuit including the armature of said magnet, a connection to line closed by the aforesaid armature, and an electro-magnet in said local circuit and in circuit with the armature of said last mentioned electro-magnet, a line connection closed by said armature, a signalling apparatus and source of electricity, and at the other end of the line an electro-magnet and ground connection, a circuit including the armature of said magnet, a connection to line closed by said armature, a receiving apparatus and ground, substantially as described. 8th. In combination with the line and at one end thereof, a source of electricity, a circuit breaker and an electro-magnet, a circuit including the armature of said magnet, a connection to line closed by said armature, a signalling apparatus and source of electricity, and at the other end of the line an electro-magnet and ground connection, a circuit including the armature of said magnet, a connection to line closed by said armature, a receiving apparatus and ground, a local circuit closed by said last-mentioned armature, and an electro-magnet in said local circuit and in circuit with the armature of said last-mentioned electro-magnet, a line connection closed by said armature, a receiving apparatus and ground, substantially as described. 9th. In combination with the line, and at one end thereof, a source of electricity, a circuit-breaker and an electro-magnet, a circuit including the armature, a signalling apparatus and a source of electricity, a local circuit closed by the aforesaid armature, and an electro-magnet in said local circuit and in circuit with the armature of said last mentioned electro-magnet, a line connection closed by said armature, a signalling apparatus and a source of electricity, and at the other end of the line an electro-magnet and ground connection, a circuit including the armature of said magnet, a connection to line closed by said armature, a receiving apparatus and ground, a local circuit closed by said last-mentioned armature, and an electro-magnet in said local circuit and in circuit with the armature of said last-mentioned electro-magnet, a line connection closed by said armature, a receiving apparatus and ground, substantially as described. 10th. In combination with a line conductor and in branch circuit therewith, the polarized relay magnets A and B and in another branch circuit therewith, the contact point F, armature B disposed to make and break contact with said points, polarized relay magnets T and ground, and the armature M, and in local circuit with said armature M, the contact point P or Q, battery N and sounder O, substantially as described.

No. 25,016. Curd Mill. (*Ménote.*)

Joseph P. Roberge, Wickham, Que., 25th September, 1886; 5 years.

Claim.—1st. A curd mill, provided with a reciprocating head arranged to force the curd through a perforated plate and against revolving cutters, substantially as herein shown and described. 2nd. A curd mill, provided with gear pinions journaled in the mill frame and working in toothed racks on the edges of the curd vat, with a hand crank for turning said pinions, and a pawl for holding them

against turning, substantially as shown and described. 3rd. A curd mill having the hopper D opening into the trough E, which has the perforations *d* formed in its ends, substantially as and for the purpose set forth. 4th. In a curd mill, the shaft F journaled in the mill frame *f* and having formed in it the crank *e* and the connecting rod *h*, which connects said crank with the lever *g*, which is pivoted to the mill frame and has its other end attached to the reciprocating head I, as herein described and for the purpose set forth. 5th. The cylinder H fixed on the shaft F, and having formed in it the cam groove *j*, into which a pin fixed to the lever *j* projects, and by which said lever is caused to vibrate and move the gate J, substantially as herein described and for the purpose stated. 6th. The gates J and J', coupled together by the lever K, which is pivoted centrally to the guide bar *a*, as shown and for the purpose set forth. 7th. The cutters *b*, radiating from a hub fixed on the shaft *i*, driven by the gear wheel G and pinion M and arranged to operate in combination with the trough E having a perforated end, and the reciprocating head I, substantially as shown and described. 8th. In a curd mill, the combination of the frame C, hopper D, trough E having in its ends the perforations *d*, the reciprocating head I, gates J and J' and the cutters *b*, with the mechanism above described for operating the same, substantially as shown and for the purpose set forth.

No. 25,017. Folding Bed. (*Lit Pliant.*)

John H. Cairncross, Toronto, Ont., 25th September, 1886; 5 years.

Claim.—1st. A folding bed, folded from the side, composed of the following parts: two standards *e*, with slots *c* therein, a mantle board *a*, with lambrquin *b* and curtain *c*, an inner bed frame *a*, an outer bed frame *d* with mattresses *d*3, two legs *f* pivoted between the bed-frames aforesaid, which automatically assume a vertical position when the bed is let down, two toggle joints *p*, which keep the head and foot boards in position, two gudgeons *l* and studs *j*, two rocking arms *g* and brackets *h*, which compose the principal parts in controlling the movements of the bed when being let down or folded up, two spring rails *n*, with clamp shoes *m* on each end of the same, which hold the standards in position on the floor, substantially as shown and described and operating as set forth. 2nd. In folding beds sidewise, or from the top, the combination of the specified and described mechanism for operating the same, consisting of the rocking arms *g*, brackets *h*, gudgeons *l* and studs *j*, as arranged and operating substantially as set forth.

No. 25,018. Art of and Machinery for Dressing or Dressing and Hardening the Surfaces of Car Wheels, etc.

(*Art de Dérouer, ou Dérouer et Durcir les Roues des Chars, etc., et Appareil pour cet Objet.*)

George W. Miltimore, Arlington, Vt., U. S., 25th September, 1886; 5 years.

Claim.—1st. The herein described method of dressing, planing, turning, smoothing or renewing for any purpose the surfaces of metal bodies, which consists in burning and melting the surface away by means of a rapidly revolving disk, substantially as described. 2nd. The herein described method of dressing, planing, turning, smoothing or removing for any purpose the surfaces of metal bodies, which consists in passing the surface to be dressed in close proximity to a rapidly revolving smooth disk, substantially as described. 3rd. The herein described method of dressing, planing, turning, smoothing or removing for any purpose the surfaces of metal bodies, which consists in subjecting the surface to be dressed to the action of a rapidly revolving smooth disk, substantially as described. 4th. The herein described method of dressing and hardening the surfaces of metal bodies, which consists in subjecting the surface to be dressed and hardened to the action of a rapidly revolving smooth disk, substantially as described. 5th. The combination, with a smooth metal disk or wheel, arranged to be revolved rapidly, and having its periphery shaped to form the counterpart of the surface to be dressed, of means for supporting a car wheel or other cylindrical body, so that it can be revolved freely with its periphery in close proximity to the periphery of the disk, substantially as described. 6th. The combination with a smooth metal disk or wheel arranged to be revolved rapidly, and having its periphery shaped to form the counterpart of the surface to be dressed, of means for supporting a car wheel or other cylindrical body, so that it can be revolved freely with its periphery in close proximity to the periphery of the disk, and means for imparting a slow rotary movement to the wheel or other body, substantially as described. 7th. The combination, with a smooth metal disk or wheel, arranged to be revolved rapidly, and having its periphery shaped to form the counterpart of the surface to be dressed, of the movable frame or carriage C having means for supporting a car wheel or other cylindrical body, so that it can be revolved freely with its periphery in close proximity to the periphery of the disk, and means for imparting a slow rotary movement to the wheel or other body, substantially as described. 8th. The combination, with a smooth metal disk or wheel, arranged to be revolved rapidly, and having its periphery shaped to form the counterpart of the surface to be dressed, of the movable frame or carriage C having means for supporting a car wheel or other cylindrical body, so that it can be revolved freely with its periphery in close proximity to the periphery of the disk, means for imparting a slow rotary movement to the wheel or other body, and means for moving the carriage to and from the disk, substantially as described. 9th. The combination, with the smooth metal disk or wheels 99, arranged to be revolved rapidly and having their peripheries shaped to form the counterparts of the peripheries of a pair of car wheels, of the movable frame or carriage C having means for supporting the axle upon which the wheels are secured, so that the wheels can be revolved freely with their peripheries in close proximity to the peripheries of the disks, means for imparting a slow rotary movement to the wheels, and means for moving a carriage to and from the disks, substantially as described. 10th. The combination, with a revolving disk or disks 99, or the movable frame or carriage C having the chucks D, in which the axle

93 is supported so as to turn freely, substantially as described. 11th. The combination, with a revolving disk or disks 93, of the movable frame or carriage C having means for supporting the axle 93, so that it can turn freely, and the friction wheel or wheels 52, and connections for turning the car wheel or wheels, or other body, to prevent it or them to the disk or disks, substantially as described. 12th. The combination, with a revolving disk or disks 93, of the movable frame or carriage C having means for supporting the axle 93, so that it can turn freely and the spring pressed friction wheel or wheels 52 and connections for turning the car wheel or wheels, or other body, to prevent it or them to the disk or disks, substantially as described. 13th. The combination, with a revolving disk or disks 93, of the frame or carriage C having means for supporting the axle 93, so that it can turn freely, and the spring pressed friction wheel or wheels 52 mounted in a swinging frame or frames, and connections for turning the car wheel or wheels, or other body, to prevent it or them to the disk or disks, substantially as described. 14th. The combination, with the shaft 90 carrying the disk or disks 93, of the pump 94 and connections for forcing oil through the bearings of the shaft, substantially as described. 15th. The combination, with the shaft 90, carrying the disk or disks 93, of the pump 94 having the pipes 81, 79, communicating with the bearings of the shaft and provided with the branch 83, having an escape valve, and the pipes 82 for withdrawing the oil from the bearings, substantially as described. 16th. The combination, with the smooth revolving disk 99, of the movable frame C provided with means for supporting the car wheel or similar cylindrical body, so that it can be revolved freely, and means for imparting a slow longitudinal movement to the frame and a slow rotary movement to the wheel or other body, whereby the entire surface of the wheel or other body is presented to the edge of the disk, substantially as described. 17th. The combination, with the smooth revolving disk 99, of the movable frame C provided with means for supporting the car wheel or similar cylindrical body, so that it can be revolved freely, the worm gear 27, provided with the centering jaws 26, the worm 17 and means for imparting a slow longitudinal movement to the frame, whereby the entire surface of the wheel or other body is presented to the edge of the disk, substantially as described. 18th. The combination, with the smooth revolving disk 99, of the movable frame C provided with means for supporting the car wheel or other similar cylindrical body, so that it can be revolved freely, the worm gear 27, provided with the centering jaws 26 and steadying bolts 18, the worm 17 and means for imparting a slow longitudinal movement to the frame, whereby the entire surface of the wheel or other body is presented to the edge of the disk, substantially as described. 19th. The combination, with the smooth disk 99, of the movable frame C provided with means for supporting the car wheel or similar cylindrical body, so that it can be revolved freely, the screw rods 33, 40 and pieces A, and means for imparting a slow rotary movement to the wheel or other body, whereby the entire surface of the wheel or other body is presented to the edge of the disk, substantially as described. 20th. A car locomotive wheel, having its tread or treads and flange dressed by burning and melting away the original surface by means of a rapidly revolving disk or wheel, substantially as described. 21st. A car or locomotive wheel, having its tread or treads and flange dressed and hardened by burning and melting away the original by means of a rapidly revolving disk or wheel, substantially as described. 22nd. A car or locomotive wheel made of steel, or having a steel rim or tire, and having its tread or treads and flange dressed and hardened, substantially as described.

No. 25,019. Mechanical Movement for Operating Gate-Bars, Switches, Signals, etc. (*Mouvement Mécanique pour faire fonctionner les Barrières, Anguillères, Signaux, etc.*)

Mortimer B. Mills, Chicago, Ill., U.S., 25th September, 1886; 5 years.

Claim—1st. The combination of a stationary support, a pivoted arm, a lever fulcrumed toward one end to the pivotal arm and pivotally connected toward its opposite end to the stationary support, and a collapsible fluid receiver confined between the said lever and pivotal arm, and communicating with a suitable fluid pump, the whole forming a new mechanical movement, substantially as described. 2nd. The combination of a stationary support, a bar rigidly secured thereon, a pivotal arm, a lever fulcrumed toward one end to the pivotal arm, and pivotally connected toward its opposite end with the said bar, and a collapsible fluid-receiver confined between the said lever and pivotal arm, and communicating with a suitable fluid-pump, the whole forming a new mechanical movement, substantially as described. 3rd. The combination of a stationary support, a bar rigidly secured thereon, a link connected toward one end with the bar, a pivotal arm, a lever fulcrumed toward one end to the pivotal arm, and pivotally connected with the said link toward its opposite end, and a collapsible fluid receiver confined between the said lever and pivotal arm, and communicating with a suitable fluid-pump, the whole forming a new mechanical movement, substantially as described. 4th. The combination of a stationary support A, a bar C rigidly secured toward one end to the support A, and extending obliquely across the same, a link E¹ connected toward one end with the free end of the bar C, an arm B supported to swing upon the support A by a bearing G, which passes through the bar C toward its centre, a chamber D in the arm B, a lever E fulcrumed toward one end to the said arm and having within the said chamber and pivotally connected with the link E¹ toward its opposite end, and a collapsible fluid receiver confined between the lever E and adjacent surface of the chamber D, and communicating with a suitable fluid-pump, substantially as and for the purpose set forth. 5th. The combination of a stationary support A, a bar C rigidly secured toward one end to the support A and extending obliquely across the same, a link E connected toward one end with the free end of the bar C, an arm B supported to swing upon the support A by a bearing G, which passes through the bar C toward its centre, a chamber D in the arm B, a lever E fulcrumed toward one end to the chamber on one side of the bearing G, and lying between the said chamber and pivotally connected with the link E¹ toward its opposite end, and collapsible

fluid receivers G confined one on each side of the lever C within the chamber D, and controllably communicating with a suitable fluid-pump H, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

No. 25,020. Screw Propeller. (*Helice Propulsive.*)

Benjamin Dickinson, Bourne End, Eng., 25th September, 1886; 5 years.

Claim—A screw propeller, with blades arranged spirally upon a shaft or boss in one or more sets or series, the spiral for each spiral, if there be more than one, having a pitch or inclination of the opposite hand or denomination to that of the individual blades composing it, so that the rearmost blade of the set or series (or of each set or series, if there be more than one) travels in advance of the succeeding or next forward blade of the set or series, which, in its turn (where there are more than two blades in the set or series) travels in advance of the next forward blade, and so on, the arrangement being such that no two blades in the set or series shall operate upon the same water, and that water acted upon may readily escape, substantially as hereinbefore described. 2nd. The improved screw propeller, comprising blades B, C, D, E, F, arranged spirally upon boss G, the pitch or inclination of the spiral being of the opposite hand or denomination to that of the individual blade, as shown in and described with reference to the drawings.

No. 25,021. Journal Box. (*Boite de Fourillon.*)

William E. Wilcox and Frederic H. Kelly, Cleveland, Ohio, U.S., 27th September, 1886; 5 years.

Claim—1st. A journal bearing, provided with a series of anti-friction rollers C mounted in plates D at their ends, whereby they are kept from touching each other in revolving around the shaft, in combination with anti-friction balls e, and bearing plate e² at the end of the journal box, substantially as set forth. 2nd. In journal boxes, a bearing having an annular rib l on its inside, in combination with a series of anti-friction rollers C having grooves C₂ about their centers corresponding to said rib, and journals e formed on the ends and end plates D, provided with slots or perforations in which the journals rest, said journals having heads c₁ to hold the plates together and keep the rollers in position.

No. 25,022. Car-Coupling. (*Accouplage de Chars.*)

William D. Woodward, Abner L. Roberts and Martin H. O'Brien, Plattsburg, N.Y., U.S., 27th September, 1886; 5 years.

Claim—1st. The lever D, fulcrumed in the shifter H, which is pivoted in the cradle G, and the apron A¹ having the shank b₁, combined and arranged substantially as described. 2nd. The device for holding the apron A¹ up to the mouth of the draw-head, and the coupling-pin out of the draw-head, consisting of the jaws m, m¹, with the spring o arranged to hold the lever D in the position necessary for that purpose, as shown and described. 3rd. The case N, secured to the frame work of a car, and having in it the fixed jaw m, and the pivoted jaw m¹ acted upon by the spring o, both of said jaws having the upper portions of their inner faces splayed outward, and having the recesses p, p¹ formed in them, substantially as and for the purpose set forth. 4th. The combination of the draw head A and coupling-pin B, with the lever D supported in an oscillating fulcrum, and having the apron A¹ attached by the shank b₁. 5th. The combination of the apron A¹ and shank b₁, with the levers C and D and rod B¹ attached to the coupling pin B, substantially as described and for the purpose set forth.

No. 25,023. Gun and Projectile for Throwing Life-Saving Lines. (*Fusil et Projectile pour Lancer les Cables de Sauvetage.*)

Nathan C. Pond, Marshall O. West and Ernest Simons, Port Chester, N.Y. (assignees of Simon Ingersoll, Stamford, Ct., U.S.) 27th September, 1886; 5 years.

Claim—1st. In a gun and projectile for throwing life-saving lines, etc., the combination of a tube, a projectile fitted to slip on over the tube, a cartridge fitted to the interior of the projectile, and a firing pin within the tube adapted to be driven against the cartridge to explode it, as described. 2nd. In a device for throwing life lines, a tube, a firing pin within it, a projectile fitted to slip on over it, and a attached to the projectile to swing past the rear end thereof, whereby a line may be attached, as described. 3rd. The combination of a gun, comprising a breech, a tube, a firing pin therein, and a lock and a projectile adapted to fit upon the tube and to receive a cartridge in front of the tube, the latter serving as a breech pin, as described. 4th. The combination of a tubular projectile, closed at its forward end, and shaped with a cartridge seat within its forward end, and a gun having a lock and firing pin and fitted to enter the rear end of the projectile, as described. 5th. The combination, in a projectile, of a tubular body and a cap secured to its forward end, the said cap having a cartridge chamber in it opening rearward into the said tubular body, as described. 6th. The combination in a projectile, of a tubular body and a cap removably secured thereto, the said cap having within it a cartridge chamber, and a shoulder fitted to seat the flanged head of a cartridge, as described. 7th. The combination of a tubular body, and a cap secured to one end thereof, the said cap being provided with a shouldered cartridge chamber, and a conical mouth surrounding the said shoulder, as described. 8th. A projectile having a tubular body, and provided with a cartridge chamber wholly within a single piece of metal, the said chamber having a rearward opening only, as described. 9th. The combination of a cylindrical tubular projectile, closed at its sides and forward end, forming an elongated air chamber, and provided with a ball at its rear end, and a gun having a barrel externally cylindrical and fitted to the interior of the said projectile, and adapted to fire ammunition within the said barrel, substantially as shown and described, whereby the said pro-

projectile is adapted to be thrown by the action of the air within it resisting the expansion of gas within the gun at the time of firing. 10th. The combination of a tubular projectile, internally straight throughout its length and closed at its sides and forward end and provided with a bail and a gun having a barrel externally straight fitted to the interior of the projectile and adapted to fire ammunition within the gun, substantially as shown and described.

No. 25,024. Fastening for Sheet Metal Pipes.

(Collet pour Tuyaux en Tôle.)

William Clendinning, Jr. (assignee of John Clendinning.) Montreal, Que., 27th September, 1886; 5 years.

Claim.—1st. The combination, with the ends of sheet-metal pipes correspondingly fluted, of the catch C provided with locking pieces *v*3 passed through such slots and turned, all as herein set forth. 2nd. As a means of attaching together the ends of sheet-metal pipes, the catch C, with thumb piece shield locking piece, and connecting post carrying washer D, all as herein set forth.

No. 25,025. Combined Gas Engine Motor and Liquid Pump. (Machine à Gaz et Pompe Combinées.)

Hiram C. Covort, New York, N. Y. (assignee of Fenner B. Taylor. Washington, D. C. and Henry Hartig, Brooklyn, N. Y.) U. S., 23th September, 1886; 5 years.

Claim.—1st. In a gas motor, the combination of the cylinder 1, trunk piston 20, conical distributing valve 23 centrally arranged in the piston, the side chambers of which form communication alternately between the admission passage 3 and exhaust passage 4, and the explosion chamber by means of the passage 21 and 22, and the parts 23 and 24 formed in the trunk piston, substantially as and for the purposes herein set forth. 2nd. In a gas motor having a trunk piston, the combination of the valve 23 having a recess 23 in its under side, with the cam or finger 25 of the connecting rod 26 and crank 18; substantially as and for the purposes herein described. 3rd. In a gas motor, the mixing chamber 10, in combination with the passage 3, flap valve 13, gas-regulating valve 14, and elastic gas-receiver 1, substantially as and for the purposes herein specified. 4th. In a gas engine pump, the combination of the pump barrel 8 with the base of the engine 5, the removable valve chambers 7 and 38 connecting chamber 39, branch pipe 40, air vessels 47 and 48, pump plunger 51, yoke 31, guide 32, connecting rod 33, and crank 35, substantially as and for the purposes herein described. 5th. In a gas engine pump, the combination of the delivery valve chamber 38, connecting pipe 39, water passage 7, connecting the pump to the water jacket 2, of the motor discharge pipe 52 and regulating valve 53, substantially as and for the purposes herein set forth. 6th. In a combined gas engine and liquid pump, the cylinder 1, trunk piston 20, conical valve 23, recess 23, driving cam 25, connecting rod 26, crank 18, mixing chamber 10, passage 3, flap valve 13, valve 14, gas receiver 15, pump barrel 8, valve chambers 7 and 38, branch pipe 40, air vessels 47 and 48, pump plunger 51, yoke 31, connecting rod 33, crank 35, water passage 7, discharge pipe 52 and valve 53, substantially as set forth and for the purposes described.

No. 25,026. Mode of and Apparatus for Boiling Eggs. (Manière de faire Bouillir les Œufs et appareil pour cet objet.)

Daniel G. Martens, Laxwag, (Co-inventor with Thomas Crawford, Nygard, Bergen, Norway, 28th September, 1886; 5 years.

Claim.—1st. The improvement in a mode of boiling eggs, consisting in placing the eggs in a vessel which is then charged with boiling water, and the hollow walls of which contain non-conducting material, and placing a closely fitting lid therein, substantially as set forth. 2nd. A vessel for boiling water, with hollow walls containing non-conducting material, and having a closely fitting lid for the purpose of boiling eggs, substantially as set forth. 3rd. The bowl for boiling water, with hollow walls A, B, containing non-conducting material, and having a closely fitting lid D, substantially as and for the purpose set forth.

No. 25,027. Method of Attaching Gussets between the Flaps of Shirts. (Manière de Poser les Goussets entre les Devants et Derrières des Chemises.)

Isaac H. Mambert, Albany, and George A. Mosher, Troy, N. Y., U. S., 23th September, 1886; 5 years.

Claim.—An improved method of attaching gussets between the flaps of shirts, which consists in placing the gusset so that one edge will coincide with the upper part of the flap-opening, and be far enough from the shirt edge to allow the latter to be turned over to form a hem, secondly, in hemming the edge of the shirt-flap and the said gusset edge together, and laying them upon the opposite flap of shirt until the edges coincide down to the flap-opening, and, thirdly, stitching these edges together down to the flap-opening, and then down the opposite gusset edge, said edge being folded over to coincide with the edge of said opposite shirt-flap, as set forth.

No. 25,028. Paint Renewer. (Rénovateur de Peinture.)

Albert E. Ryder, Cotuit, Mass., U. S., 23th September, 1886; 5 years.

Claim.—The improved paint-renewer herein described, the same consisting of linseed oil, japan and varnish, in the proportions and compounded substantially as set forth.

No. 25,029. Carriage Gear. (Train de Voiture.)

Andrew B. Schmidt, Ann Arbor, Mich., U. S., 23th September, 1886; 5 years.

Claim.—1st. In a carriage gear, the end connection to the springs C, D, and E, in which the link D E is used to form this connection, and is attached on top of the supporting piece or part B, as at E, thus enabling said link B to be used at either end of the springs C, D, 2nd. In a carriage gear, the combination, with the springs C, D, of the link D E placed above the supporting piece B, for the purposes above set forth. 3rd. In a carriage gear, the combination of the springs C, D, and the link D E, as shown and described, with a rigid brace reach, as above described and for the purposes specified. 4th. The link D E, with its projection F, as a new form of link and a new article of manufacture.

No. 25,030. Egg Beater. (Verge de Cuisine.)

George H. Thomas, Worcester, Mass., U. S., 23th September, 1886; 5 years.

Claim.—1st. An egg beater having conical spring attached to a rod, and mechanism connected thereto for opening and closing said spring. 2nd. An egg beater consisting of a supporting frame, a beater consisting of a conically helically or other coiled spring, and mechanism for reciprocating said spring beater. 3rd. An egg beater consisting of a supporting frame, a rod depending therefrom, a beater consisting of a coiled wire spring rigidly connected at its bottom portion to the bottom of said depending rod, and mechanism mounted upon said frame and connected to the spring beater by a wire extending upwardly therefrom and adapted to be operated by hand, so as to reciprocate the beater by power transmitted through said mechanism, substantially as set forth. 4th. An egg beater consisting of a suitable frame, a drive wheel an intermeshing pinion mounted thereon, a rod depending from said frame, and a spring beater composed of a coiled spring wire connected at its bottom portion to said rod, and having connection with the operative mechanism, substantially as and for the purpose set forth. 5th. In an egg beater, the combination, with a suitable frame, connecting drive-wheels, and a supporting rod, of a spring beater, composed of a coiled wire connected at its lower portion with said rod, and at its apex loosely coiled around said shaft or rod, so as to permit of its reciprocation thereon, and from thence extending up to and connecting with the hand operating mechanism. 6th. In an egg beater, the combination, with a suitable frame having a drive wheel mounted thereon, of a pinion gearing therewith, and having an outwardly-extending grooved arm, a vertical rod depending from the framing, and a spring beater connected at its lower end to said rod, and having its apex formed with an engaging sliding thereon, and having an upward-extending arm or rod connecting with the grooved arm on the gear pinion, substantially as and for the purpose set forth.

No. 25,031. Nut Lock. (Serre-Ecrou.)

Theodore E. Vanderweken, Green Island, and George A. Harrison, Troy, N. Y., U. S., 23th September, 1886; 5 years.

Claim.—1st. In a sectional nut lock, the combination of one section provided with a bolt-aperture having a retaining stop or stops on one side, and ratchet teeth upon the opposite side with a plate having a bolt-aperture, and provided with spring pawls adapted to engage with said ratchet-teeth, and another section provided on one side with a nut engaging stop or stops, and on the opposite side with stops for controlling the movements of said spring-supporting plate, and lugs for disengaging said pawls from said ratchet-teeth, all arranged and operated, substantially as and for the purposes set forth. 2nd. In a nut lock composed of sections, one having ratchet-teeth and the other provided with spring-pawls adapted to engage with said teeth and pawl-disengaging lug, the strengthening-lugs attached to said pawl-carrying section for the purpose of strengthening said spring pawls, substantially as described and for the purposes set forth.

No. 25,032. Egg Beater. (Verge de Cuisine.)

George H. Paine, Philadelphia, Penn., U. S., 23th September, 1886; 5 years.

Claim.—1st. In an egg beater, a stationary central stem, in combination with one or more directly surrounding loose helical wires, a beater secured to said helical wires, and a loose handle or nut guided directly upon the stem and adapted to rotate the helical wires and beater, substantially as and for the purpose specified. 2nd. In an egg beater, a central stem, in combination with one or more surrounding loose helical wires, a beater secured to said helical wires, and a loose handle or nut K having large hole L, and end plate I, with holes M, m, whereby said handle is guided upon the stem and adapted to rotate the helical wires and beater, substantially as and for the purpose specified. 3rd. In an egg beater, a stationary central stem, in combination with one or more directly surrounding loose helical wires, a beater secured to said helical wire stops or shoulders on said stem to retain the helical wires and beater on the stem, and a loose handle or nut guided directly upon the stem and adapted to rotate the helical wires and beater, substantially as and for the purpose specified. 4th. In an egg beater, the combination of the stationary central stem A, the helical wires C directly surrounding said stem and loosely supported thereby, the beater F formed of scroll or open work secured to said helical wires and loosely journaled upon the stem A, and a nut or handle K to rotate said helical wires, substantially as and for the purpose specified. 5th. In an egg beater, the combination of the central stem A, the helical wires C surrounding said stem and loosely supported thereby, the beater F formed of scroll or open work secured to said helical wires and loosely journaled upon the stem A, and a nut or handle K having large hole L and end plates I, L, with holes M, m, whereby said handle is guided upon the stem, and may be reciprocated to rotate said helical wires, substantially as and for the purpose specified. 6th. In an egg beater, the combination of the stationary central stem A, the helical wires C directly surrounding said stem and loosely supported thereby, the beater F formed of scroll or open work secured to said helical wires, and loosely journaled upon the stem A, and a nut or handle K to rotate said helical wires and shoulders on said stem to retain the beater thereon, substantially as and for the purpose spe-

cified. 7th. In an egg beater, a stationary central stem, in combination with one or more directly surrounding loose helical wires, a beater to said helical wires, stops or shoulders on said stem to retain the helical wires and beater on the stem, and a loose handle or nut guided directly upon the stem, and adapted to rotate the helical wires and beater, the said stem extending down below the beater and forming a step for its support, substantially as and for the purpose specified. 8th. In an egg beater, the combination of the stationary central stem A, the helical wires C directly surrounding said stem and loosely supported thereby, the beater F formed of rings G and H, and clamp J secured to said helical wires and loosely journaled upon the stem A, and a nut or handle K to rotate said helical wires, substantially as and for the purpose specified.

No. 25,033. Mould for Forming Boot and Shoe Heels. (*Moule pour Façonner les Talons des Chaussures.*)

Edward J. LeGay, Boston, Mass., U. S., 23th September, 1886; 5 years.

Claim.—1st. In combination with a longitudinally-divided heel-mould, the slides B, having the halves of the mould thereon respectively mounted and interlocked to slide in bed A, and the actuating screw C journaled in said bed and threaded in said slides, substantially as specified. 2nd. In combination with mould-bed D, mounted and arranged to be actuated, as specified, and having its upper face oblique to that of bed A, the mould F mounted on bed D and forced with its upper face oblique to that of bed D, and parallel to that of bed A, substantially as specified.

No. 25,034. Rotary Engine or Pump.

(*Machine ou Pompe Rotatoire.*)

Charles H. Cary, Bristol, U. S., 23th September, 1886; 5 years.

Claim.—1st. In a rotary engine or pump, the combination of the opposite concave abutments with the rotary chambered head, and the reciprocating pistons curved on their outer faces, substantially as and for the purpose specified. 2nd. In a rotary engine or pump, the combination of the opposite concave abutments, the rotary chambered head, the stationary eccentrically located wrist pin, and the pistons curved on their outer faces and connected to the wrist pin, substantially as described.

No. 25,035. Steam Washer and Bleacher.

(*Chaudière pour Laver et Décolorer.*)

George S. Hanes, Iroquois Ont., 23th September, 1886. 5 years.

Claim.—The combination of the removable perforated boiler bottom A, provided with the rim I and pipe with the removable perforated dome D resting upon the bottom A, substantially as herein shown and described.

No. 25,036. Pea Vine Lifter for Harvesters.

(*Moissonneuse à Pois.*)

James Patterson, Stella, Ont., 23th September, 1886; 5 years.

Claim.—1st. In combination with the cutter bar A, having guards B, and provided with auxiliary bar E, the fingers H bent from a single bar, and provided with a socket I to fit on the point of a guard, and a slot at the heel to engage with bolt U, as set forth. 2nd. In combination with the cutter bar A having shoe D, and provided with an auxiliary bar E, the finger K bent from a single bar, and provided with a socket I to fit over the point of the shoe, and a slot at the end to engage with bolt G, as set forth. 3rd. The fingers H, K, consisting of a bar bent as described, and provided with a socket and slot, as set forth.

No. 25,037. Rotary Pump. (*Pompe Rotatoire.*)

Joseph G. Falcon and Peter E. Falcon, Chicago, Ill., U. S., 23th September, 1886; 5 years.

Claim.—1st. In rotary pumps for elevating sand with water, the spring-wings I tapered as stated, in combination with the exterior case having sunken disks A, A, and laterally-enlarged surrounding parts B, B, which terminate in curves corresponding with the curves of the edges of the wings, as specified. 2nd. In rotary pumps, the opening rings J, constructed to spring their lengths, in combination with a hub-support E which fill the case at its points of contact at A, A with the ends thereof, and the ends at B, B being enlarged outwardly to leave spaces at the edges and ends of the opening wings, as specified.

No. 25,038. Washing and Cooking Apparatus. (*Appareil de Blancherie et de Cuisine.*)

William H. Bailey and George H. Moon, Woodstock, Ont., 23th September, 1886; 5 years.

Claim.—1st. The combination of the boiler C, the tanks D with the vats L, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the tanks H, the spaces H, with the tubes F, F, substantially as and for the purpose hereinbefore set forth.

No. 25,039. Insole for Boots and Shoes.

(*Fausse-Semelle de Chaussure.*)

The Common Sense Flexible Insole Company, Portland, Me., assignee of Charles W. King, Rutherford, N. J., U. S., 23th September, 1886; 5 years.

Claim.—1st. An insole for boots and shoes having an upper layer of leather or equivalent material, and an under layer of sheathing-felt composed chiefly of paper-stock and tar, substantially as and for the purpose specified. 2nd. An insole for boots or shoes, having

an intermediate layer of tarred material, enclosed between layers of cloth or equivalent material, in the manner and substantially as set forth.

No. 25,040. Machine for Forging Horse Shoe Nails. (*Machine à Forger le Clou à Cheval.*)

Peck, Benny and Company, assignees of Charles R. Ellacott, Montreal, Que., 23th September, 1886; 5 years.

Claim.—1st. In a horseshoe nail forging machine, the combination, with a revolving roller-hammer, a stationary side die and a moving side die of an anvil carried in a pivoted frame, and adapted to be raised against the nail blank by a series of successive gradations, substantially as and for the purpose specified. 2nd. In a horseshoe nail forging machine, the combination, with a revolving roller-hammer, a stationary side die and a moving side die adapted to deliver a series of graduated side blows upon the blank, a swinging anvil arranged to rise against said blank by successive gradations co-incident with the blows of said side die, substantially as and for the purpose specified. 3rd. In a horseshoe nail forging machine, the combination, with the frame having a standard to the rear of the roller shaft, of the anvil frame G pivoted to said standard and carrying anvil proper, and a cam acting upon the forward end of said frame to give it a swinging or oscillating vertical motion, substantially as and for the purpose described. 4th. In a horseshoe nail forging machine, the combination, with the dies and anvil and with the means for carrying the forged blank, of a stationary cutter and a movable cutter adapted to cut off the blank at a point below the shaping dies, substantially as and for the purpose specified. 5th. In a horseshoe nail forging machine, the combination, with the shaping dies and anvil, of a stationary bottom cutter, a pivoted top cutter located underneath the dies at one side of the anvil, and a cam for operating said pivoted cutter, substantially as and for the purpose described. 6th. In a horseshoe nail forging machine, the combination, with the shaping dies, the anvil, and with the top and bottom cutters, arranged substantially as described, of the lever P carrying guide for the nail rod levers O, O, and cams M and N, arranged to operate substantially in the manner and for the purpose set forth. 7th. In a horseshoe nail forging machine, the combination, with a roller hammer and a stationary side die, of the side hammer E, vibrating arm F, and means for operating same so as to deliver graduated blows, substantially as and for the purpose set forth. 8th. The combination, with the moving side hammer, the roller shaft and the pitman of the bell-crank lever D, connected loosely with said side hammer and pitman eccentric shaft E and a cam for oscillating said eccentric shaft, substantially as and for the purpose specified. 9th. In a horseshoe nail forging machine, the combination, with a guide for carrying the nail rod to the forging apparatus of the fixed standard J, and rocking standard K, both carrying vertically moving gripping bars J, K, and levers and cams for operating same, substantially in the manner and for the purpose set forth. 10th. The combination, with the fixed standard J, and rocking standard K, having projections J', J', and vertically moving gripping bars J, K, of the vertical bars J, J', having feet J, J', and the shafts I and I' having fingers I, I', and levers and cams for operating same, substantially as and for the purpose set forth. 11th. The combination, with the bars P, of the nose-piece or guide Q having spring R affixed thereto, and traveling therewith, in the manner and for the purpose specified.

No. 25,041. Art of Germinating Barley.

(*Art de faire Germer l'Orge.*)

Hermann Schmidt, New York, N. Y., U. S., assignee of Hermann Huckmann, Memmingen, Germany, 23th September, 1886; 5 years.

Claim.—1st. As an improvement in the art of germinating barley, the hereinbefore described process of subjecting the grain to the action of a spray of water through the medium of compressed air, substantially as and for the purposes set forth. 2nd. The improvement in the process of manufacturing malt, which consists in subjecting barley to the action of a mist or spray for effecting its uniform germination, whereby the drying off of the surface grain during the flooring stage is prevented, and the grain uniformly prepared for the kiln drying stage, substantially as described.

No. 25,042. Method of Concentrating Mineral Ores. (*Méthode de Concentration des Minerais.*)

Carrie J. Ererson, Chicago, Ill., U. S., 23th September, 1886; 5 years.

Claim.—1st. In the separation of pulverulent ores containing rocky gangue, the method of treatment herein described, which consists in mixing with such pulverulent ore a fat or an oil, or a constituent thereof, an acid or soluble neutral or acid salt and water, and breaking up the mass to allow the sand to separate therefrom. 2nd. The method, substantially as described, of separating metals or metallic minerals from rocky gangues, which consists in mixing a fat or an oil, or a constituent thereof, with pulverised ore, and washing out the gangue with water containing an acid or a soluble neutral or acid salt.

No. 25,043. Appliance for Lifting the Trouser Bottoms. (*Appareil pour Retrousser les Pantalons.*)

Robert B. Colley, St. Helier, Jersey, U. S., 23th September, 1886; 5 years.

Claim.—The means, substantially as herein described and shown in the drawings, of wholly or partially raising the bottoms or lower part of the legs of trousers, and holding them raised whilst in wear, the said means consisting essentially of a flexible connection attached at the lower end to the trouser at the point to be lifted, and provided at its upper end with a means of attachment to the outside of the trouser at or near the hip.

No. 25,044. Rectal and Vaginal Speculum.*(Speculum Rectal et Vaginal)*

William E. Ryan, French Lick Springs, Ind., U. S., 30th September, 1886, 5 years

Claim.—1st. A speculum consisting essentially of a tube, slotted near its inner end, which said inner end is closed, substantially as described. 2nd. A speculum consisting essentially of a tapering tube, slotted near its inner smaller end, which said smaller end is closed, substantially as described. 3rd. A speculum consisting of a tube 10, formed with a lip 11, and provided with a handle 12, the inner end of said tube being spherical, while a slot 13 is formed in the upper face of the tube, the tube being solid or unbroken between the slot and the lip 11, substantially as described. 4th. The combination, with a tube 10, formed with a slot 13, of a door connected to a bracket 4, a cam block mounted in a slot formed in the bracket, and a rod 5 threaded to engage with a threaded socket formed in the bracket 4, substantially as described.

No. 25,045. Vermin Exterminator.*(Piège à Vermine.)*

Albert A. Griffin, Roscommon, Mich., U. S., 30th September, 1886; 5 years.

Claim.—1st. A device, for the purpose described, which can be drawn over a floor or carpet surface, and discharge its heated products through a perforated plate at the bottom of the device, substantially as specified. 2nd. A device, for the purposes described, having runners secured upon its base, and a pole pivotally secured to the front side of said base, and a perforated pipe secured near the bottom of such base upon its rear side, substantially as described and for the purposes set forth. 3rd. A device, for the purposes described, wherein the following elements are combined: a base supported upon runners, and having a perforated pipe extending along its rear side, such base containing the lamp reservoir, a tank supported above such base, and a pipe affording communication between the top of said tank and such perforated pipe, a pole secured to the front of such base, and a bale extending over the top of the tank, the parts being arranged, constructed and operating substantially in the manner and for the purpose set forth. 4th. A vermin exterminator consisting of a lamp B, and generator C enclosed in a portable frame, said generator being provided with a flexible discharge spout E, substantially as set forth.

No. 25,046. Cattle Guard. (Grillage de Ponceau)

James T. Hall, St. Louis, Mich., U. S., 30th September, 1886; 5 years.

Claim.—1st. A surface cattle-guard secured to the top of the ties, and having an upward projection of a series of parallel iron edges, substantially as described. 2nd. A surface cattle-guard composed of a series of strips of band iron sleeved upon transverse bars, and secured at certain distances apart, and the whole secured to the surface of the ties of a railway, substantially as described.

No. 25,747. Fire-Escape Ladder.*(Echelle de Sauteage.)*

George S. Haues and Alexander Shaver, Iroquois, Ont., 30th September, 1886; 5 years.

Claim.—1st. The combination, with a fire-escape ladder, of the chains D provided with the balls E, substantially as and for the purpose set forth. 2nd. The loops F, formed in the top section of a folding fire escape ladder, as shown and for the purpose set forth. 3rd. The combination, in a folding fire-escape ladder, of the sides B turned around the step of the adjoining section, the arms C and loops F, substantially as herein shown and described.

No. 25,048. Fire-Extinguisher.*(Extincteur d'Incendie.)*

Emley G. Penrose, Harvey S. Nutting and William H. Smith, Tama, Iowa, U. S., 30th September, 1886, 5 years.

Claim.—In a fire-extinguisher, a compound consisting of carbonate of potash, saltpetre, carbonate of magnesia, saleratus, salt, alum, and water, in combination with a glass bottle or any other receptacle to convey the liquid to the fire, substantially as in the proportions and for the purpose set forth.

No. 25,049. Knob Attachment for Door Locks. (Branche de Bouton de Porte)

Theodore D. Davis, Syracuse, N. Y., U. S., 30th September, 1886; 5 years.

Claim.—1st. The combination, substantially as before set forth, of the hub of a latch, a spindle passing through said hub and having a tapering surface, and a nut on the spindle to cause it to firmly bind on the hub. 2nd. The combination, substantially as before set forth, of the hub of a latch, a sectional spindle having a tapering surface, and a screw connection for drawing the sections of a spindle together and toward the hub, whereby the said sections of the spindle C and the hub are all firmly bound together. 3rd. The combination, substantially as before set forth, of the hub of a latch, a spindle composed of a male section and a female section, each of which is constructed with a tapering surface, and a nut for moving the sections of the spindle on each other to force their tapering surfaces into the eye of the said hub.

No. 25,050. Paper Pulp Screen.*(Eponsoir de Pâte à Papier)*

Calvin Russell and Patrick H. Cragin, Pean Yan, N. Y., U. S., 30th September, 1886, 5 years.

Claim.—1st. The combination, with a paper pulp screen and sub-

adjacent pulp vat, of pumping bars arranged horizontally side by side, and movable laterally immediately beneath the surface of the liquid in the said pulp vat, substantially as and for the purpose specified. 2nd. The combination, with a paper pulp screen and adjacent pulp vat, of pumping bars arranged horizontally longitudinally side by side, and oscillatory on their longitudinal axis, and immersed immediately beneath the surface of the liquid in the pulp vat, substantially as set forth. 3rd. The combination, with a paper pulp screen and adjacent pulp vat, of pumping bars arranged horizontally side by side, and movable toward and from each other, immediately beneath the surface of the liquid in said vat, and concealed on their adjacent sides, substantially as described and shown. 4th. The combination, with a paper pulp screen and adjacent pulp vat, of pumping bars arranged horizontally side by side and movable toward and from each other immediately beneath the surface of the liquid in the vat, and concealed on their upper sides, substantially as described and shown. 5th. The combination, with a paper pulp screen and adjacent pulp vat, of pumping bars, arranged horizontally side by side and movable toward and from each other immediately beneath the surface of the liquid in the vat, and a horizontal bar arranged stationary between the movable bars, substantially as set forth. 6th. The combination, with a paper pulp screen and adjacent pulp vat, of pumping bars arranged horizontally side by side, and movable toward and from each other immediately beneath the surface of the liquid in the vat, and a horizontal bar arranged stationary between the movable bars and concealed on the sides adjacent to said bars, substantially as described and shown. 7th. In combination, with the paper pulp screen, the adjacent pulp vat provided with concave sides, pumping bars arranged horizontally between said sides and in one and the same plane and movable laterally immediately beneath the liquid in the vat, and concealed on their sides, substantially as set forth and shown. 8th. The combination, with the paper pulp screen and adjacent pulp vat, of pumping bars arranged horizontally side by side and movable laterally immediately beneath the surface of the liquid in the tank, and a false bottom under said bars, substantially as described and shown. 9th. In combination with the paper pulp screen and adjacent pulp vat, a pumping apparatus submerged in the liquid in the vat and comprising a series of bars arranged horizontally side by side and oscillating on their longitudinal axis, and concealed on their sides, stationary horizontal bars between the oscillating bars and concealed on their sides, and a false bottom under said bars provided with discharge openings central under the oscillatory bars, substantially as described and shown. 10th. In combination with the paper pulp screen and adjacent pulp vat, a series of pumping bars arranged horizontally side by side immediately beneath the surface of the liquid in the vat, rock-shafts attached to the bottom of the respective pump bars, rock-arms attached to the rock-shafts and a reciprocating bar connected with and operating in common, the aforesaid rock-arms, substantially as described and shown. 11th. In combination with two or more screens and vats, each provided with a set of pumping bars, as described, and rock-shaft and rock-arms for operating said pumping bars, a reciprocating bar extending across the successive rock-arms, and clutches or latches detachably connecting the rock-arms with the reciprocating bar, substantially as and for the purpose set forth.

No. 25,051. Pulp Producing Apparatus for Paper Making. (Appareil pour faire la Pâte à Papier.)

George W. Russell, Lawrence, Mass., U. S., 30th September, 1886; 5 years.

Claim.—In a pulp-making apparatus, the boiler B, combined with a lining fitted thereon, composed of wire cloth covered with a lead compound, the wire cloth being completely covered in all its parts by the lead compound, the edges of the lining-sections being made liquid-tight, substantially as described.

No. 25,052. Art of Making Butter.*(Art de Faire le Beurre.)*

Anthony W. Burke, Toronto, Ont., 30th September, 1886; 5 years.

Claim.—1st. An improvement in the art of making butter, which consists in the process of treating cream or milk by first bringing that of different ages separately to a uniform temperature, then adding thereto the described butter making compound, and then mixing and churning the whole together, all substantially as and for the purpose specified. 2nd. The improvement in the art of making butter, which consists in the preparation and use of the described butter making compound, composed of refined extract aluminate of stry, nitrate of potash, boracic acid and annatto, in the proportion described, and in combination with the process set forth, substantially as and for the purposes specified.

No. 25,053. Combined Gang Punch and Bending Machine. (Pompeur en Groupe et Machine à Cintrer Combinés.)

William H. Johnson, Racine, Wis., U. S., 30th September, 1886; 5 years.

Claim.—1st. The combination, with the bed, the rotating shaft and the eccentric of the head C, having the rod D for connecting it with the eccentric, said rod being pivoted to the centre of the head, and the brace rods A which are pivoted to the ends of the head and are connected to the rod D, substantially as described. 2nd. The combination of the bed A, having the guides or ways C, shaft K, the grooved collar splined to said shaft, the lever for moving the collar, the eccentric loose on the shaft K, the sliding head C connected to said eccen-

trick sliding head *s*, and connecting arms *m* secured eccentrically to the shaft *K*, substantially as described. 3r1. The combination of the bed *A*, having guides or ways *C*, with the shaft *K* journaled in blocks *H*, the sliding collar *N*, the eccentric *S* loose on the shaft, the lever for operating the collar, the head *e* connected to the eccentric *S*, the head *t*, arms *m* connected eccentrically to the shaft *K*, spurred wheels *L* fixed to the shaft *K*, standards *T*, shaft *U* having pinions *V*, spurred wheels *W* and clutching collars *a, a*, levers *q* having a handle connected thereto by toggle arms *c*, and shaft *Y* having the driving pulley and the pinions *X*, substantially as described.

No. 25,054. Concave for Thrashing Machines. (*Contre-Buteur de Machine à Battre.*)

George A. Roberts, Three Rivers, Mich., U. S., 30th September, 1886; 5 years.

Claim.—A concave for thrashing machines, comprising a series of hollow cylindrical bars, each carrying teeth on the apex or highest part of its surface, in combination with tension bolts passing through the bars, and with intermediate collars interposed at the points of nearest approach between the adjacent bars, substantially as and for the purpose set forth.

No. 25,055. Machine for Working Lumber. (*Machine à Dresser le Bois.*)

Samuel C. Burris, Victoria, B.C., 30th September, 1886, 5 years.

Claim.—1st. The combination, in a wood-working machine, provided with upper and lower cutter heads, for simultaneously surfacing and grooving opposite sides of a timber, of the cutters *t* arranged at an angle to the line of motion of the timber passing through the machine, and mechanism for periodically dropping the cutters into engagement with the edges of the timber, as herein specified. 2nd. The combination of the cutters *G*, and horizontal shaft *F* arranged angularly with reference to the path of the wood, being operated upon the slides *h*, supporting the shafts of the cutters, the cams *i*, and the horizontal cutter-heads *p* provided with series of cutters *e*, and arranged to produce longitudinal grooves in the edges of the timber, substantially as herein shown and described. 3rd. The combination, in a wood-working machine, of the vertically reciprocating cutters *G* arranged at an angle to the path of the timber passing through the machine and adapted to act on the sides of said timber, the surfacing and grooving cutters *C, C*, arranged respectively above and below the timber, and the circular saw *ct* arranged beneath the timber and midway of the width of the machine for dividing the timber lengthwise, as specified.

No. 25,056. Privy Seat. (*Sigle de Latrines.*)

Charles Kelley, Toronto, and Jacob Ball, Waterloo, Ont., 30th September, 1886; 5 years.

Claim.—1st. A privy seat, provided with a cover hinged upon the bottom of the seat and held closed over the excrement hole by means of a spring or its equivalent, in combination with a pivoted or hinged seat so connected to the cover that the downward movement of the seat shall cause the said cover to move clear of the excrement-hole, substantially as and for the purpose specified. 2nd. A privy seat, provided with a cover divided in its centre, and hinged on the bottom of the seat on either side of the excrement-hole, a spring or its equivalent arranged to act on each half of the cover so as to hold it closed, in combination with a pivoted or hinged seat connected to the two halves of the cover, so that the downward movement of the seat will cause the said cover to open clear of the excrement hole, substantially as and for the purpose specified. 3rd. A seat *C*, pivoted at or near its centre, and provided with an apron *b*, in combination with the divided cover *D*, hinged on the bottom of the seat *A* and connected to the seat *C* by means of the rods *e*, substantially as and for the purpose specified. 4th. A seat *C*, pivoted at or near its centre, and having a finger *F* connected to it, in combination with the hinged cover *G* having a step *H* attached to it, substantially as and for the purpose specified. 5th. The seat *C* pivoted at or near its centre, and provided with a finger *F* to act against the cover *G* and step *H*, in combination with the cover *D* connected to the seat *C* by means of the rods *e* and actuated by the springs *E*, substantially as and for the purpose specified.

No. 25,057. Boot Stretcher. (*Forme Bristle.*)

John G. Staentges and Jacob P. Fisher, Buffalo, N. Y., U. S., 30th September, 1886; 5 years.

Claim.—A boot stretcher for taking out the wrinkles from the front and back of a boot, consisting of the upper removable portion *3*, having its lower surface *10* in the form of an arc of a circle, and provided with a screw handle, and a nut *5* secured in a recess in the under side, substantially as specified, in combination with the lower and heel and back portion *4*, having a correspondingly curved portion *11*, and a socket *5* to receive the lower end of the handle, substantially as and for the purposes herein shown and described.

No. 25,058. Meat Cutter. (*Machine-Viande.*)

Alfonzo J. Eddy, New Britain, Ct., U. S., 30th September, 1886; 5 years.

Claim.—1st. In a meat cutter, the combination of a series of revolving knives, with a corresponding series of removable shear-blocks seated in the case, the middle portion of the cutting edge of the successive shear-blocks being gradually lessened in height as they approach the discharge spout, substantially as described. 2nd. The combination of the gang of rotary cutters mounted on a shaft and separated by washers, and the gang of shear-blocks which extend from one side of the case to the periphery of the washers between the cutters, and having their bottom edges resting upon the bottom of the socket *d*, and inner wall of the case, while their upper inner corners are fitted closely up against the periphery of said washers,

substantially as described and for the purpose specified. 3rd. The combination of the series of rotary cutters, the gang of removable shear-blocks and the spout *h* having its inner end formed into a shear block for the adjoining cutter, substantially as described and for the purpose specified.

No. 25,059. Thrashing Machine. (*Machine à Battre.*)

John L. Hill, Canadoc, Ont., 30th September, 1886; 5 years.

Claim.—1st. A deck screen *R*, in combination with a straw deck *L*, and grain deck *K*, substantially as and for the purpose set forth. 2nd. A deck screen *R*, in combination with a straw deck *L* and a shoe *M*, substantially as and for the purpose set forth. 3rd. A straw deck *L*, in combination with pivotal arms *J*, and crank shaft *H*, substantially as and for the purpose set forth. 4th. A shoe *M*, in combination with a shoe *M*, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the grain deck *K*, with a crank shaft *H* and connecting rod *L*, substantially as and for the purpose set forth. 6th. A slatted canvas carrier *N*, in combination with a straw deck *L*, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the straw decks *L, L*, pivoted arms *J*, and crank shafts *H* and *H*, chain wheels *G, G*, *G*, *G*, endless carrier *N*, shaft *B*, roller *a* and chain wheel *O*, grain deck *K*, connecting rod *L*, crank shaft *H* and chain wheel *G*, and shoe *M* with the chain belts *F*, clutch pulley *D* and toothed wheel *C*, substantially as and for the purpose hereinbefore set forth. 8th. In a machine for thrashing grain, the combination of the clutch pulley *D* formed with socket *d*, toothed wheel *C* made with a stud *ct*, shaft *B*, lever *E* and chain belt *F*, substantially as and for the purpose hereinbefore set forth. 9th. In a machine for thrashing grain, the pulley *A*, shaft *B*, clutch pulley *D* formed with socket *d*, toothed wheel *C* formed with a stud pin *ct*, lever *E*, chain belt *F*, toothed wheel *C* and cylinder shaft *B*, substantially as and for the purpose hereinbefore set forth.

No. 25,060. Horse Shoe. (*Fer à Cheval.*)

Robert J. Nicholson, Sheffield, Eng., 30th September, 1886; 5 years.

Claim.—1st. In a horse shoe, grooves or recesses *B, B*, formed with edges *b, b*, and stopped ends, as and for the purposes described. 2nd. In a horse shoe, the combination, with the grooves *B, B*, of rubber strips *C, C*, with grooves *c, c* to receive projecting edges *b, b* of grooves, all as herein set forth. 3rd. In combination with a horse shoe, and forced into recess in same, rubber strips with grooved sides and rounded outer surfaces, as and for the purposes described.

No. 25,061. Batten, Shuttle and Driving Gear for Looms. (*Chasse, Navette et Commande pour Méliers de Tisserand.*)

Violetta Lines (Administrative of the estate of John T. Cooke), and James L. Bottomley, Manchester, Eng., 30th September, 1886; 5 years.

Claim.—1st. The shuttle *b*, in combination with the strips *c* and *d*, the batten *a*, the driving planks *d, d*, and the means for communicating motion to the same, substantially as and for the purpose set forth. 2nd. The combination, with the disc *i*, of the square shaft *l*, the ball joint *r* and the sliding shaft *p* and the upright rod or projection *s*, with the pin *t* for communicating motion to the shuttles of a small-ware loom.

No. 25,062. Grain Meter. (*Compteur à Grain.*)

Joseph B. Dutton, Detroit, Mich., U. S., 30th September, 1886; 5 years.

Claim.—1st. The combination, in a grain meter, of a counterpoised receptacle divided into compartments, a gate arranged to alternately cover the inlet of one or the other of such compartments, a rock lever connected with such gate, a vibrating rigid arm engaging with such rock-lever to throw it first to one side and then to the other, and means for drawing such arm into a normal position during the interval, substantially as described. 2nd. A grain meter, provided with a counterpoised receptacle divided into compartments, a gate arranged to alternately cover the inlet of one or the other of such compartments, a rock lever connected with such gate, a vibrating rigid arm to engage such rock lever to throw it first to one side and then the other, and two valves, one above and one below the meter, and connected to operate together to regulate the feed by the discharge, substantially as and for the purposes described. 3rd. In combination with a grain meter of the kind described, the valve *U* in the feed spout having the counterweight *P*, the hopper *M* below the meter having the valve *Q*, and automatically operating connection between the valves arranged to close the valve *Q* by the opening movement of the valve *U*, substantially as described. 4th. In combination with a grain meter of the kind described, the valve *Q* in the feed having the counterweight *P*, the hopper *M* below the meter having the valve *Q*, automatically operating connection between the valves arranged to close the valve *Q* by the spring movement of the valve *Q*, and the adjustable relief valve *V* above the valve *Q*, substantially as described.

No. 25,063. Thrashing Cylinder. (*Batteur.*)

George A. Roberts, Three Rivers, Mich., U. S., 30th September, 1886; 5 years.

Claim.—A thrashing cylinder consisting of the head *D, D*, having recesses *c* formed in their periphery with a solid portion between each two recesses, the tubular bars *A* provided with teeth *B* and inserted in said recesses with their highest point on a line with such periphery, and the bands *F* shrunk on said heads and over the ends of the bars, as shown, to retain said bars in place, substantially as and for the purposes specified.

No. 25,064. Carpet Stretcher. (Tire-Topis.)

John R. Price, Niagara Falls, Ont., 30th September, 1886; 5 years.

Claim.—1st. The combination of the frame A, A, spikes A, A, lever B, carriage C, post C, catch bar D, handle D, dog E, plate F, rod G, pawl H, and rack I. 2nd. In a carpet stretcher, the combination, with a frame A, the spikes A, A, catch bar D, provided with curved handle passing through and guided by a carriage C running in frame A and fitted with a plate E, and connected to and actuated by a lever pivoted to said frame A, all substantially as shown and described and for the purpose set forth.

No. 25,065. Vapour Generator for Bath Apparatus. (Générateur de Vapeur pour Baignoires.)

George Douglass, Sioux City, Iowa, U. S., 30th September, 1886; 5 years.

Claim.—The portable steam generator consisting of a vessel with a horizontal fire-box located in the interior thereof, and entirely surrounded by water except at the exterior opening, a series of flues passing therefrom, a chamber to which the flues pass in the upper portion of said vessel and over the fire-box, a deflector suspended in said chamber, an escape pipe leading therefrom, and a steam connecting pipe projecting from the top of said vessel, the whole combined and adapted to serve in connection with a bath-closet, substantially as and for the purpose specified.

No. 25,066. Machine for Making Bale Ties, etc. (Machine à Faire les Cordes les Balots, etc.)

Herbert C. Capel, London, Eng., 30th September, 1886; 5 years.

Claim.—1st. In a machine for making bale-ties, the combination of mechanism for stretching or straightening the wire, mechanism for cutting or dividing the same into lengths or pieces, and mechanism for forming loops or eyes thereon, all operating automatically. 2nd. A machine for making bale-ties wherein the different sets of mechanism are arranged substantially as set forth, so that the wire will be first bent and twisted to form a loop or eye, then stretched or straightened, and then cut or divided as above specified. 3rd. The combination of a stationary block or frame provided with clamping devices, a sliding block or frame provided with clamping devices, mechanism for moving said sliding block or frame towards and away from said stationary block or frame, and mechanism arranged between said blocks or frames for cutting or dividing the wire, for the purposes above specified. 4th. The combination of a stationary block or frame provided with clamping devices, a sliding block or frame provided with clamping devices, and with means for bending and twisting the wire to form a loop or eye thereon, mechanism for moving said sliding block or frame towards and away from said stationary block or frame, and mechanism arranged between said blocks or frames for cutting or dividing the wire, for the purposes above specified. 5th. The combination of a stationary block or frame, provided with clamping devices, and with means for bending or twisting the wire to form a loop or eye at one end of the bale-tie, a sliding block or frame provided with clamping devices, and with means for forming a loop or eye at the other end of the bale-tie, mechanism for moving said sliding block or frame towards and away from said stationary block or frame, and mechanism arranged between said blocks or frames for cutting or dividing the wire, for the purpose above specified. 6th. In a machine for making bale-ties, the combination of the shaft A carried by the sliding block or frame E and provided with the spring Y, the lever I pivoted to said shaft and provided with the sled to the lever E pivoted to said lever I, the shaft E and crank C carried by a bracket attached to said block E, mechanism for turning said crank first in one direction, and then in the reverse direction in the to-and-fro movement of said block, and mechanism for rotating said shaft A, all substantially as and for the purposes set forth. 7th. The combination with the shaft A and the levers B, C, of the spring C for holding the levers out of their central position, and permitting their return to the same when tension is put upon the wire, and for effecting the return movement of the lever C after the same is depressed, substantially as and for the purposes set forth. 8th. The combination, with the sliding block or frame E, of the rods or bars Q, Q, Q, fitted to slide longitudinally on the bearing E, the springs R, R, and means for operating the said rods or bars, substantially as and for the purposes set forth. 9th. The combination, with the rods or bars Q, Q, Q, and springs R, R, of the notched shaft S and means for turning the same on its axis, substantially as and for the purpose set forth. 10th. The combination, with the block or frame E, of the forked rod T fitted to slide longitudinally in bearings T, fixed or formed on said block and provided with the buffers or cushions T, and the means for connecting the said forked rod with the clamping device carried by said block, all so arranged that said clamping device will grip the wires before said block commences its forward movement, and will release said wires before said block commences its rearward movement, substantially as and for the purpose set forth. 11th. The combination of the bar P fitted to slide to and fro in the bracket L, the cutters P, fixed in said bracket, the spring P, and means for operating said bar to cut or divide the wires, said bar and bracket being formed with holes through which said wires are passed, substantially as and for the purpose set forth. 12th. The combination, with sliding bar P, cutters P, and spring P, of the notched shaft O, and means for turning the same on its axis, substantially as and for the purpose set forth. 13th. The combination of cutting mechanism carried by a bracket, a shaft secured in said bracket and fitted to slide longitudinally in the stationary block or frame F, and having a nut fitted thereon, and means whereby the cutting mechanism will be operated when but not until said bracket has moved forward a short distance, substantially as set forth. 14th. The combination of the cutting mechanism, the bracket L, the shaft M, and the nut M, of the shaft O, and lever O, the collar or sleeve N fixed on the rod N, and means for imparting longitudinal movement to said rod N, all so arranged that the cutters will be moved

forward upon the wires before they are operated to cut or divide the same, substantially as and for the purpose set forth. 16th. The combination of the levers I, K, the rods I, K, the plates I, K, the rod L, the springs L, K, and K, the collar K, the slotted shaft M, and means for imparting longitudinal movement to said shaft, all substantially as and for the purpose set forth. 16th. The combination of the hollow shaft r, provided with the spring Y and having fixed therein, the pin b on which is fitted to rotate, the pinion a having the stud or projection s, the shaft t fitted to slide to and fro in said shaft r, and provided with a rack gearing with said pinion, means for imparting to and fro motion to said shaft t, and means for rotating said shafts r and t, all carried by the stationary block or frame F, and arranged substantially as set forth for the purpose specified. 17th. The combination of the frame Z, provided with clamping devices, the levers i, j, means for operating said lever i to raise and lower said frame, the plunger l arranged to operate said clamping devices when said frame arrives at either end of its stroke or movement, and the levers g operated by said plunger in the latter part of its downward movement, all substantially as and for the purposes set forth. 18th. The combination of the slotted discs H, H, the blocks H, fitted to slide therein and the springs H, substantially as and for the purpose set forth.

No. 25,067. Fire-Alarm Apparatus.

(Appareil Avertisseur d'Incendie)

Charles D. Rogers, Providence, R. I., U. S., 30th September, 1886; 5 years.

Claim.—1st. The combination, substantially as hereinbefore described, of a public fire alarm box provided with means for operating it by hand in the usual manner, a box controllable therein which embodies driving mechanism and electro magnets, and a stop which normally restrains said mechanism from continuously operating, but which is released therefrom and recaptured through said magnet, and one or more local electric circuits which include the coil of said magnet and are provided with keys or switches whereby the box may be operated as usual by hand, and whereby said driving mechanism may be repeatedly released by the manipulation of any one or more keys in any one or all of the circuits, and enable repeated alarms to be turned in from one or more points in any one circuit or in different local circuits. 2nd. The combination, in an electric fire alarm system, of a public district or station alarm-box electrically communicating with fire-alarm headquarters, and provided with means for operating it by hand in a usual manner, and a box-controller in said box containing driving mechanism, a stop disk which by its rotation operates the box and can be rotated in but one direction, an electro magnet, a stud normally engaged with said stop disk but released therefrom by said magnet, and one or more local electric circuits including said electro magnets and provided with keys or switches, whereby said magnet may be made to release said disk, and enable an alarm to be repeatedly turned in from any one or more keys in either circuit, or successively turned in from keys in different circuits. 3rd. The combination, with a complete fire alarm box provided with means for operating it by hand in the usual manner, of the mechanically-driven stop disk, the reciprocating link by which said disk is loosely connected to the box operating lever, the stop for said disk, the electro magnet by which said stop may be moved, and one or more local electric circuits including the coil of said magnet, and provided with keys, substantially as described, whereby said box can be operated in the usual manner, or one or more successive alarms turned in either from one or more keys on the same local circuit or from keys in different circuits. 4th. The combination, with a complete fire alarm box, provided with means for operating it by hand in the usual manner, of a box-controller operated through local electric circuits, and embodying driving mechanism having a star wheel and a vibrating-governor operating as a signal striker, substantially as described. 5th. The combination, with a public fire alarm box provided with means for operating it by hand in the usual manner, of a box-controller embodying driving mechanism controlled through a local electric circuit, and keys in said circuit which are housed within casings having locked covers and are guarded by paper seals clamped by said covers, substantially as described.

No. 25,068. Locomotive Ash Pan.

(Cendrier de Locomotive)

James Graham, Detroit, Mich., U. S., 30th September, 1886; 5 years.

Claim.—1st. A locomotive ash pan, constructed with oblique longitudinal sides and rectangular vertical ends, having sideway for the bottom, in combination with a sliding bottom longitudinally divided into two parts, and the working device for sliding the same, all substantially as described and for the purpose specified. 2nd. A locomotive ash pan, constructed with oblique longitudinal sides reducing the bottom about one-half or less in width than the top, in combination with a sliding bottom longitudinally divided into two parts along the centre, and the working device for sliding the same, all substantially as described and for the purpose set forth.

No. 25,069. Automatic Grain Weighing Machine. (Machine Automatique pour Peser les Grains.)

David D. Kuhlman and John Seaton, Atchison, Ks., U. S., 30th September, 1886; 5 years.

Claim.—1st. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, a swinging cut-off valve journalled at one longitudinal edge within a part of the chute and adapted to seat at its opposite edge, a crank arm at one end of the valve, a rising and falling secondary hopper beneath the bucket, and a connection between said hopper and the crank arm, substantially as described. 2nd. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, a rock-shaft extending through the chute and provided at one end with a crank arm, a swinging cut-off valve secured to the rock-shaft, a rising and falling hopper beneath the bucket, and a

connection between said hopper and the crank arm, substantially as described. 3rd. The combination, in a grain-weighing machine, of a rising and falling grain bucket, a chute for delivering the grain thereto, a cut-off valve in the chute, and a guard-plate located above the valve and extending partially across the chute, substantially as described. 4th. The combination, in a grain weighing machine, of a rising and falling grain bucket, a chute for delivering the grain thereto, a swinging out-off valve journalled in the chute and provided with a crank arm, a guard-plate located above the valve and extending partially across the chute, a rising and falling hopper beneath the bucket, and a connection between the hopper and the crank arm, substantially as described. 5th. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, a swinging feed-controlling valve located in a part of the chute for only partially cutting off the flow of the grain, and a pivoted weighing-beam connected at one end with the feed-controlling valve, and at the other end with the scale-beam, substantially as described. 6th. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, a swinging feed-controlling valve located in a part of the chute for only partially cutting off the flow of grain to the bucket, a crank arm at one end of the valve, and a weighted pivoted beam having a slotted connection at one end with the crank, and at the other end loosely connected with the scale-beam, substantially as described. 7th. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, two rock-shafts journalled in a part of the chute, and each having a crank arm at one end, and a weighted pivoted beam having slotted connections at one end with the crank arms, and loosely connected at the other end with the scale beam, substantially as described. 8th. The combination, in a grain weighing machine, of a grain bucket, a chute for conveying the grain thereto, feed controlling valves located in a part of the chute for only partially cutting off the flow of grain, and shield plates arranged above the valves, substantially as described. 9th. The combination, in a grain weighing machine, of a grain bucket, a chute for conveying the grain thereto, swinging valves journalled in a part of the chute for only partially cutting off the flow of the grain, and inclined shield plates secured to the chute above the valves for protecting the latter from the pressure of the grain, substantially as described. 10th. The combination, in a grain-weighing machine, of a grain bucket, a chute for conveying the grain thereto, feed controlling valve for only partially cutting off the flow of grain to the grain bucket, and a cut-off valve located above the feed controlling valves for entirely cutting off the flow of grain to the bucket, substantially as described. 11th. The combination, in a grain weighing machine, of a grain bucket, a chute for conveying the grain thereto, feed controlling valves for only partially cutting off the flow of grain to the bucket, a swinging cut-off valve located in the chute above the feed-controlling valves for entirely cutting off the flow of grain, a rising and falling hopper beneath the bucket, and a connection between said hopper and the cut off valve, substantially as described. 12th. The combination, in a grain weighing machine, of a grain bucket, a chute for conveying the grain thereto, rock shafts journalled in a part of the chute, and carrying feed controlling valves for only partially cutting off the flow of grain, crank arms at one end of the shaft, a weighted pivoted beam connected at one end with said crank arms, and at the other end with the scale beam, a swinging cut-off valve for entirely cutting off the flow of grain, a rising and falling hopper beneath the grain bucket, and a connection between said hopper and the cut-off valve, substantially as described. 13th. The combination, with a rising and falling grain bucket having a swinging partition provided with an arm at its lower end, of pivoted locking arms connected at one end, and a link connected with one of said arms and with the arm on the partition, substantially as described. 14th. The combination, with a rising and falling grain bucket having a swinging partition provided with an arm at its lower end, of pivoted weighted locking arms, having a slot and pin connection at their inner ends, and a slotted link pivoted to one of the locking arms and loosely engaging the arm on the partition, substantially as described. 15th. The combination, with a rising and falling grain bucket having a swinging partition, provided at its lower end with a crank arm, of lateral studs at one end of the bucket, weighted arms pivoted in said studs and loosely connected at their inner ends, and a slotted link loosely connected at one end with the crank arms on the partition, substantially as described.

No. 25,070. Clutching Mechanism for Street Car Brakes. (*Mécanisme pour Freins de Tramway.*)

Walter V. Willson, Brunswick, N. Y., U. S., 30th September, 1886, 5 years.

Claim.—1st. In a clutching mechanism, the combination, with a shaft adapted to be rotated, of a housing or case that is made with a passage-way for said rotating shaft to turn therein, and constructed with cams on its interior face, a clutching wheel that is keyed to turn with said shaft, and constructed with a wedge form perimetral groove, said clutching wheel being arranged within said housing, and wedges that are also arranged within said housing or case, adapted to be operated by said arms to engage with the perimetral groove of said clutching wheel, substantially in the manner as and for the purpose set forth. 2nd. In a clutching mechanism, the combination, with a shaft adapted to be rotated, of a housing or case that is made with a passage-way for said rotating shaft to turn therein, and constructed with cams and cam stops on its interior face, a clutching wheel that is keyed to turn with said shaft and constructed with a wedge-form perimetral groove, said clutching wheel being arranged within said housing, and wedges that are also arranged within said housing or case adapted to be operated by said cams to engage with the perimetral groove of said clutching wheel, substantially in the manner as and for the purposes set forth. 3rd. In a clutching mechanism for a street car brake, the combination, with the housing or case D made with the passage-way *p*, cams C1, cam stops C2 and ratchet R, of the

clutching wheel W1, made with perimetral groove *z* keyed to the shaft S1 and arranged within said housing, the wedges W2 arranged within said housing relatively to the said cams and perimetral groove, as described, the sleeve S2 attached to the underside of said housing and to the shaft S3, and the detent *d*, constructed and arranged to be operated substantially as and for the purposes set forth.

No. 25,071. Road Machine or Scraper, Grader and Leveller. (*Machine ou Grattoir de Dressage et Nivelage des Chemins.*)

Elias Lathrop and Charles F. Pfeiffer, Fort Wayne, Ind., U. S., 30th September, 1886; 5 years.

Claim.—1st. The obliquely-arranged scraper, located between the carriage-supporting trucks, and propelled from the rear axle through oblique thrust braces, having a ball and socket or universal joint connection with said axle, substantially as described. 2nd. The obliquely-arranged scraper, in combination with converging braces in rear thereof united in an angle-iron, having a ball and socket, or universal joint connection with the propelling and supporting carriage, substantially as described. 3rd. The combination, with the obliquely-arranged scraper, of the obliquely-arranged braces, the angle-iron connecting said braces and the supporting-carriage, substantially as described. 4th. The combination, with the rear axle of the supporting carriage, of the divided casting or socket plates having the cylindrical socket formed thereon, and the angle iron or casting provided with the ball fitting said socket and connected with the scraper bar for supporting and propelling the latter, substantially as described. 5th. The lever K2, provided with the slotted clamping and wear plates, in combination with, and mounted upon the sleeve stud of its supporting standard, and the retaining bolt, arranged and operating substantially as described. 6th. The levers K1 and K2, mounted on separate fulcrums and pivoted onto the other, in combination with the interposed wear plates provided with the pivotal sleeves and the through bolt for connecting said levers and wear-plates, substantially as described. 7th. The combination, with the scraper supporting frame and its forward truck or axle, of the fifth-wheel composed of the upper and lower rings or plates, the angle irons or clips connecting said plates, and the countersunk bolts adapted to be passed through perforations in one of said plates for securing the retaining clips removably to the other plates, substantially as described. 8th. In a road scraper, the carrying wheel provided with the peripheral flange made in sections, in combination with clamping plates striding the rim for securing said flange sections to the spokes between the rim and hub of the wheel, substantially as described.

No. 25,072. Vehicle Wheel. (*Roue de Voiture*)

James L. Johnston, George Dick, George F. Parinello and Edward Wilder, Topeka, Ks., U. S., 30th September, 1886; 5 years.

Claim.—1st. In a vehicle wheel, a hub constructed with spoke sockets provided with an opening or vent, substantially as and for the purpose described. 2nd. In a vehicle wheel, a hub constructed with spoke sockets having at their base an opening or vent, substantially as and for the purpose described. 3rd. In a vehicle wheel, a hub ring provided with radial spoke sockets, and webs *d* located beneath the sockets, substantially as described. 4th. In a vehicle wheel, the combination of the two hub rings having recesses in their inner sides, the axle box provided with a lug adapted to enter a recess of one of the rings and a securing nut, substantially as described. 5th. In a vehicle wheel, a hub ring formed with spoke sockets having a vent or opening, and strengthening webs *d* located beneath the same, substantially as described. 6th. In a vehicle wheel, the combination, with the axle box having the wedge-shaped lug *b*, of the rings B, B, having the webs *d* and intermediate spaces for the reception of the lug, substantially as described. 7th. In a vehicle wheel, the combination, with the axle box having the flange *a* and lug *b*, of the rings B, B, having the webs *d* recessed at their ends, substantially as and for the purpose described. 8th. In a vehicle wheel, the hub ring formed on the inner side with a right angle bearing surface, and provided with webs connecting the same and forming a central recess and bearings for the box, substantially as described. 9th. In a vehicle wheel, a spoke and felly ferrule consisting of the thimble having a concave flanged seat for the felly centrally perforated to receive a screw, substantially as described. 10th. In a vehicle wheel, the combination, with the felly, the spoke and the tire, of a ferrule receiving the end of the spoke and affording a seat for the inside of the felly, a nut recessed in the end of the ferrule, and a screw fastening binding the whole together, substantially as described. 11th. In a vehicle wheel, and for the purpose described, a ferrule having a concave seat, and a centrally arranged and perforated or screw-tapped tenon, all formed of one piece, substantially as set forth. 12th. In a vehicle wheel, the combination, with a mortised felly, a perforated tire and a spoke, of a ferrule having a concave seat, a perforated tenon protruding centrally therefrom, and a screw fastening provided with a nut recessed in the end of the ferrule, substantially as described.

No. 25,073. Railway Switch.

(*Aiguille de Chemin de Fer*)

John B. Batt, Buffalo, N. Y., U. S., 30th September, 1886, 5 years.

Claim.—1st. The combination, with the fixed main rails A, A1, fixed side rail B and fixed pointed rails A1, B1, of the movable guide rails D, D1, connected to move simultaneously and provided with bevelled ends *d*, substantially as set forth. 2nd. The combination, with the fixed main rails A, A1, fixed side rail B, and fixed pointing rails A1, B1 of the pivoted guide rails D, D1, connecting bar II having its ends A1 engaging under the main rails, and the shifting bar I attached to the bar II, substantially as set forth.

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

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| <p>686. O. S. WOOD, 3rd 5 years of No. 6,595, from the 28th day of September, 1886. Improvement on Sub-Aqueous Drilling Apparatus, 6th September, 1886.</p> | <p>695. W. G. WORKMAN, 2nd 5 years of No. 13,403, from the 17th day of September, 1886. Improvements on Automatic Cradles, 17th September, 1886.</p> |
| <p>687. H. EDWARDS, 2nd 5 years of No. 13,473, from the 25th day of September, 1886. Compound for Curing Cancers, 10th September, 1886.</p> | <p>696. ST. G. L. FOX, 2nd 5 years of No. 13,472, from the 25th day of September, 1886. Improvements on and Appertaining to Electric Lamps and Electric Lighting, 18th September 1886.</p> |
| <p>688. B. B. PRENTICE and W. N. BARRIE, 2nd 5 years of No. 13,400, from the 13th day of September, 1886. Improvements on Churns, 13th September, 1886.</p> | <p>697. G. BLAIR, 2nd 5 years of No. 13,494, from the 30th September, 1886. Improvements on Stove Pipe Collars, 20th September, 1886.</p> |
| <p>689. THE J. B. ARMSTRONG MANUFACTURING CO., (Assignee) 2nd 5 years of No. 13,421, from the 17th day of September, 1886. Improvements on Vehicles, 13th day of September, 1886.</p> | <p>698. THE J. F. PEASE FURNACE CO., (Assignee) 2nd 5 years of No. 15,708, from the 2nd day of November, 1887. Improvements on Heating Apparatus, 20th September, 1886.</p> |
| <p>690. T. HOYT, 3rd 5 years of No. 6,873, from the 12th day of December, 1886. Improvements on Chain Pump Buckets, 13th September, 1886.</p> | <p>699. W. J. LANE, 2nd 5 years of No. 13,530, from the 12th day of October, 1886. Improvements in Machines for Gathering Hay, 23rd September, 1886.</p> |
| <p>691. G. BEATTY, 2nd 5 years of No. 13,490, from the 13th day of September, 1886. Improvements on Reaping Machines, 13th September, 1886.</p> | <p>700. H. R. IVES, 2nd 5 years of No. 13,842, from the 16th day of December, 1886. Improvements on Egg Beaters, 23rd September, 1886.</p> |
| <p>692. W. F. SEXTON, Sen., and W. F. SEXTON, Jun., 2nd 5 years of No. 13,423, from the 17th day of September, 1886. Improvements in Balancing Attachments for Hinged Doors, 16th September, 1886.</p> | <p>701. T. RUDELL, 2nd 5 years of No. 20,416, from the 22nd day of October, 1886. Improvements in Load Lifters, 23rd September, 1886.</p> |
| <p>693. THE TORONTO GUN AND CLIMAX SKATE CO., (Assignee) 2nd 5 years of No. 13,685, from the 12th day of November, 1886. Improvements on Skates, 17th September, 1886.</p> | <p>702. T. A. B. PUTNAM, 2nd 5 years of No. 13,476, from the 25th day of September, 1886. Improvements on Electric Signals for Railways, 25th September, 1886.</p> |
| <p>694. G. A. CONOVER, 2nd 5 years of No. 13,434, from the 17th day of September, 1886. Improvements on Churns, 17th September, 1886.</p> | <p>703. THE ANSONIA CLOCK CO., (Assignee) 2nd 5 years of No. 13,486, from the 29th day of September, 1886. Improvements on Time Pieces and Clocks, 27th September, 1886.</p> |

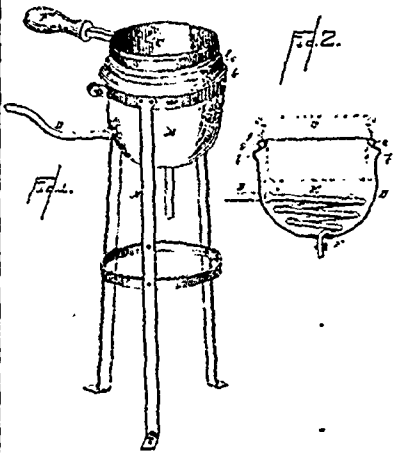
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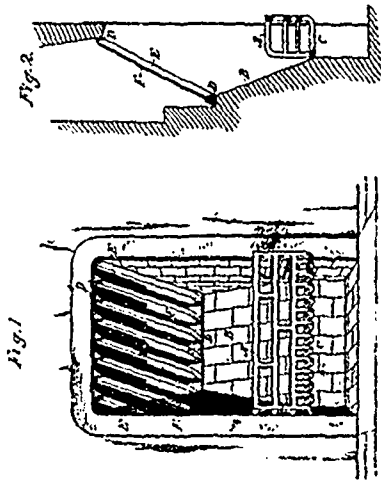
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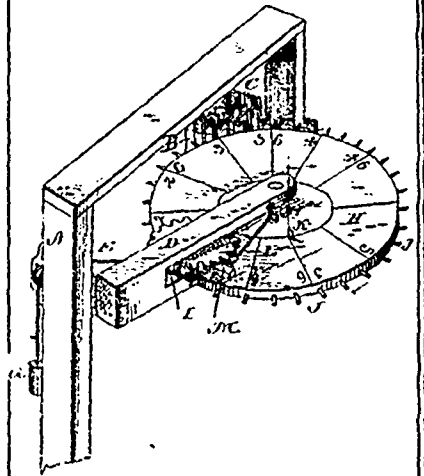
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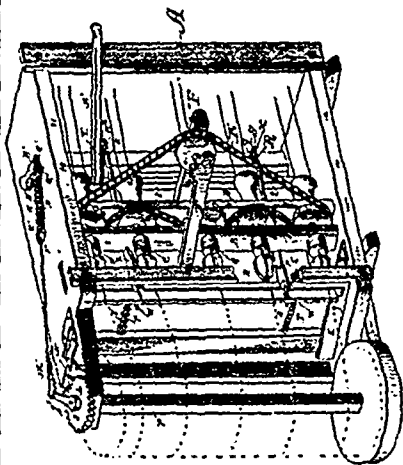
24848 Muser's Confectioners' Melting Bath.



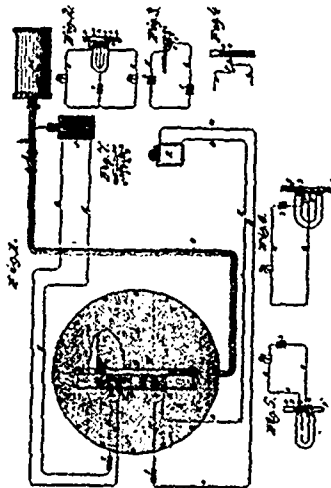
24849 Hunter's Draft Regulator



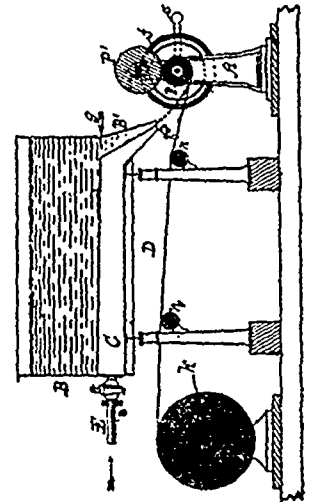
24850 Thies' Measuring Device and Register for Fence Material.



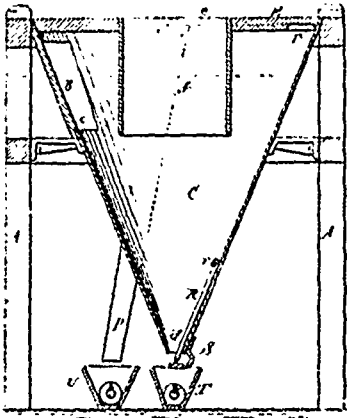
24851 Thies' Fence-Making Machine.



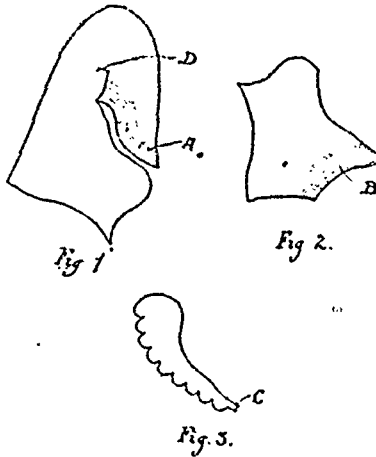
24852 Ghegan's Liquid Level Indicator.



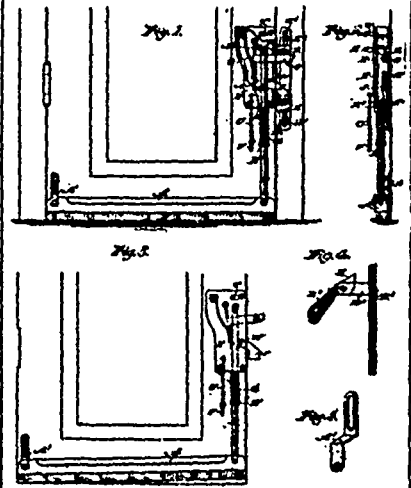
24853 Doehring's Glass Tubes, etc.



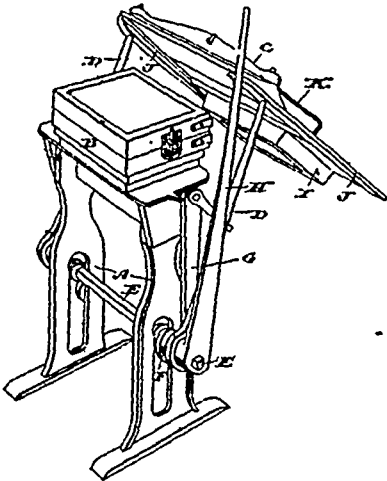
24854 Morse's Dust Collector.



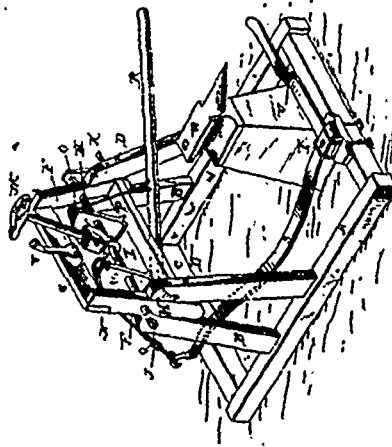
24855 Picotte's Upper for Ladies' Boots.



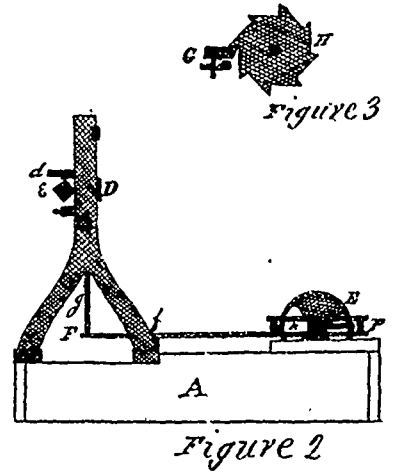
24856 Harrison's Weather Strip.



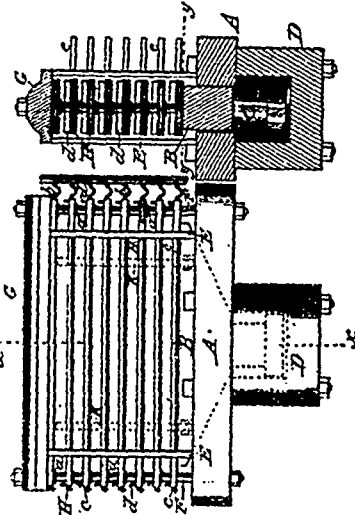
24857 Dawson's Moulding Machine.



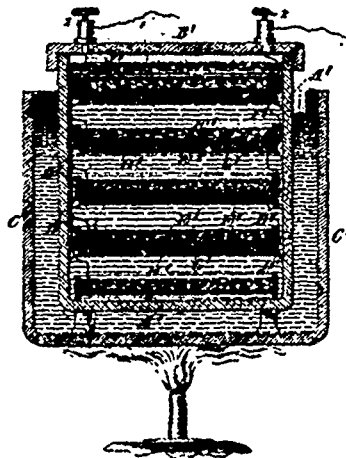
24858 Headen's Foot Power Hammer.



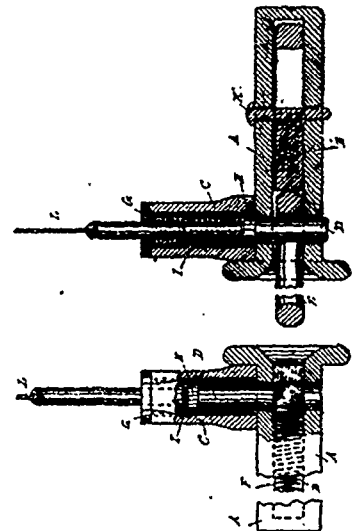
24859 Shepherd's Machine for Making Wooden Hoops.



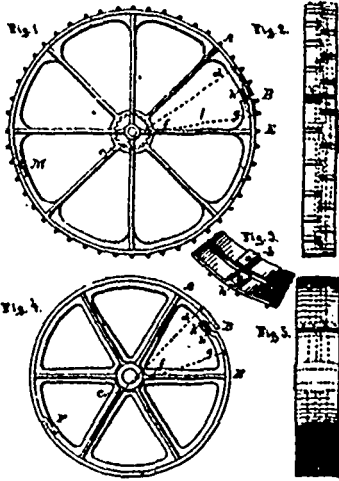
24860 Smith's Machine for Pressing and Drying Lumber.



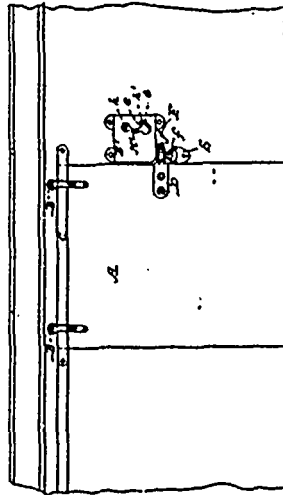
24861 Case's Apparatus for Converting Heat into Electrical Energy.



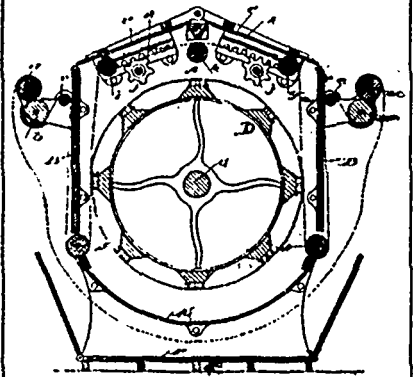
24862 Whiteside's Railway Car-Coupler.



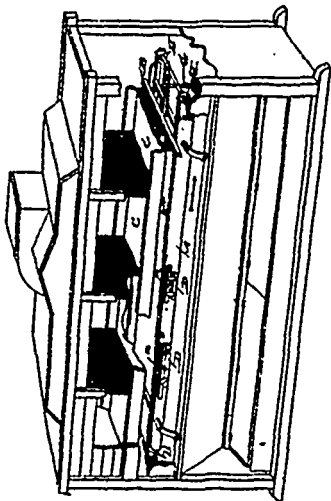
24863 Whiteley's Cast Metal Wheel for Harvesters.



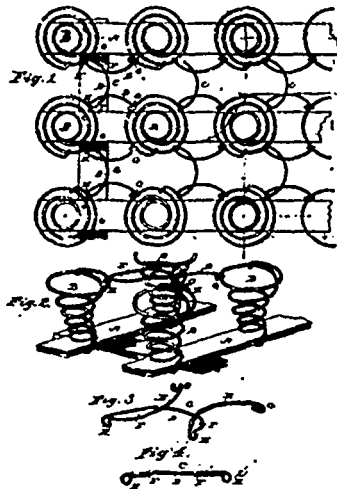
24864 Gordon & Hamilton's Sliding Door Latch.



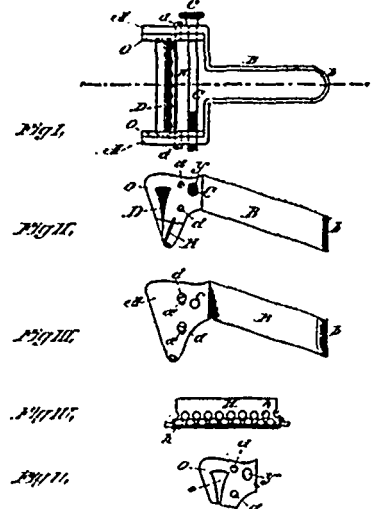
24865 Shearer & Karch's Double-Acting Rotary Glig



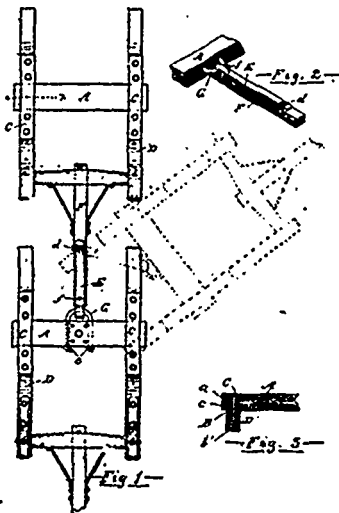
24866 Huxtable's Middlings Purifier



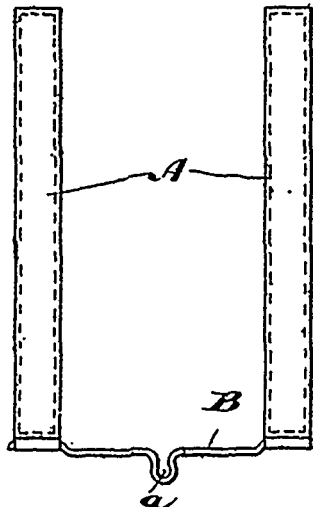
24867 Butterfield's Bed Spring



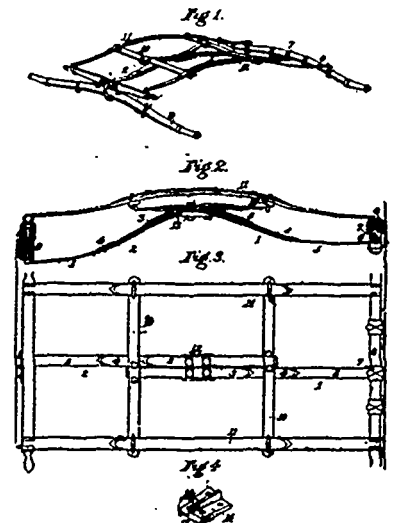
24868 Patridge & Sweeney's Shaving Apparatus.



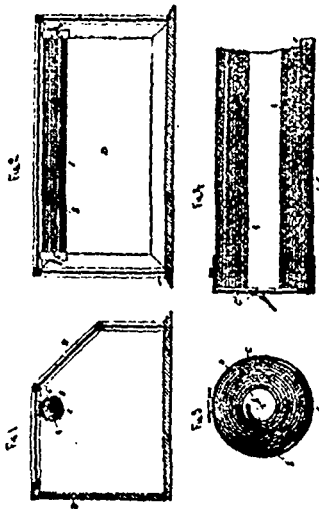
24869 Desjardins' Saw Log Sleigh.



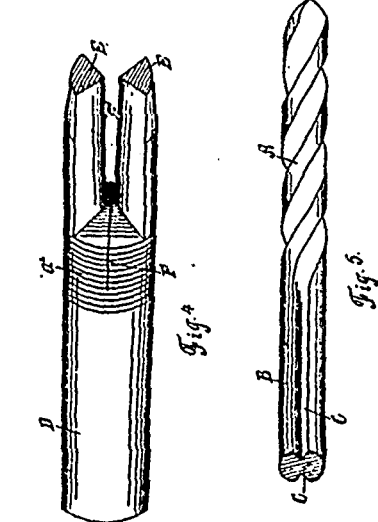
24871 Conboy's Bucky Top.



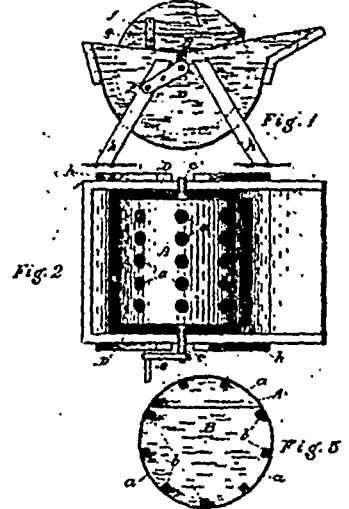
24872 Atkinson's Spring Carriage Reach.



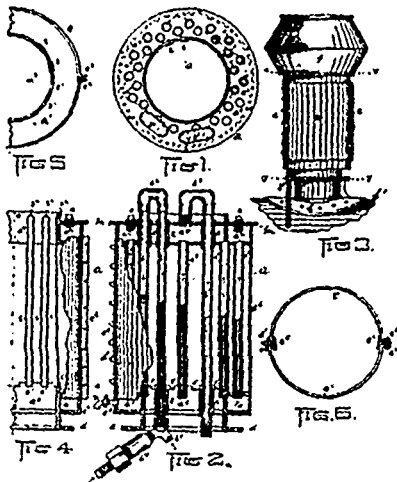
24873 Laurier's Tobacco Moistening Apparatus.



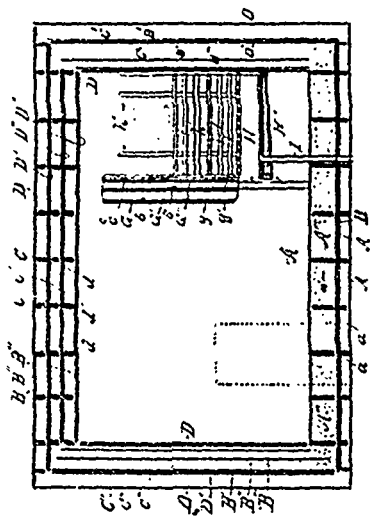
24874 Graham's Combined Drill, Bit Shank and Holder.



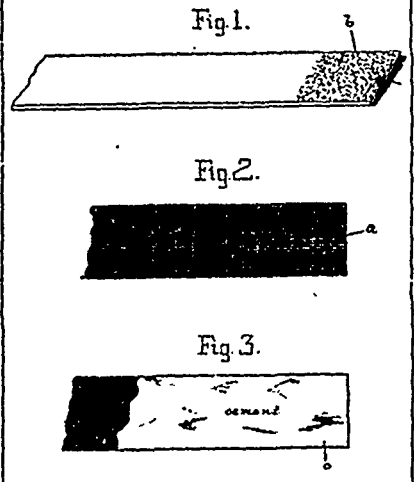
24875 Barkley's Washing Machine.



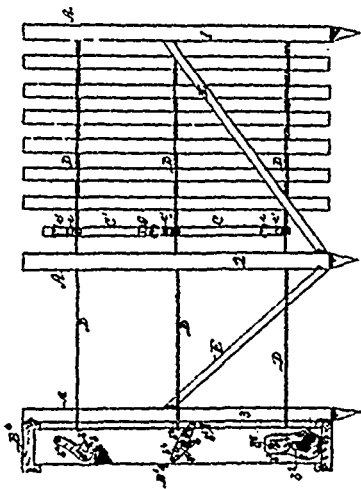
24876 Armstrong's Combined Feed Water Heater and Smoke Stack.



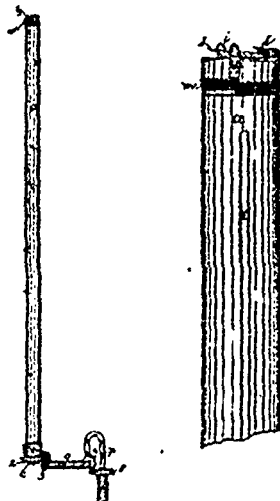
24877 Ruth & Gallup's Refrigerator.



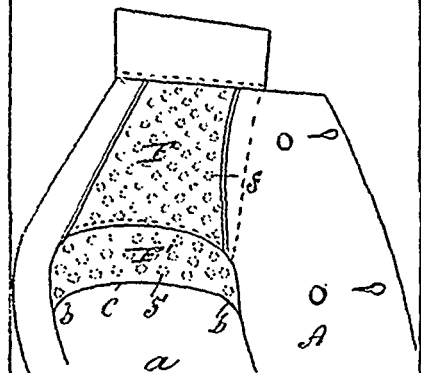
24878 Lindsey's Pulley Covering.



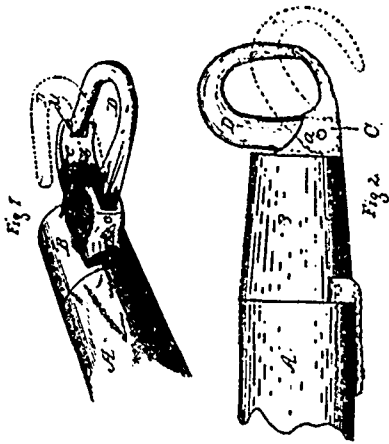
24879 Watson's Fence Machine.



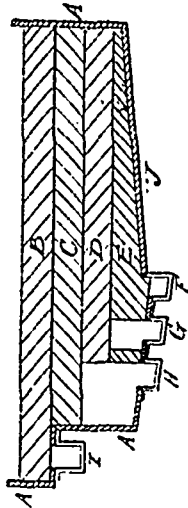
24880 Miller's Hollow Auger.



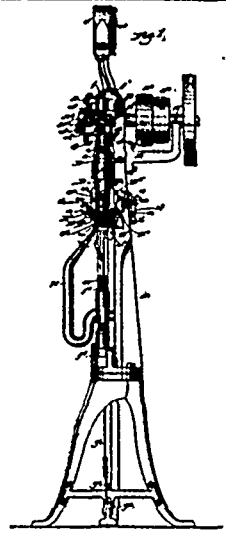
24881 Byer's Waterproof Garment.



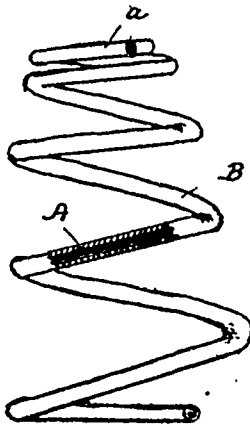
24882 Pond's Whiffletree Hook.



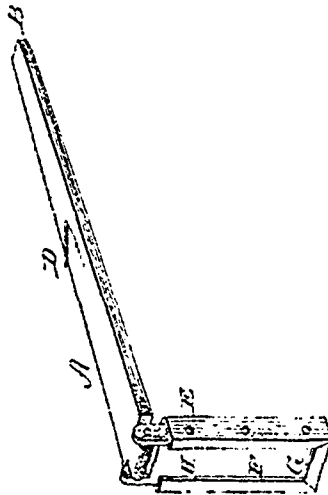
24883 Horson's Separating Attachment for Fanning Mills, etc



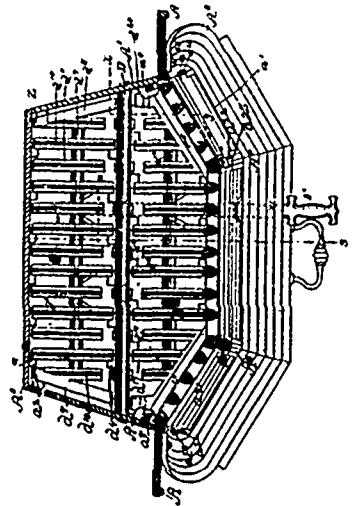
24884 Robinson's Machine for Uniting Soles and Uppers in Boots.



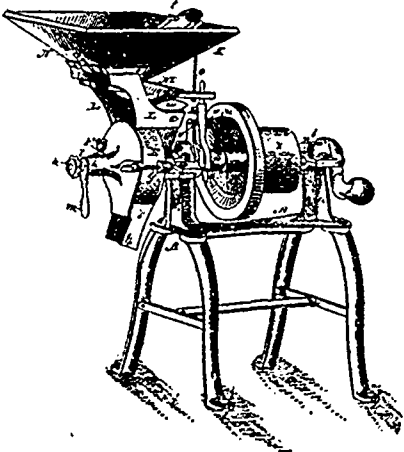
24885 Warmoth's Pessary.



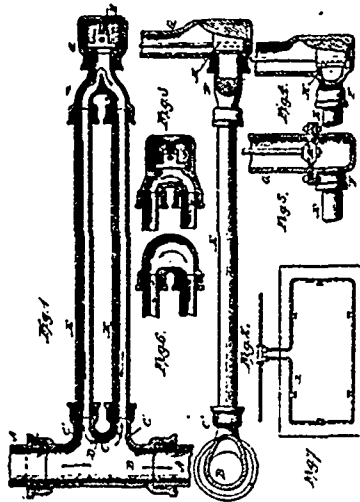
24886 Brown's Marking Device.



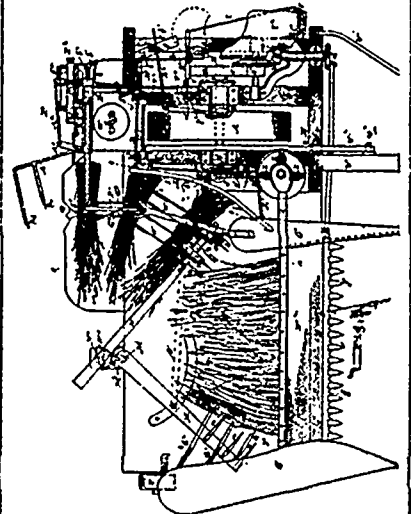
24887 Story's Fire Grate.



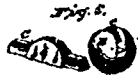
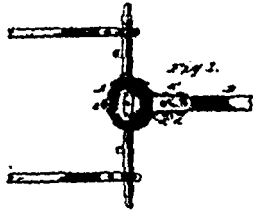
24888 Althouse's Grinding Mill.



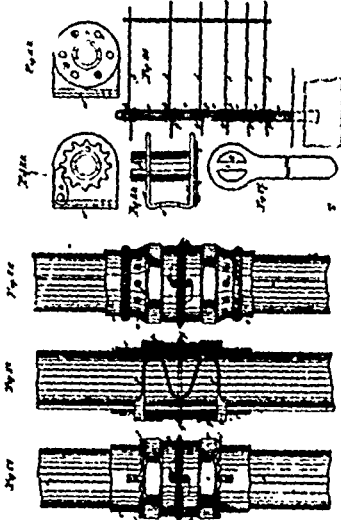
24889 Bassett's Service Pipe for Hydrants, etc.



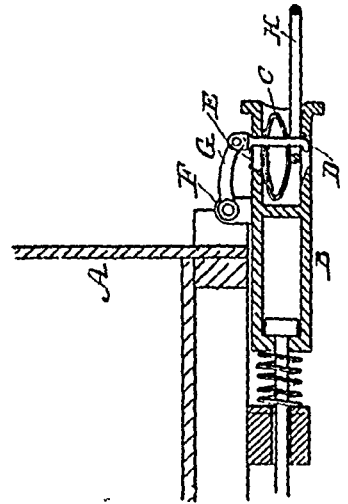
24890 Johnston's Harvesting and Binding Machine.



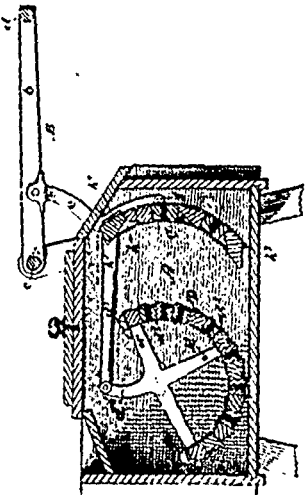
24891 Alexander's Fifth Wheel.



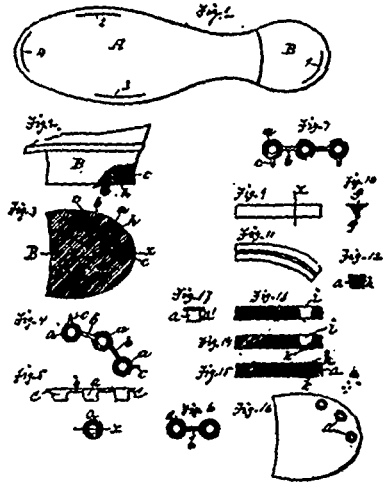
24892 Orr's Metal Fencing.



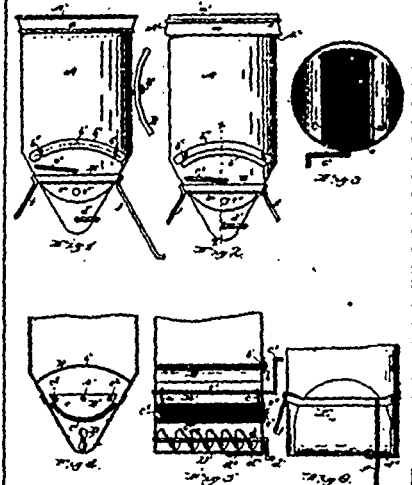
24893 Walton's Car-Coupling.



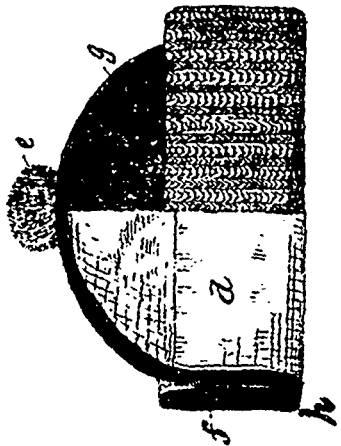
24894 Bocker's Washing Machine.



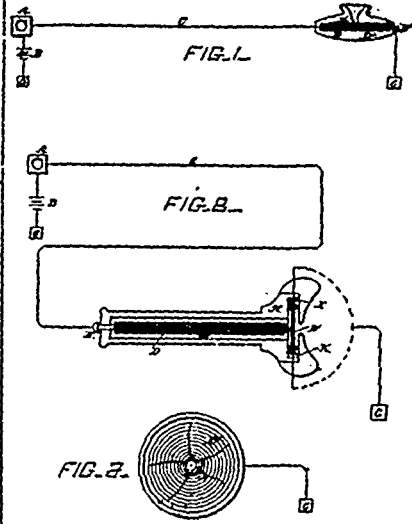
24895 Kempshall's Protector for the Soles and Heels of Boots.



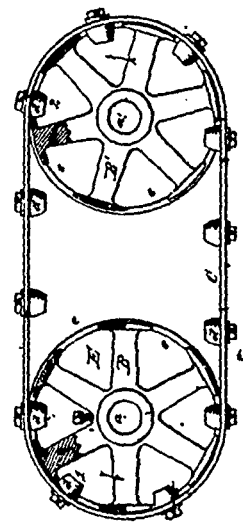
24896 Marr's Combined Flour Box and Sifter.



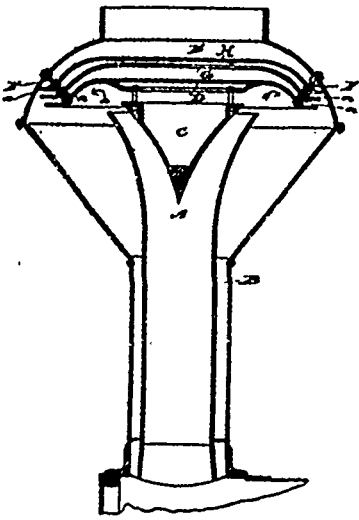
24897 Freschl's Knitted Cap.



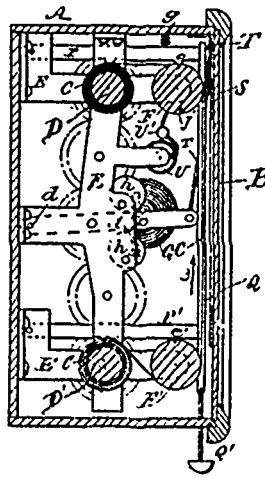
24898 Spaulding's Krotophone.



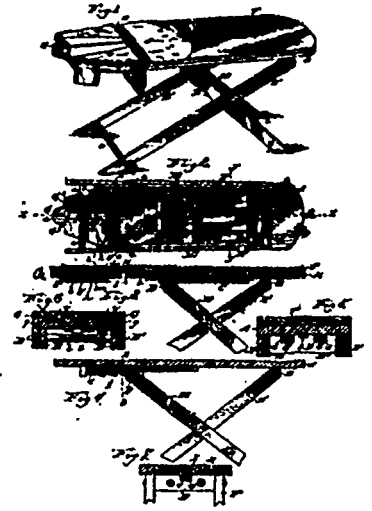
24899 Morse's Belt Gearing.



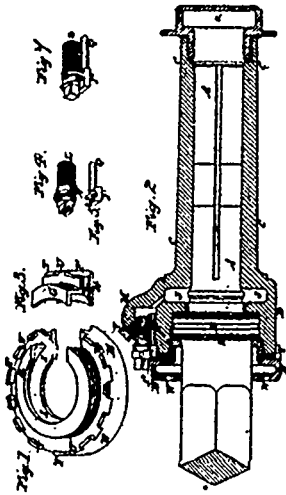
24900 Bruce's Spark Arrestor.



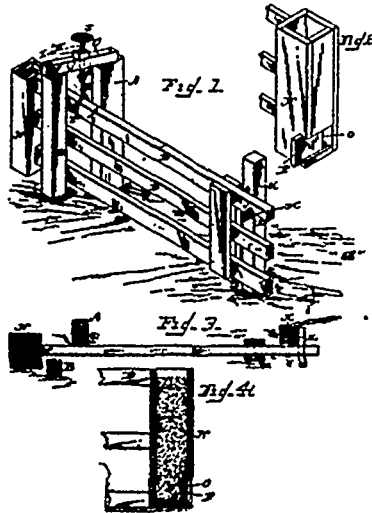
24901 Currie's Station Indicator.



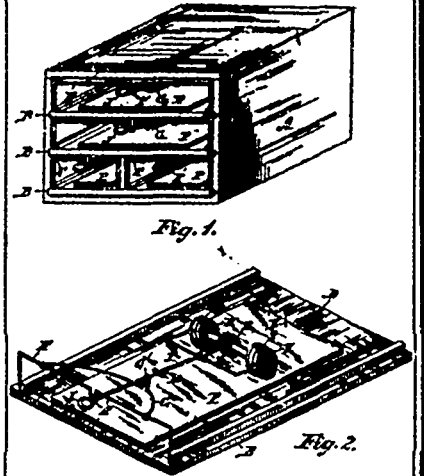
24902 Hacc's Ironing Table.



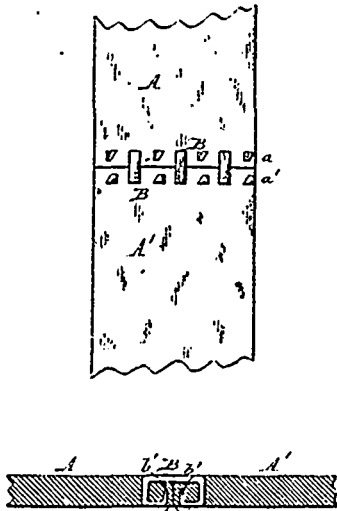
24903 Partridge's Axle Box.



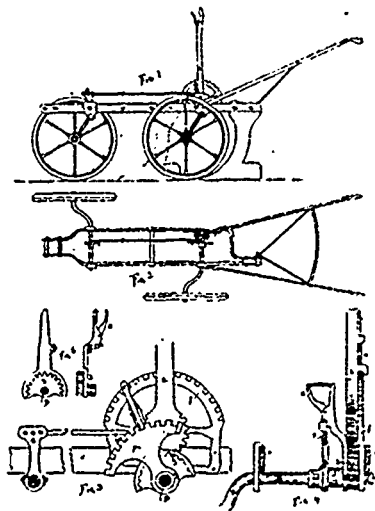
24904 Hughesdon's Gate.



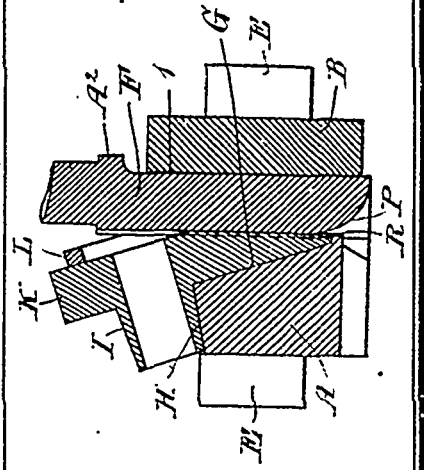
24905 Pritchard's Cabinet for Paper.



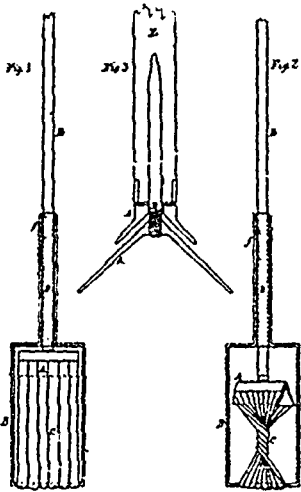
24906 Gingras' Bolt Fastener.



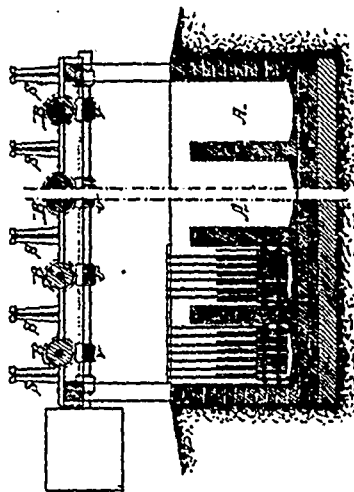
24907 Draper's Gang Plough.



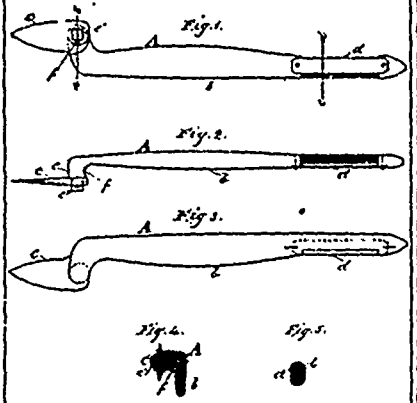
24908 Warren's Die and Swage for Forging Hammers, etc.



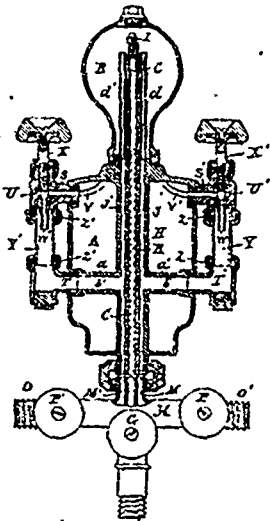
24909 Ketchum's Floor Mop.



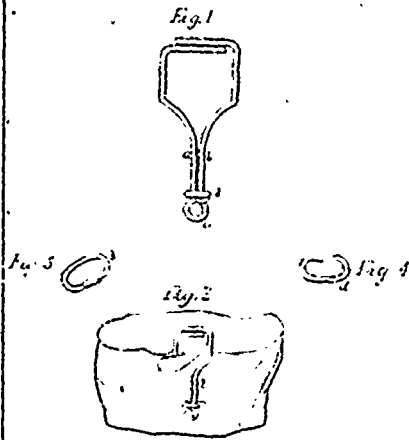
24910 Heron's Bleaching Apparatus.



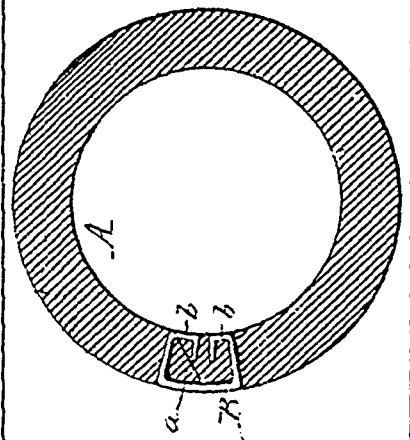
24911 Bothwell's Can Opener.



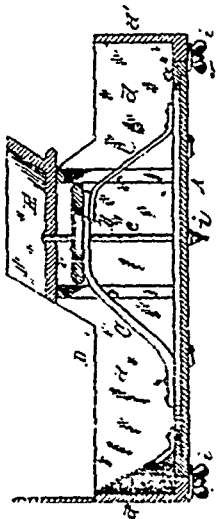
24912 Craig's Steam Engine Lubricator.



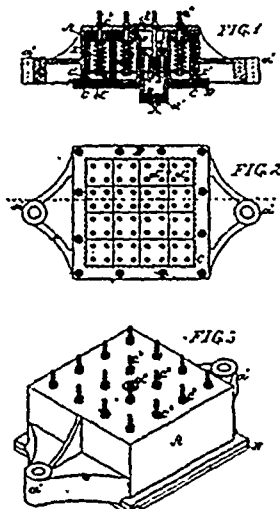
24913 Willard's Stocking Supporter.



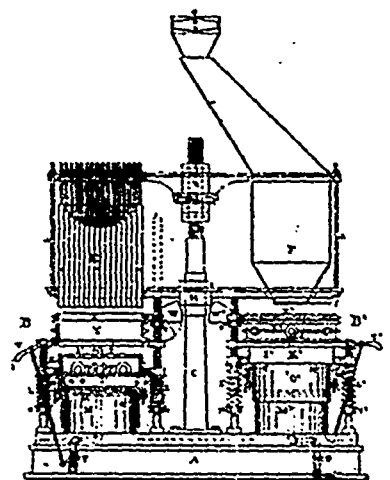
24914 Glogras' Leather Washer.



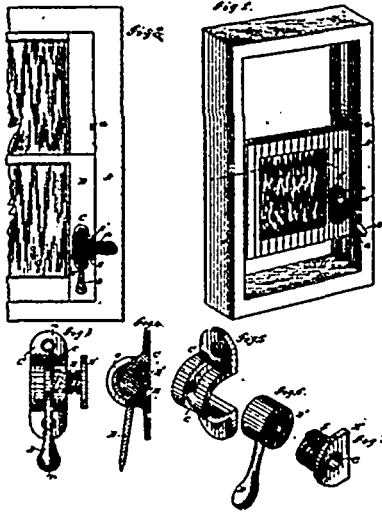
24915 Burdick's Wagon.



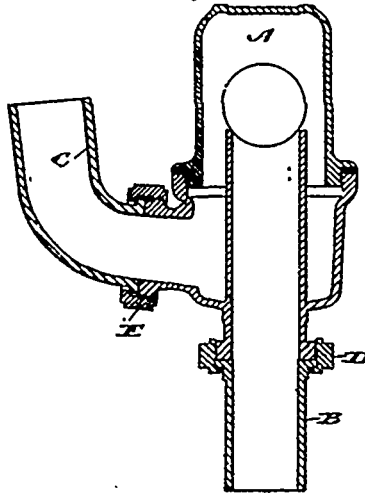
24916 Moor's Machine for Making Sand Moulds for Metal.



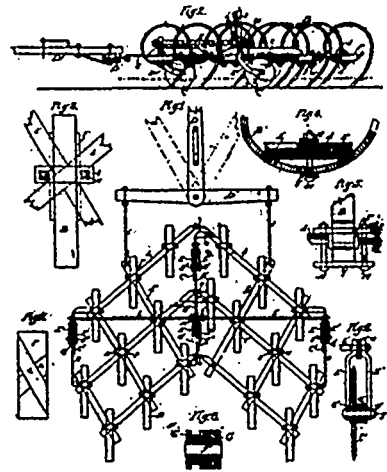
24917 Moor's Machine for Making Sand Moulds for Metal.



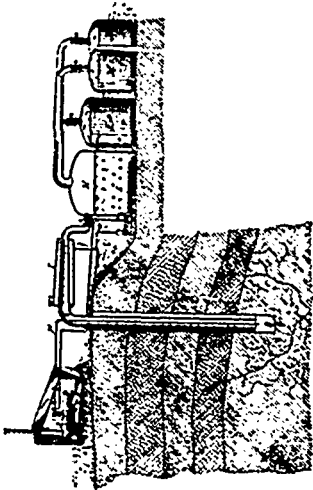
24918 Bascom's Sash Fastener.



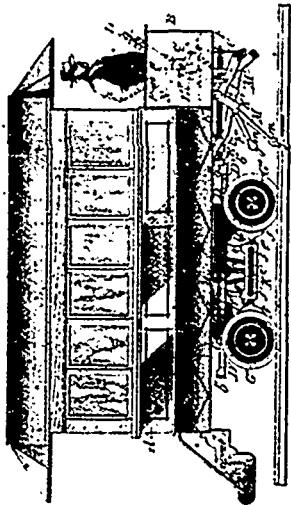
24919 Morrison's Plumbers' Trap.



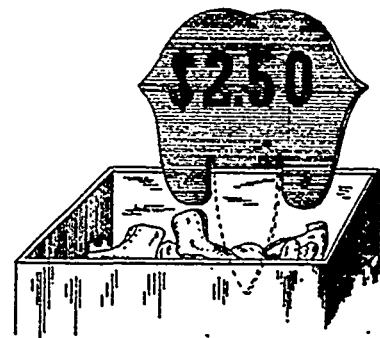
24920 Dow's Harrow.



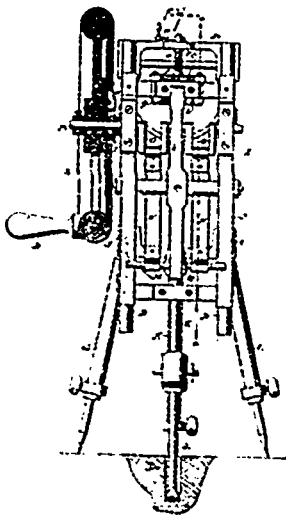
24921 Hall's Method of Obtaining Oil from Wells.



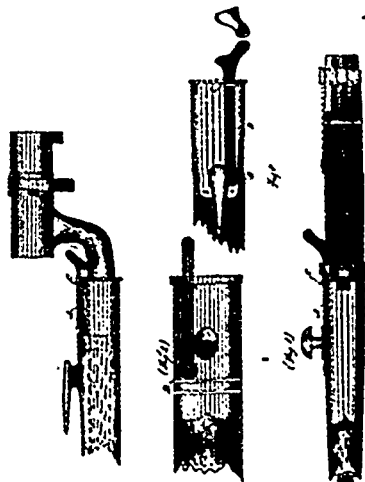
24922 Cutter's Street Car.



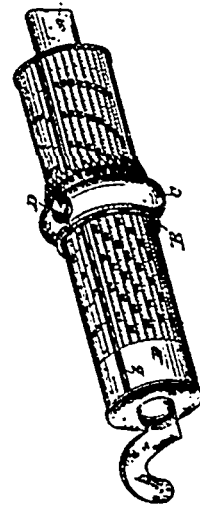
24923 Rampe's Combined Label and Holder.



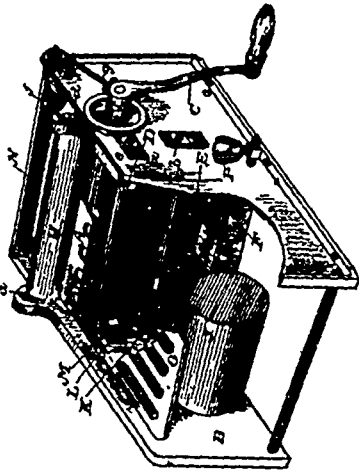
24924 Ingersoll's Rock Drill Machine.



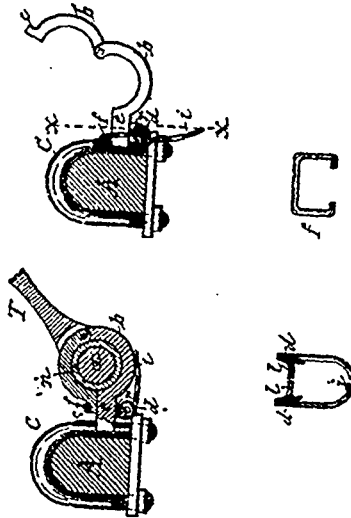
24925 Little's Lock and Guard for Sword Bayonet and Bayonet.



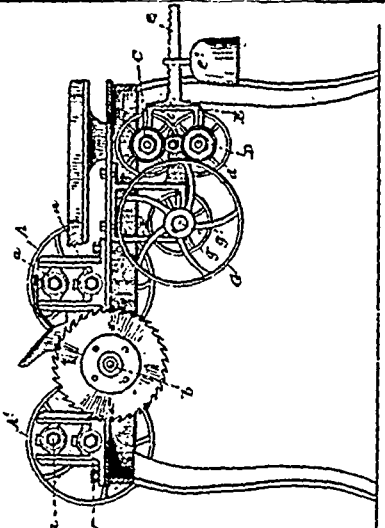
24926 Palmer's Scale Beam.



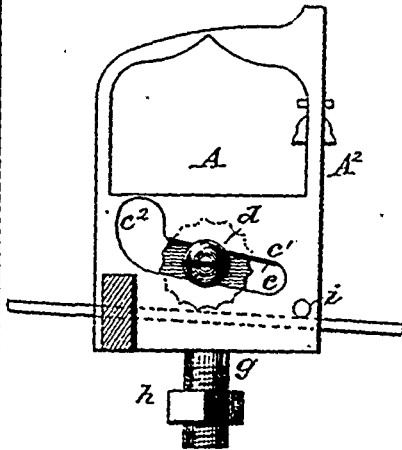
24927 Lash's Letter-Copying Machine.



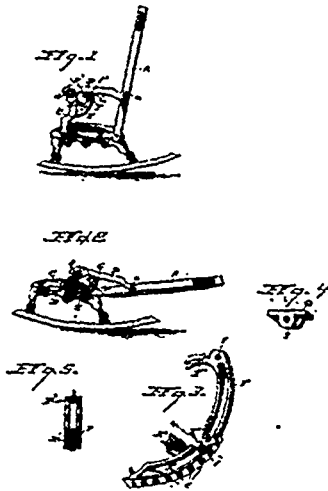
24928 Hannan's Thill Coupling.



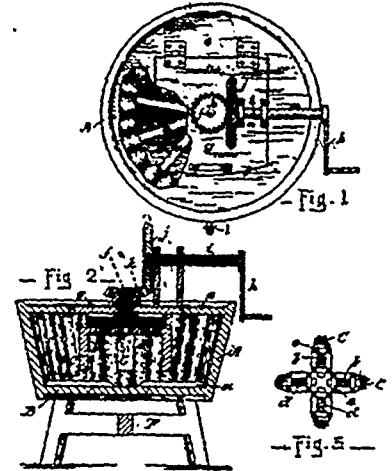
24929 House's Lath Machine.



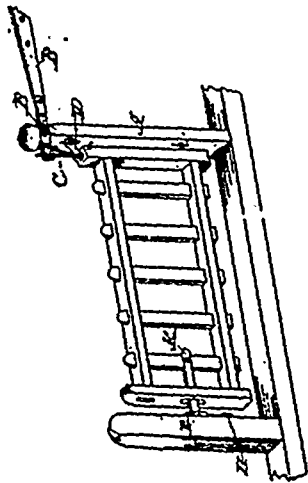
24930 King's Check Rein Holder.



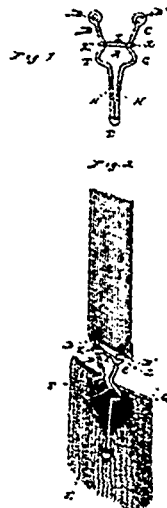
24931 Hunger's Reclining Chair.



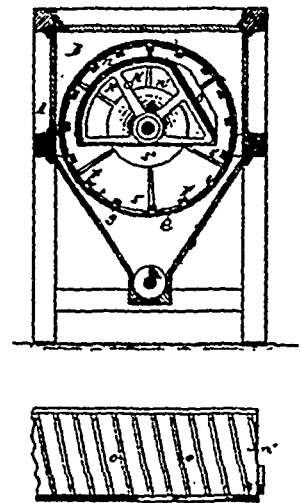
24932 Trembley's Washing Machine.



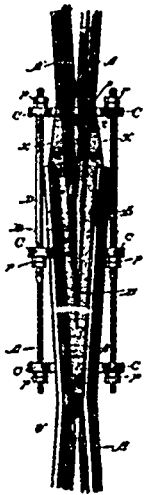
24935 McDonnell's Automatic Gate.



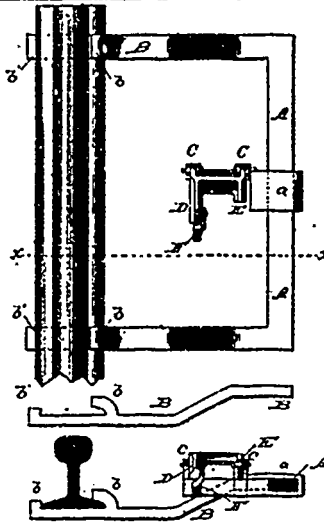
24936 Atwood's Stocking Fastener.



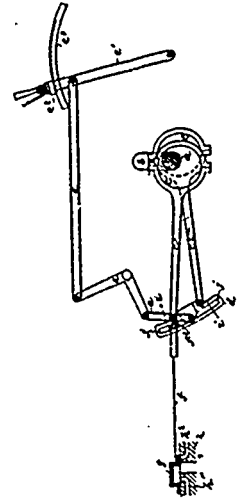
24937 Helne's Flour Bolt.



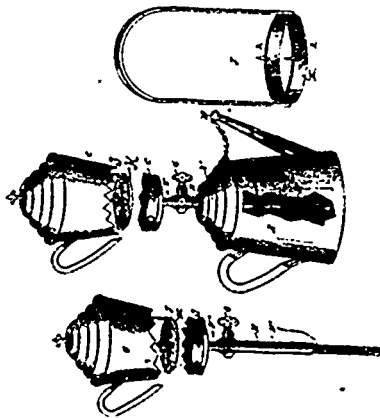
24938 Strom's Railway Frog.



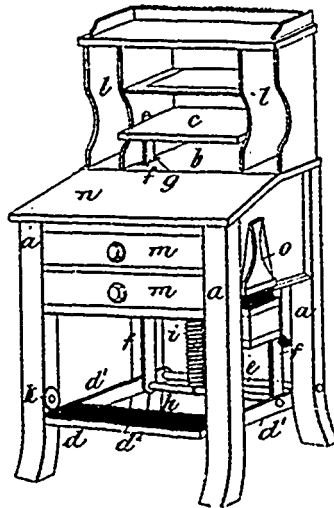
24939 Strom's Frame for Track Drill.



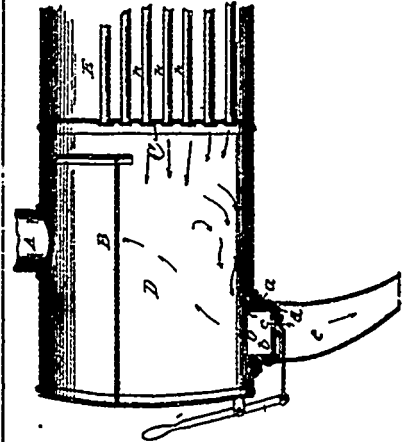
24940 Garratt's Expansion Link for Valve Gear.



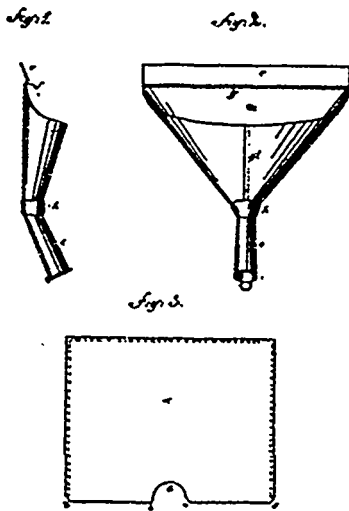
24941 Hopkin's Coffee or Tea Pot.



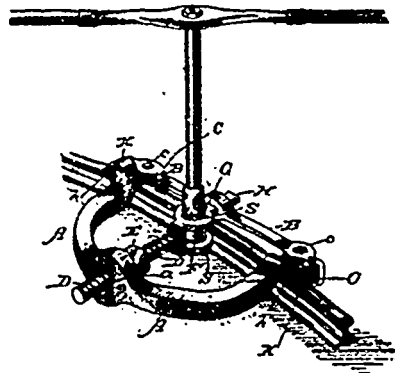
24942 Capel & Gaskill's Process for Copying Letters and Documents.



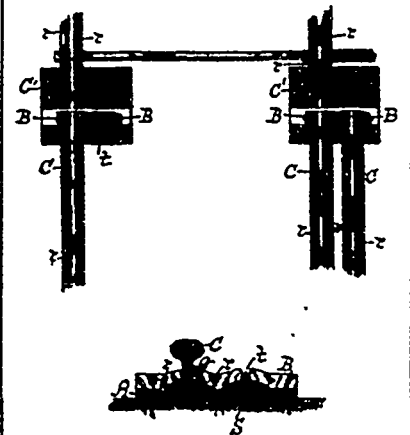
24943 Bragg's Spark Arrester.



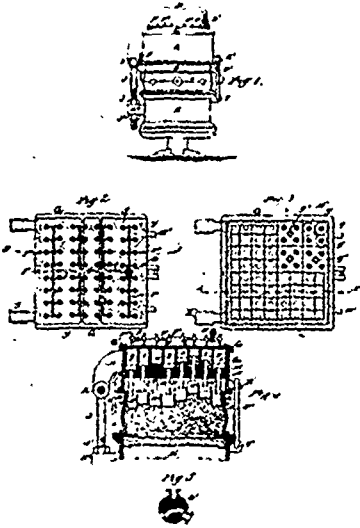
24945 Wyncoop's Dust Pan.



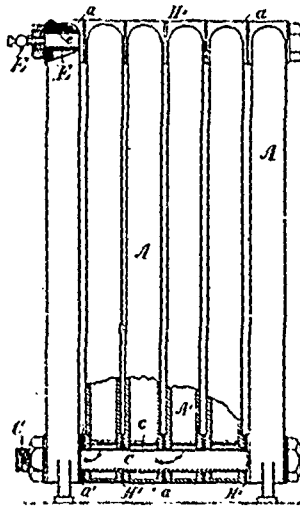
24946 Strom's Rail Bender.



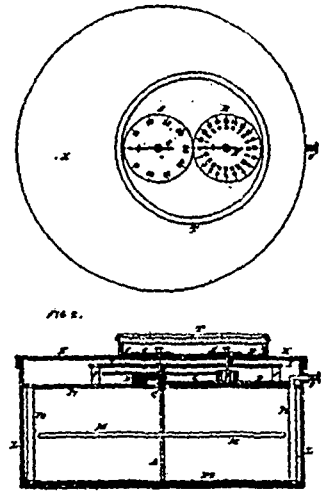
24947 Strom's Railway Chair.



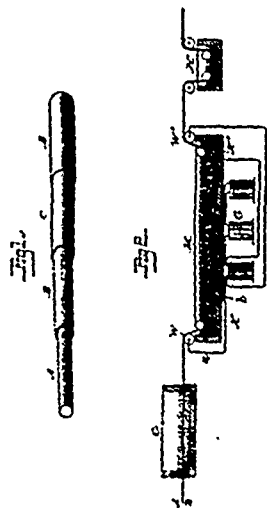
24948 Moore's Machine for Making Sand Moulds.



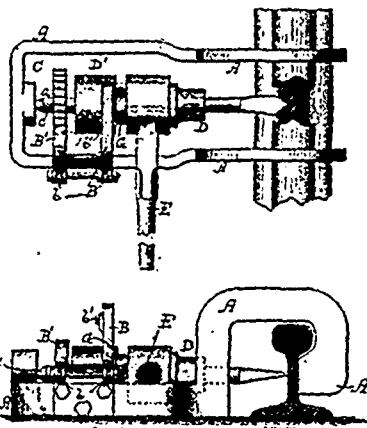
24949 Smith's Heating Apparatus.



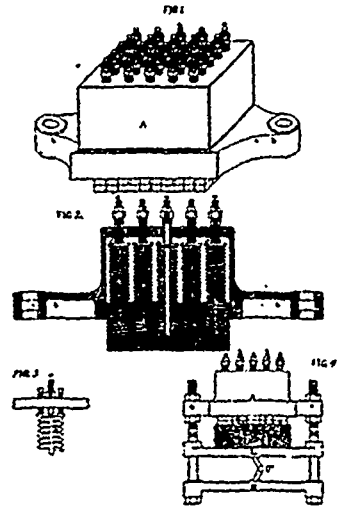
24950 Scotland's Twist Indicator for Ship Cables.



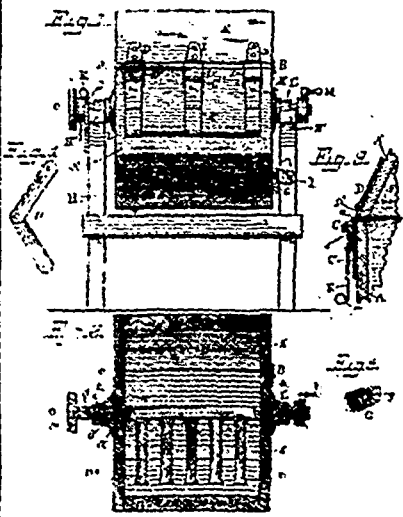
24951 Acheson's Electric Conductor.



24952 Strom's Ratchet Drill.



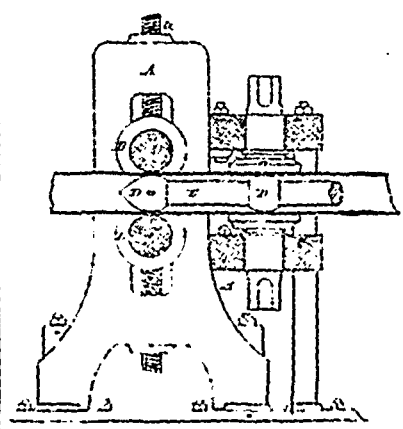
24953 Moore's Machine for Making Sand Moulds.



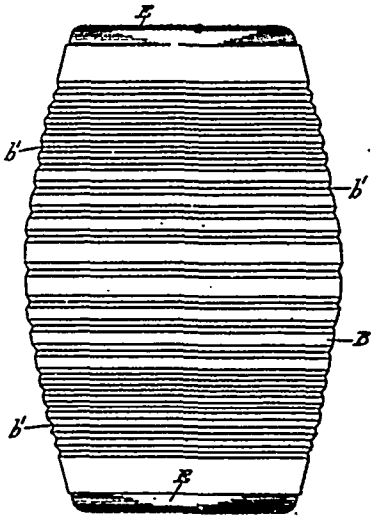
24954 Delano's Churn.



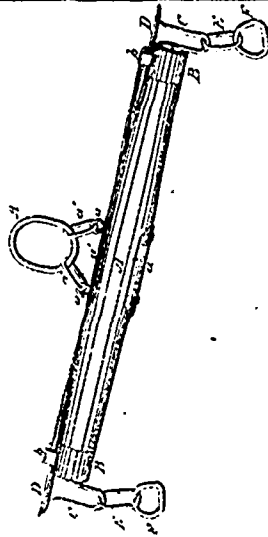
24955 Morgan's Car-Coupling.



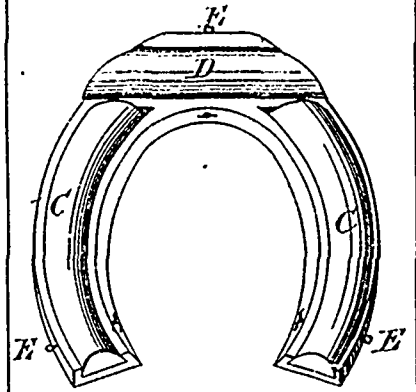
24956 Kellogg's Machine for Manufacturing Tubes, etc.



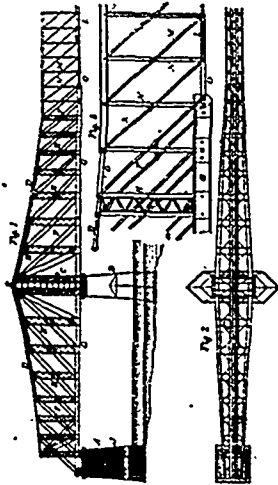
24957 Cutbertson's Metallic Oil Barrel.



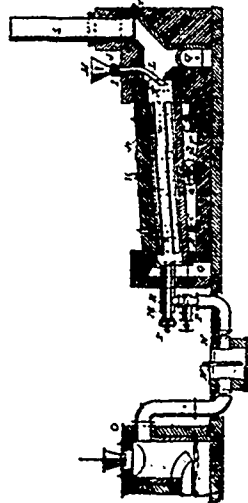
24958 McPhall's Neck Yoke



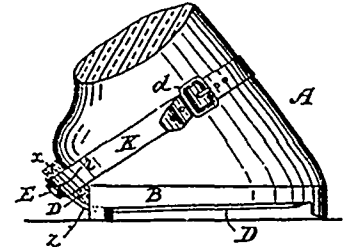
24959 Hobson's Horse Shoe.



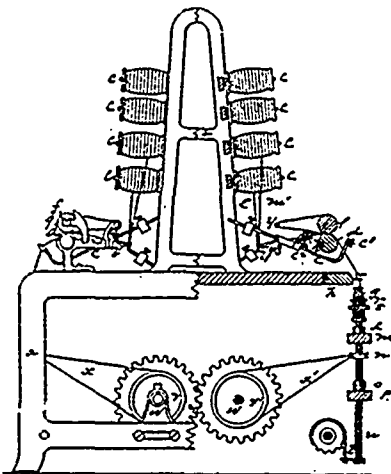
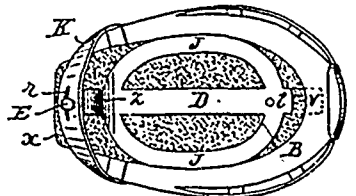
24960 Tomlinson's Bridge.



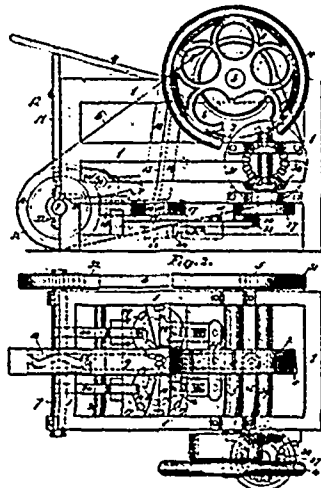
24961 Ransome's Manufacturing Cement.



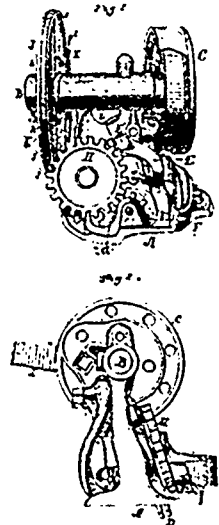
24962 Collin's Hoof Pad.



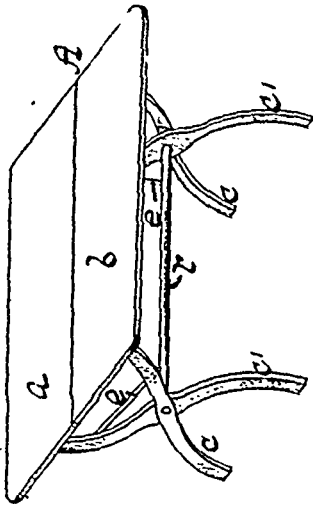
24963 Etchells' Doubling and Twisting Machine.



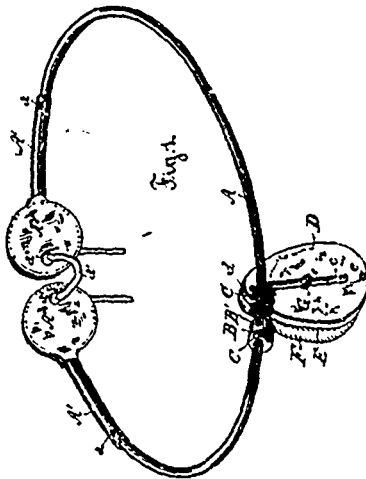
24964 Bissett's Nail Cutting Machine.



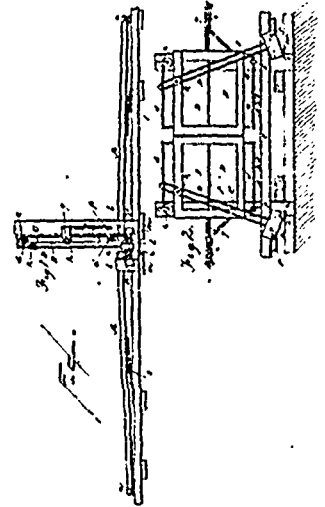
24966 Oooloy's Cord Holder for Harvesters.



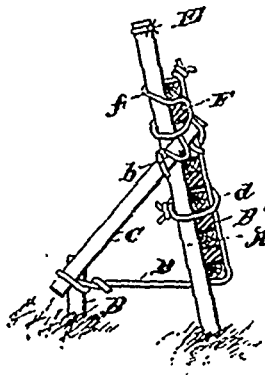
24967 Decker's Folding Table.



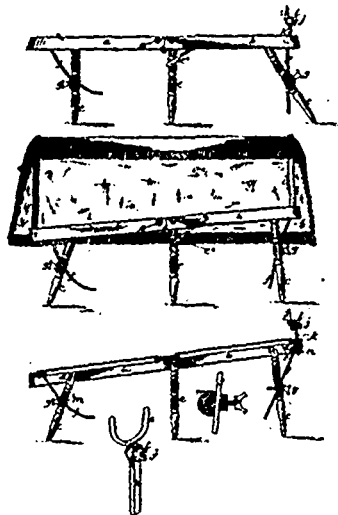
24968 Armstrong's Abdominal Truss.



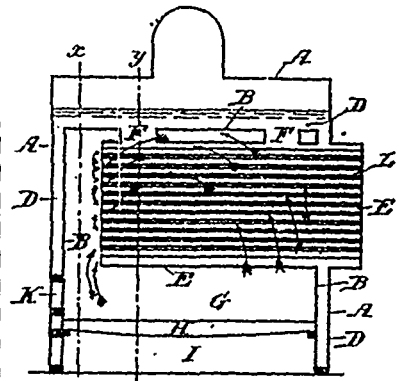
24969 Smith's Railway Gate.



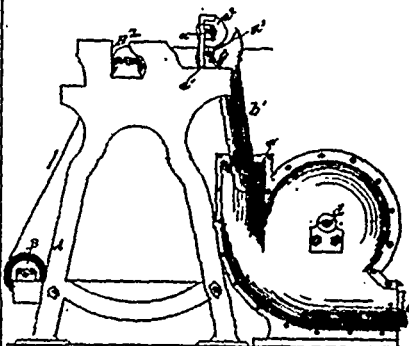
24970 Colbert's Fence.



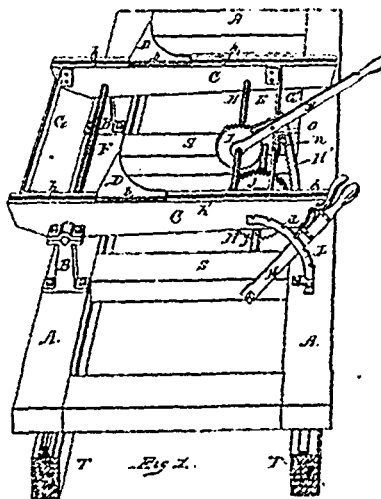
24971 Snow's Embalming Board.



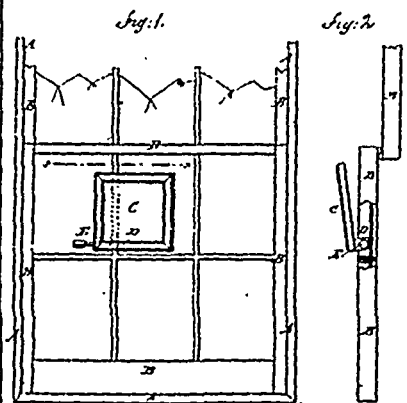
24972 Foster's Steam Boiler.



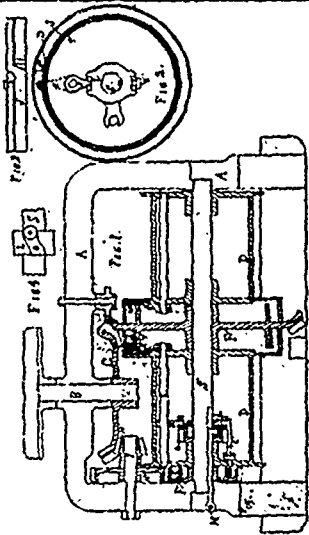
24973 Edmunds' Paper-trimming Machine.



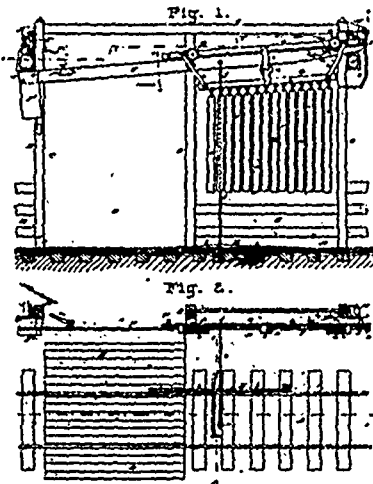
24974 Strong's Sawmill Carriage.



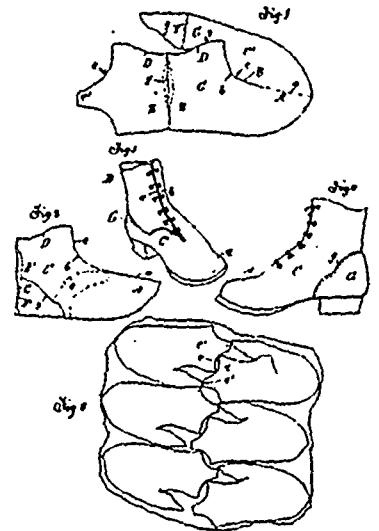
27976 Phillip's Window Shaving Mirror



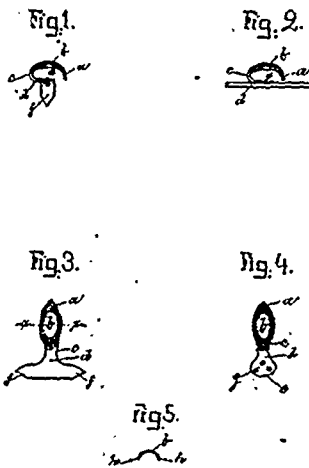
24977 Robertson's Hoisting Machine.



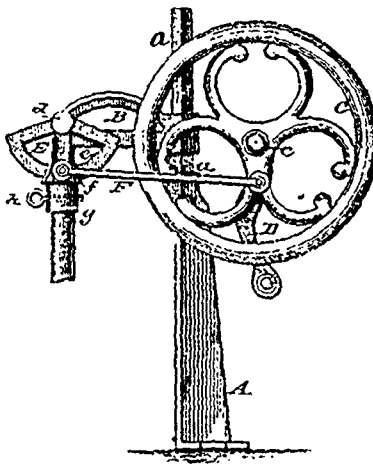
24978 Putnam's Railway Gate, etc.



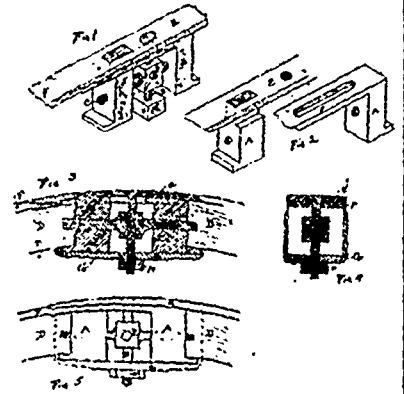
24979 Lemay's Boot.



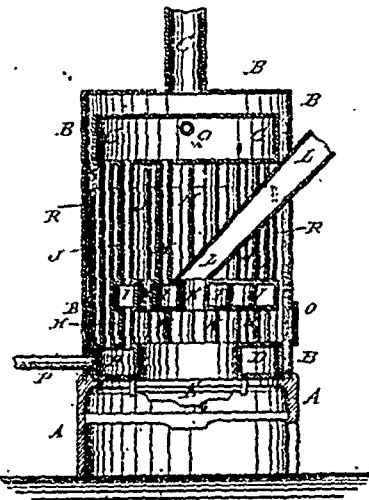
24980 Piper and Reed's Lacing Stud.



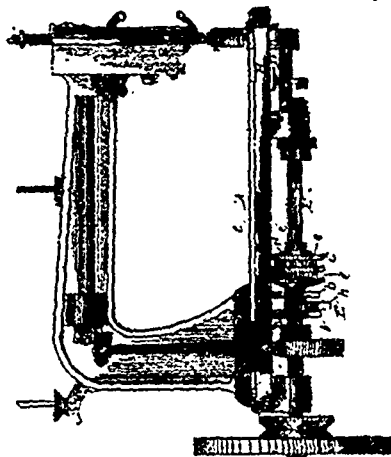
24981 Fellrath's Churn Power.



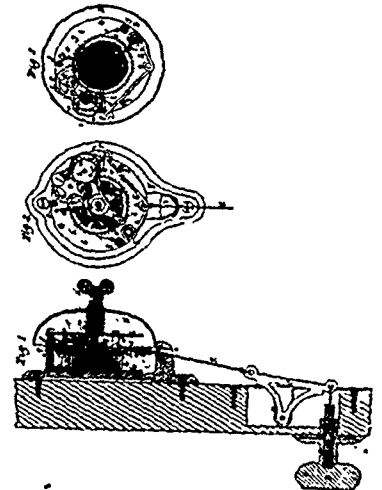
24982 Francis' Method of Placing Tires on Wheels.



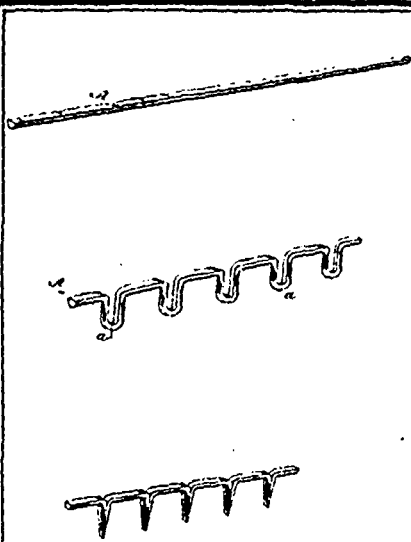
24983 Bronson's Steam Heater.



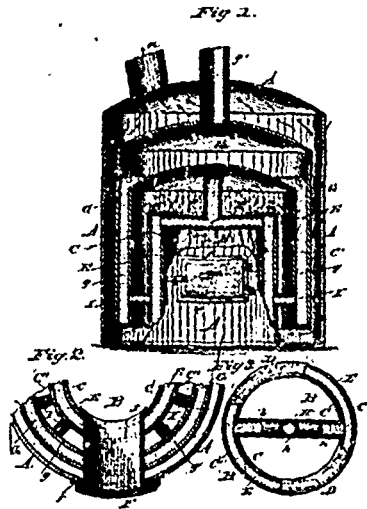
24984 Bortree's Sowing Machine.



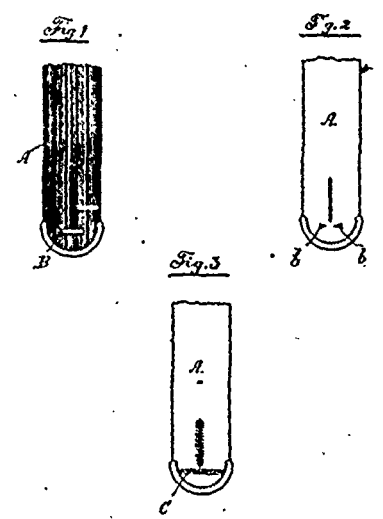
24985 Busby's Alarm for Doors, etc.



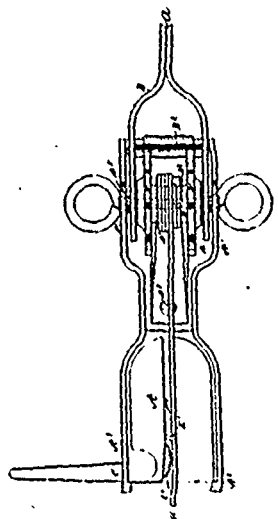
24986 Chase's Lasting Tack Strip



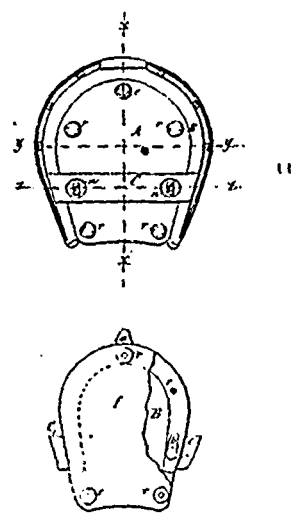
24987 Schimpf's Circulating Boller.



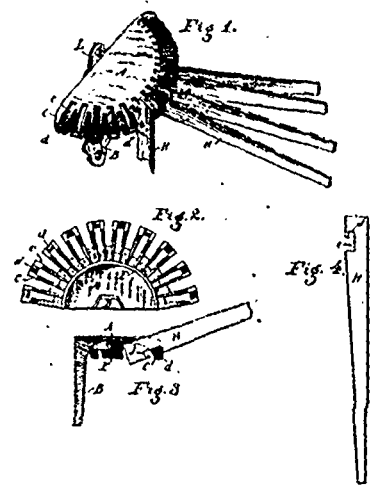
24988 Beaudry's Braco.



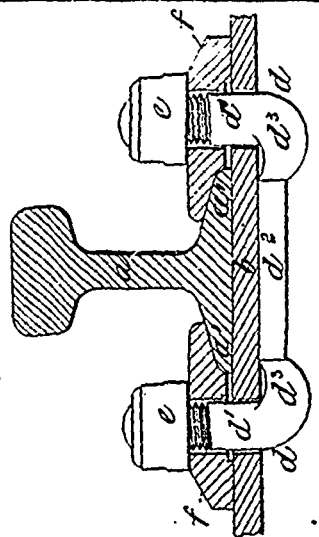
24989 Reid's Wire Straining Machine.



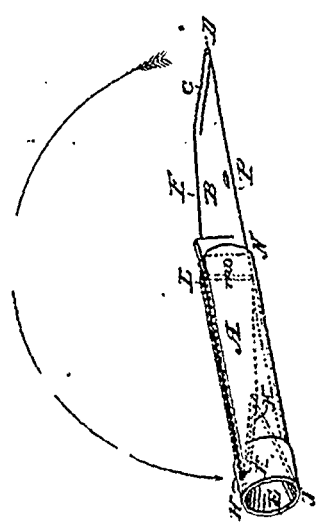
24990 Meredith's Horseshoe Pad.



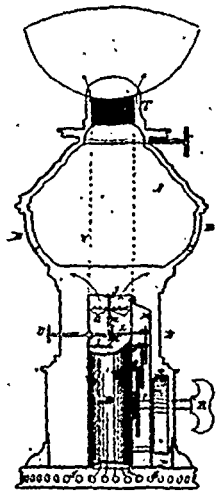
24991 Hastine's Clothes Drier



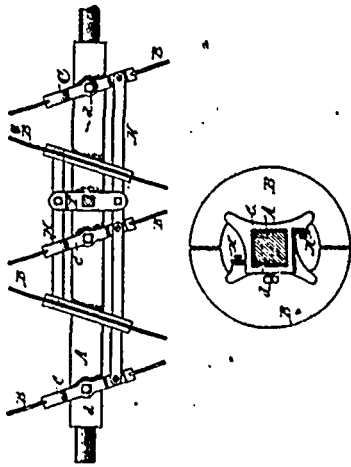
24992 Ibbotson's Fastening for Railway Rails, etc.



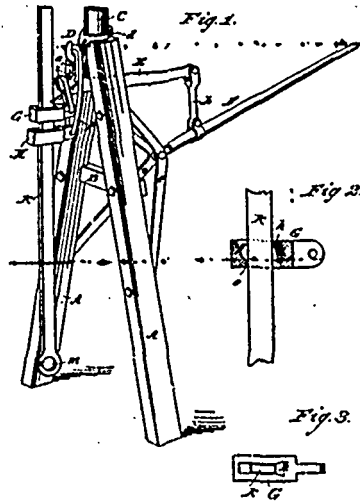
24993 Hillman's Combined Knife, Ink Eraser, etc.



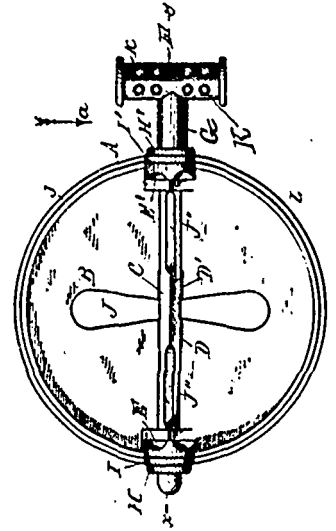
24994 Heath's Kerosene Lamp Without Chimney.



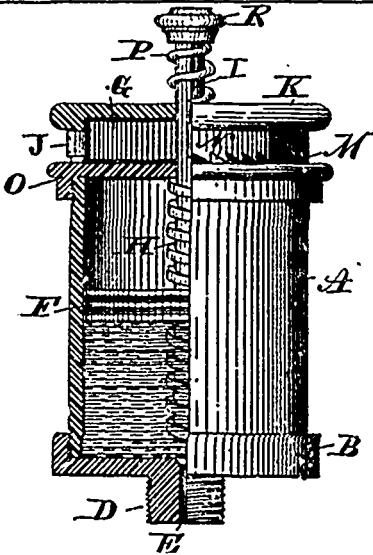
24995 Gowans' Screw Conveyor.



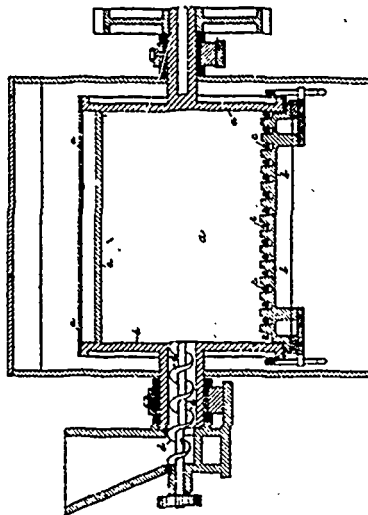
24996 Martin's Stump Puller.



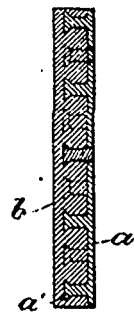
24997 Lasher's Stove Pipe Damper.



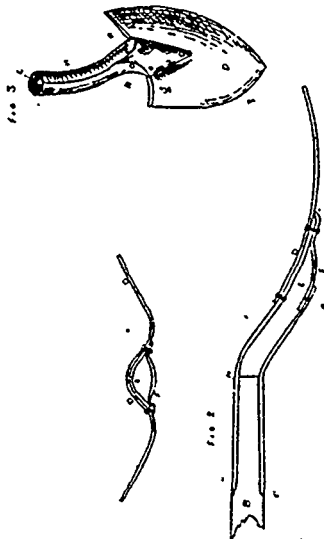
24998 Bolto's Lubricator.



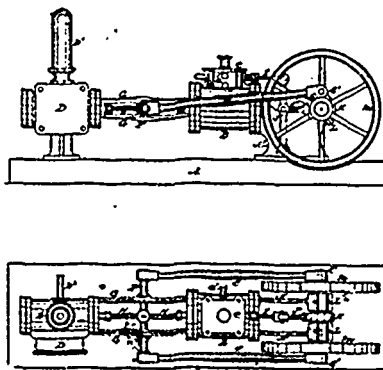
25000 Rosso & Wolters' Hydraulic and other Cements.



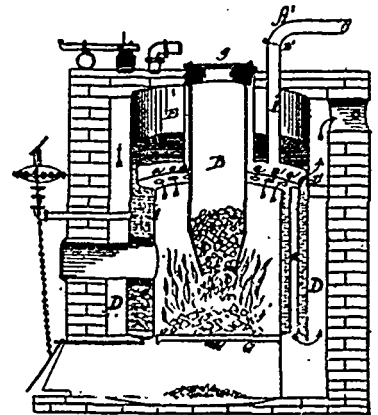
25001 Russell's Paper Pulp Digester.



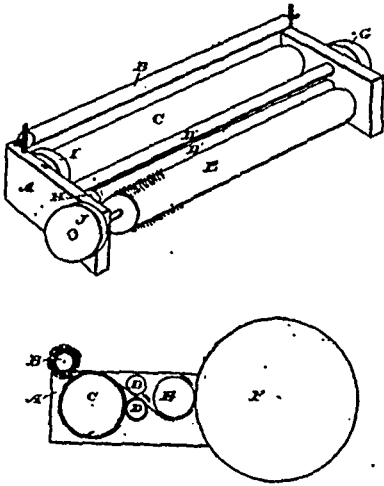
25002 Fenerty's Shovel.



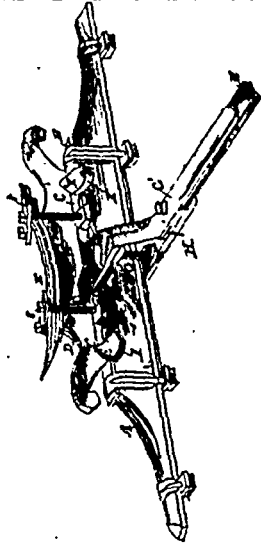
25004 Bahr's Double-Acting Steam Pump.



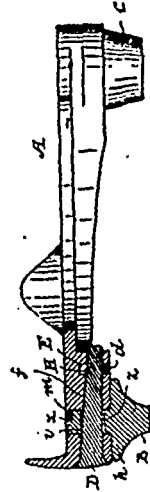
25005 Dunning's Base Burning Stove.



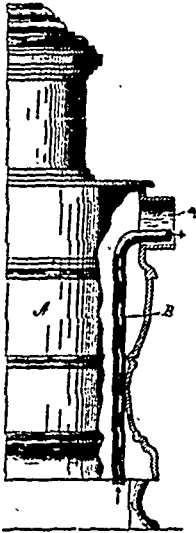
25006 Van Egmond's Carding Machine.



25007 Burdsall's Running Gear for Vehicles.



25008 Holland's Horseshoe.



25009 Blinkerhoff's Attachment for Stoves.

Fig. 1.



Fig. 2.



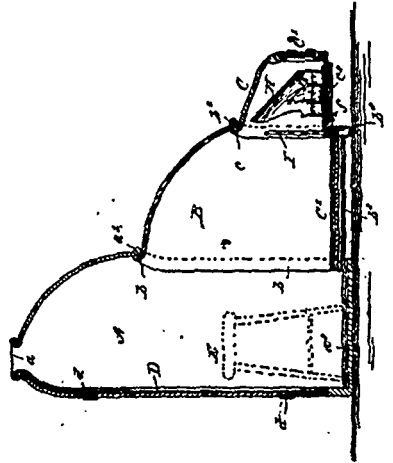
Fig. 3.



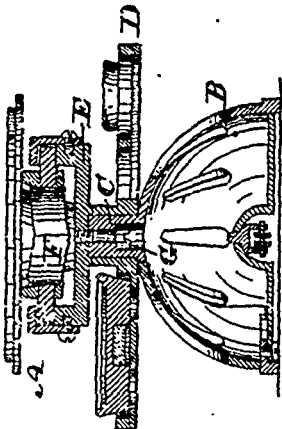
Fig. 4.



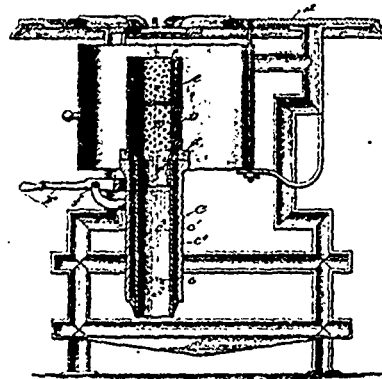
25010 Thomas' Gas Burner Tip.



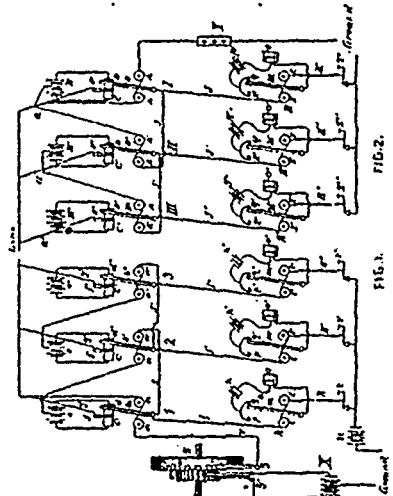
25011 Munro's Vapour Bath.



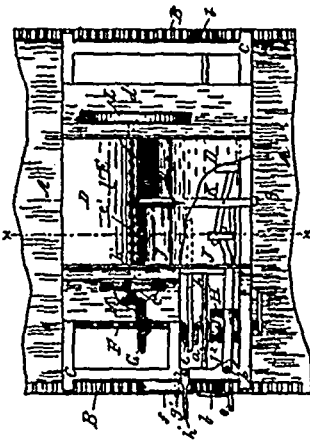
25013 Lawrence's Scale, Weight Tray, etc.



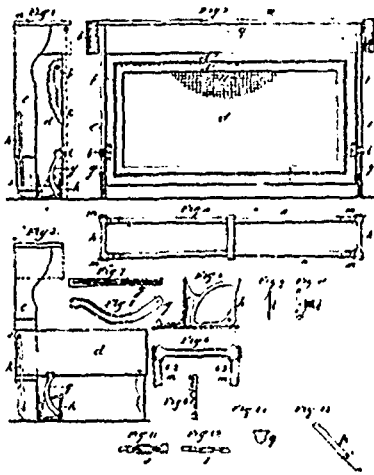
25014 Many's Combined Oil and Vapour Burner.



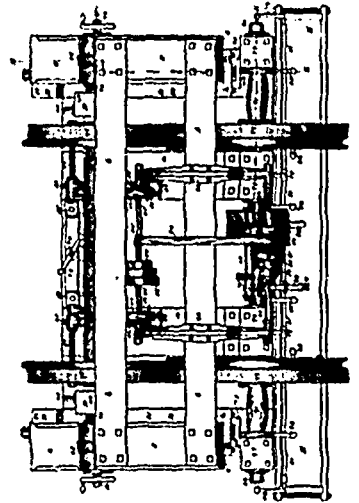
25015 Heale's Multiple Telegraphy.



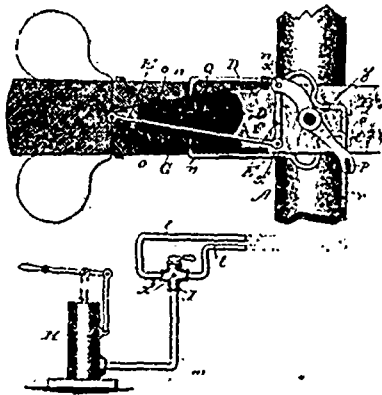
25016 Roberge's Card Mill



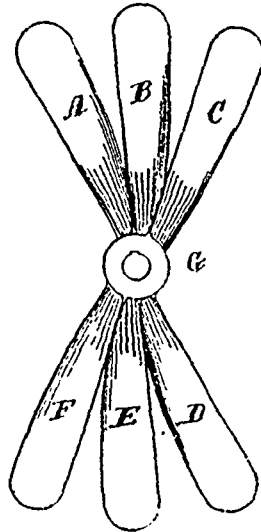
25017 Cairncross's Folding Bed.



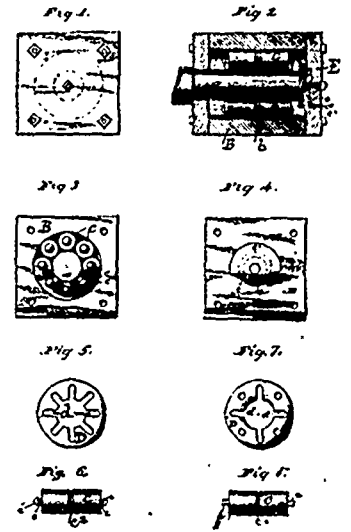
25018 Millmore's Machine for Dressing and Hardening Metal Rods.



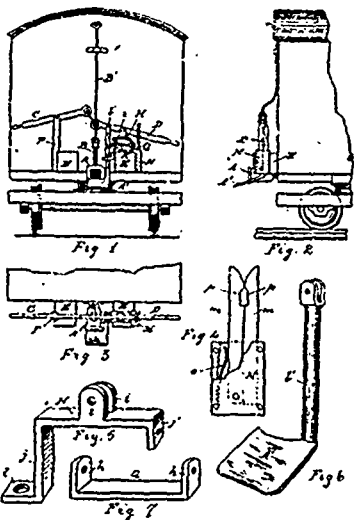
25019 Mill's Movement for operating Gates.



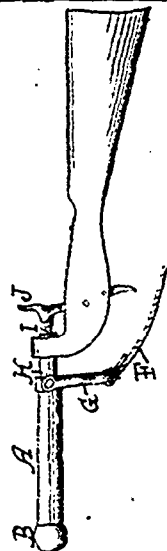
25020 Dickinson's Screw Propeller.



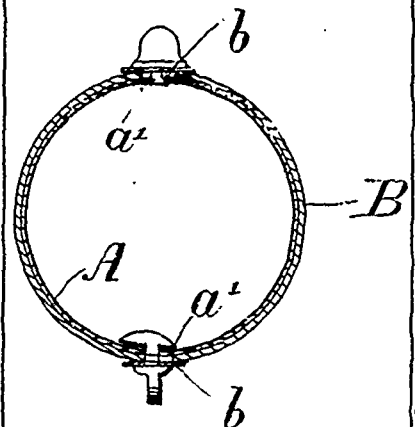
25021 Wilcox's Journal Box.



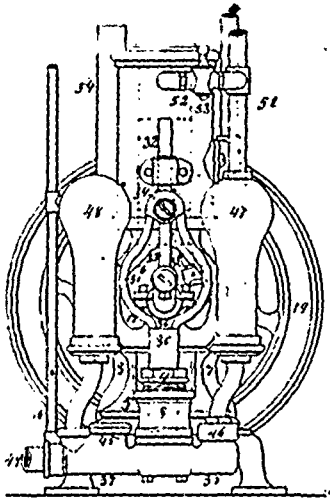
25022 Woodward's Car-Coupling.



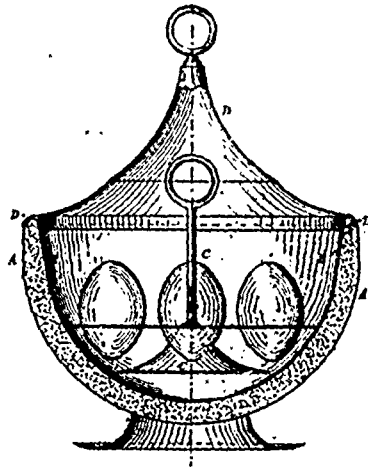
25023 Ingersoll's Gun for throwing Life-Saving Lines.



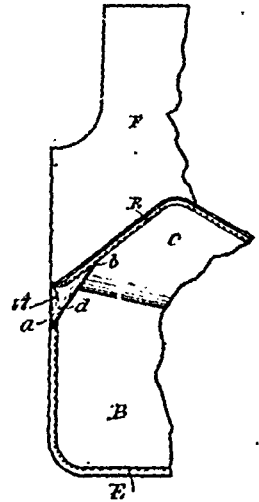
25024 Clendenning's Fastening for Sheet Metal Pipes.



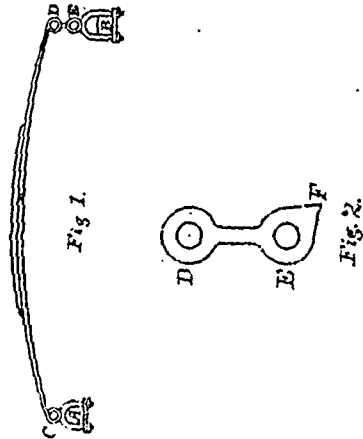
25025 Taylor & Hartig's Gas Engine Motor and Liquid Pump.



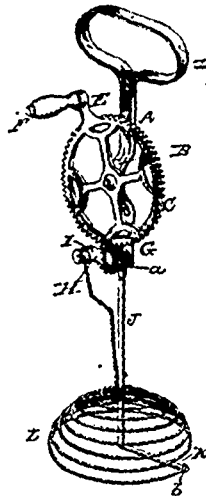
25026 Crawford's Apparatus for Boiling Eggs.



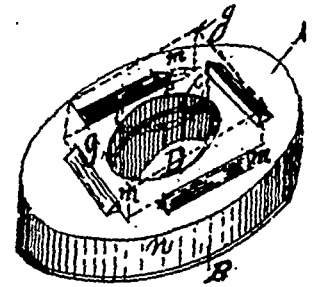
25027 Mambert's Method of Attaching Gussets to Shirts.



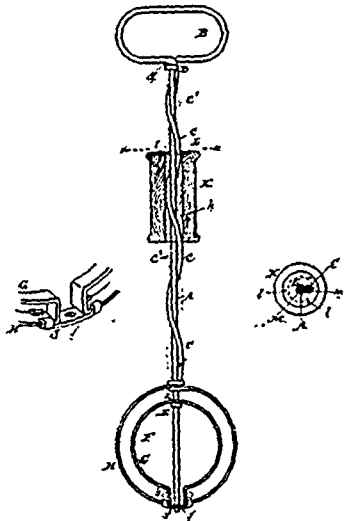
25029 Schmidt's Carriage Gear.



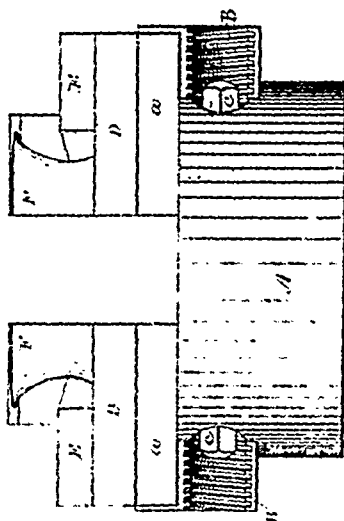
25030 Thomas' Egg-Beater.



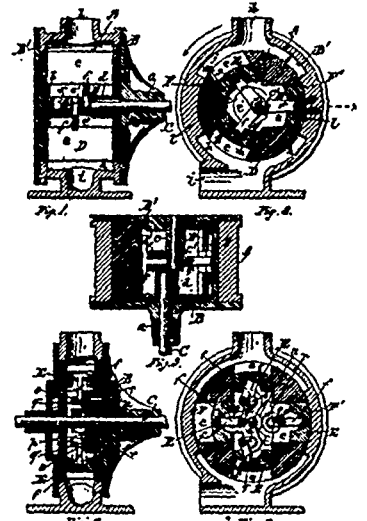
25031 Vanderwerken & Harrison's Nut Lock.



25032 Palne's Egg Beater.



25033. LeGay's Mould for Forming Boot and Shoe Heels.



25034 Cary's Rotary Engine or Pump.

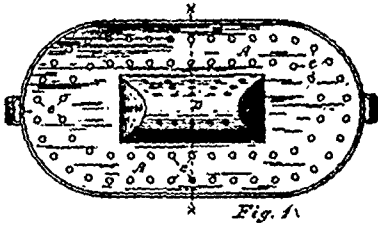


Fig. 1.



Fig. 2.

25035 Haue's Steam Washer and Blecher.

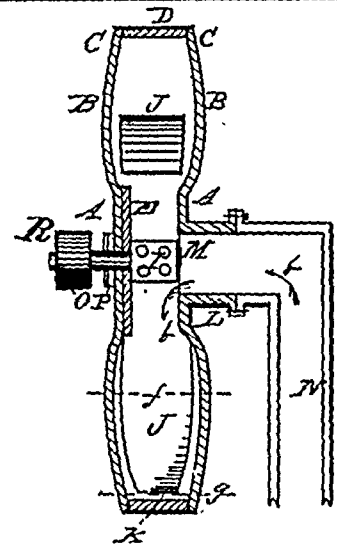


Fig. 1.



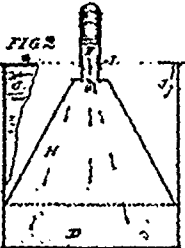
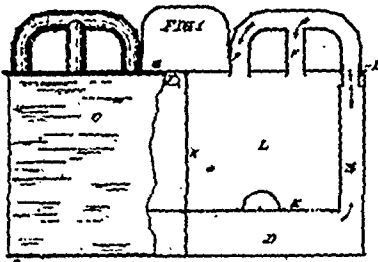
Fig. 2.

25036 Patterson's Pos-Vine Letter for Harvesters.



25037

Falcon's Rotary Pump.



FIGS

25038 Bailey & Moon's Washing and Cooking Apparatus.

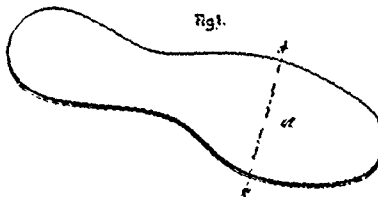


Fig. 1.

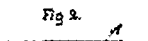


Fig. 2.

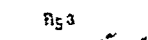
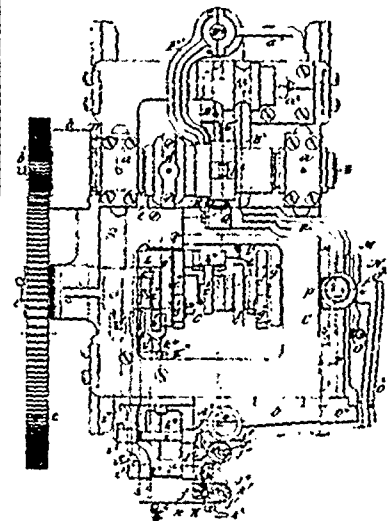


Fig. 3.

25039 King's Insole for Boots and Shoes.

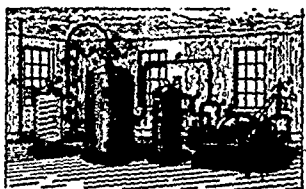


25040 Eliacott's Machine for Forging Horseshoe Nails.

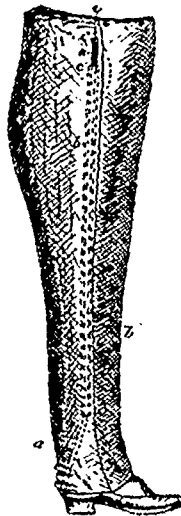
Fig. 1.



Fig. 2.

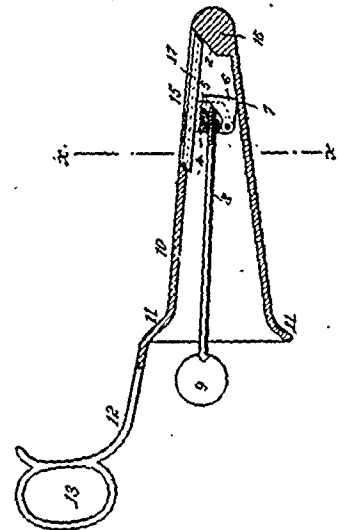


25041 Hackmann's Art of Germinating Barley.

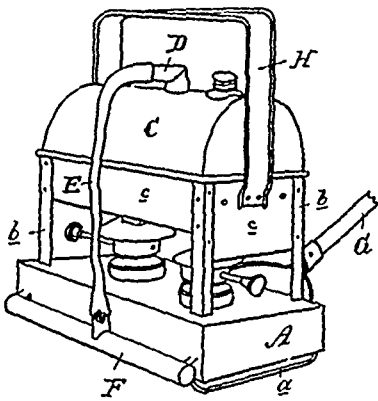


25043

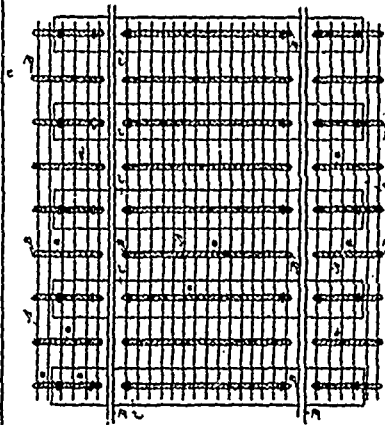
Colloy's Trouser Lint.



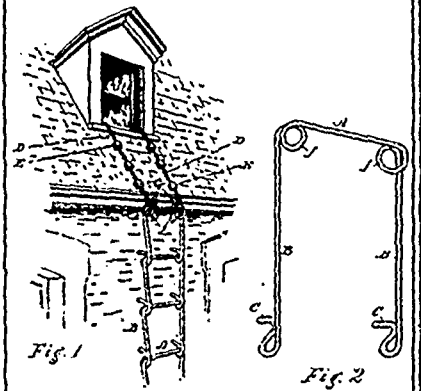
25044 Ryan's Rectal and Vaginal Speculum.



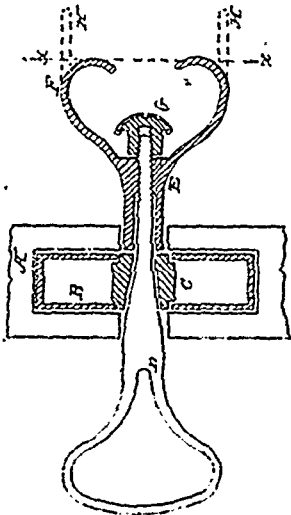
25045 Griffin's Vermin Exterminator.



25046 Hale's Cattle Guard.



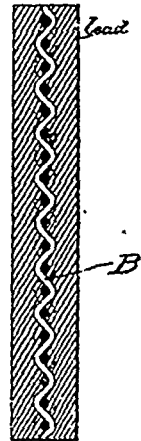
25047 Hanco & Shaver's Fire-Escape Ladder.



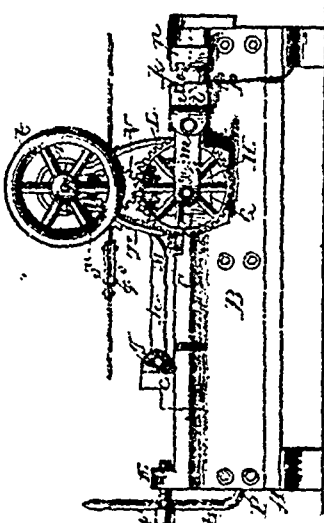
25048 Davis' Knob Attachment for Door Locks.



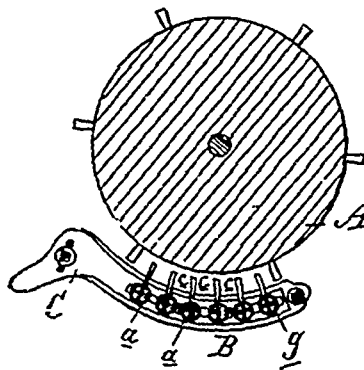
25050 Russell & Cragin's Paper Pulp Screen.



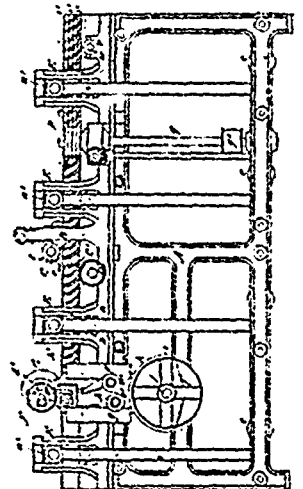
25051 Russell's Paper Pulp Producing Apparatus.



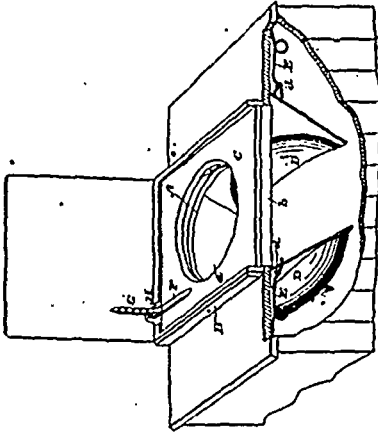
25053 Johnson's Gang Punch and Bending Machine.



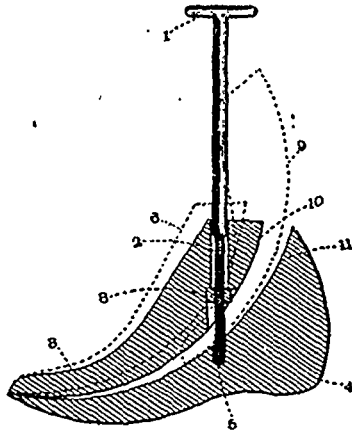
25054 Robert's Concave for Threshing Machines.



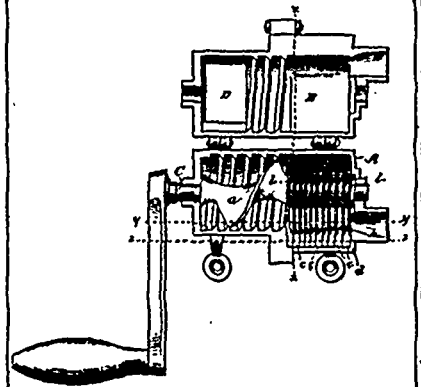
25055 Burris' Machine for Working Lumber.



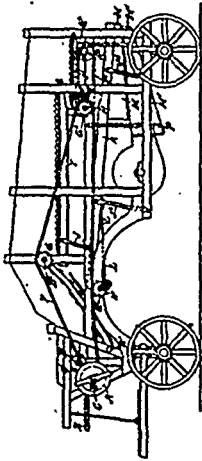
25056 Kelley & Ball's Privy Seat.



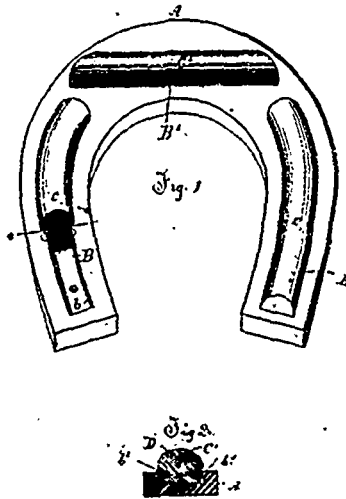
25057 Haentges & Fisher's Boot Stretcher.



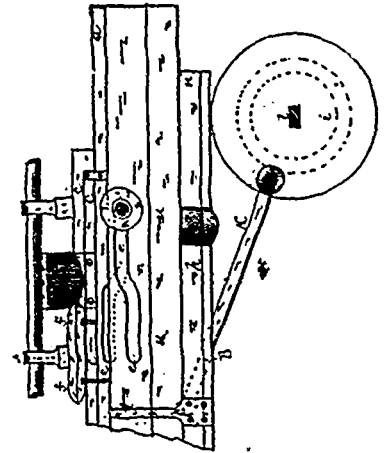
25058 Eddy's Meat Cut'er.



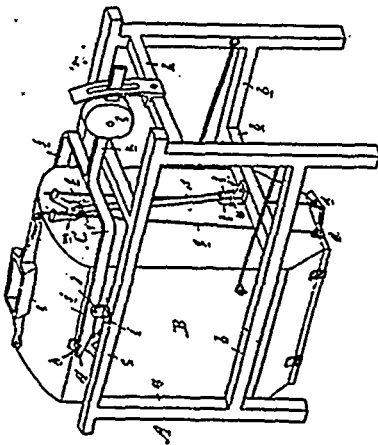
25059 Hill's Thrashing Machine.



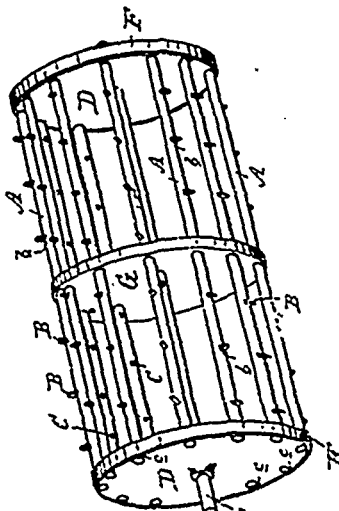
25060 Nicholson's Horseshoe.



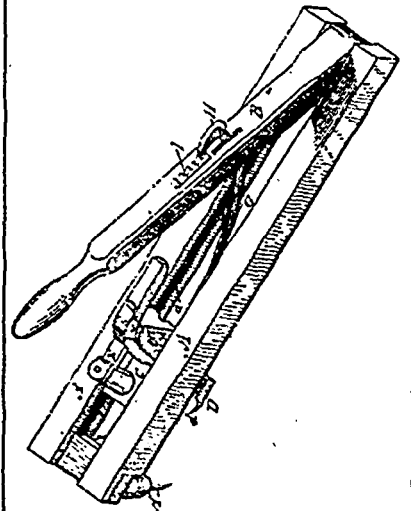
25051 Cooke's Batter, Shuttle, etc., for Looms.



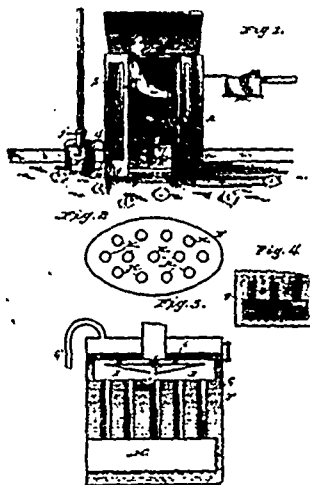
25062 Dutton's Grain Meter



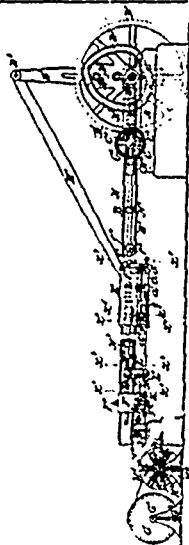
25063 Roberts' Thrashing Cylinder.



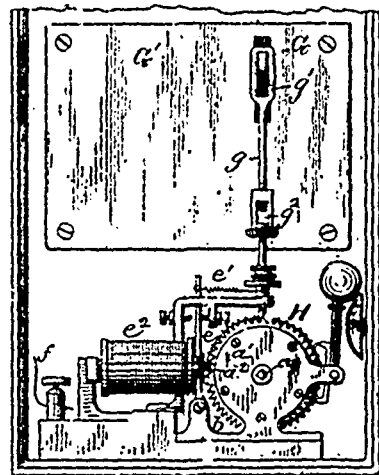
25064 Price's Carpet Stretcher.



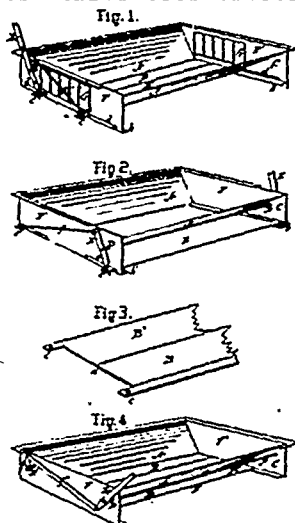
25055 Douglass' Vapour Generator.



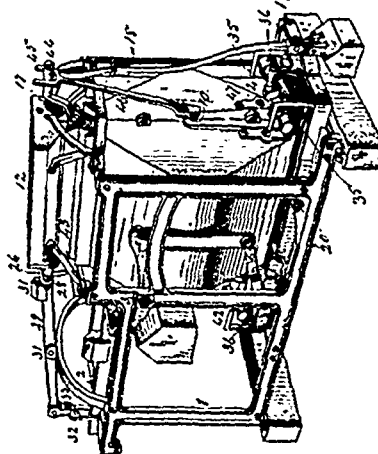
25066 Capel's Machinery for Making Bale Ties, etc.



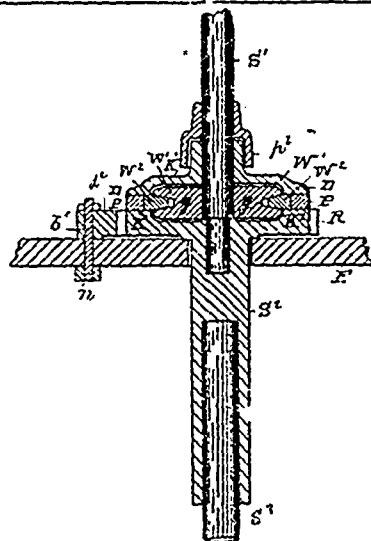
25067 Rogers's Fire Alarm Apparatus.



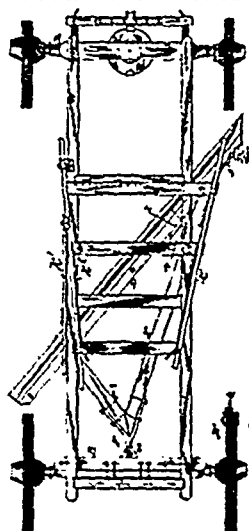
25058 Graham's Locomotive Ash Pan.



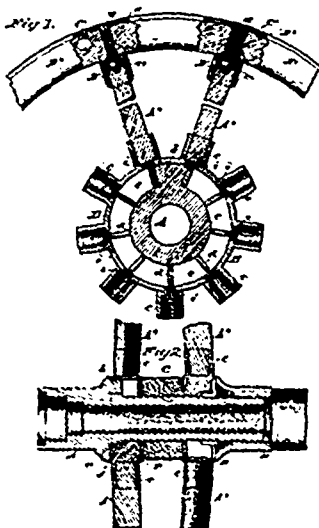
25059 Kuhlman's Automatic Grain Weighing Machine.



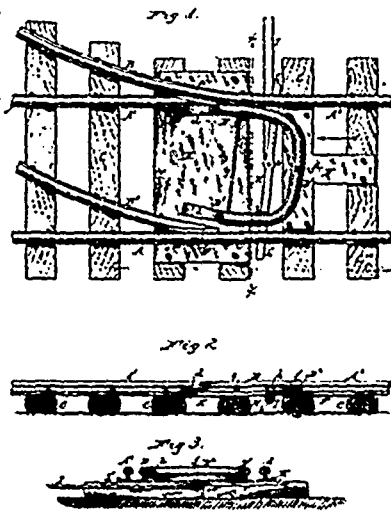
25070 Willson's Clutching Mechanism for Car Brakes.



25071 Lathrop's Road Scraper.



25072 Johnston's Vehicle Wheels.



25073 Batt's Railway Switch.