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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. 26,118. Evaporating Apparatus.
(Appareil Evaporatoire.)

Richard G. Peters, Manister, Mich., U. S., 23th February, 1887; 5 years.

Claim.—1st. The combination of the evaporating vessel A, discharge pipe G and discharge tank F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the evaporating vessel A, the feed pipe J, valve O, float P, heater B and supply tank K, with regulator N, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of evaporating vessel, consisting of an upper dome-shaped section with overflow D, vapor pipe E, two middle sections and bottom cone-shaped section discharge pipe G, discharge tank F, conveyor I for extracting salt from brine, substantially as and for the purpose hereinbefore set forth. 4th. The combination of evaporating vessel, with discharge pipe G, discharge tank F, and conveyor I for extracting the precipitate from any solution, substantially as and for the purpose hereinbefore set forth. 5th. The combination of two evaporating vessels, for double effect, with discharge pipes G and discharge tank F, substantially as and for the purpose hereinbefore set forth. 6th. The combination of three evaporating vessels for triple effect, with discharge pipes G, discharge tank F, substantially as and for the purpose hereinbefore set forth.

No. 26,119. Process of Making Pure Sulphuric Acid and Strong Sulphuric Acid in one Continuous Operation.
(Procédé de Fabrication de l'Acide Sulphurique pur et de l'Acide Sulfurique fort par une Opération Continue.)

William H. Nichols, George H. Nichols and John B. F. Herreshoff, Brooklyn, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—The process herein described of treating sulphuric acid, which has been concentrated to a strength of about 95 per cent. H₂SO₄, or certainly over 93.5 per cent. H₂SO₄, which process consists in evaporating a sufficient quantity of said acid to produce from the residue strong acid of 98 per cent. H₂SO₄, and condensing the vaporized acid, so as to produce a pure acid of 93.5 per cent. H₂SO₄, substantially as hereinbefore described.

No. 26,120. Heating and Ventilating Apparatus.
(Appareil de Chauffage et de Ventilation.)

Richard A. Rew, Charles B. Foote, James W. Hull and Benjamin B. Day, Pomeroy, W.T., U.S., 7th March, 1887; 5 years.

Claim.—1st. A stove comprising a combustion chamber, a smoke chamber, a plurality of pipes connecting and opening at their opposite ends into said chambers, and a casing having an air inlet, substantially as described. 2nd. The combination of the combustion chamber, a smoke chamber located above the same, connections forming communication between such chambers, a casing and a deflector extended transversely of said casing between the said cham-

bers, and having a central opening, substantially as set forth. 3rd. The combination of an outer wall and top of a stove linings forming the combustion chamber and smoke chamber described, a series of pipes connecting the two chambers and opening at their opposite ends into the same, an intermediate lining between the said lining and wall, an outlet through the lower portion of the wall, substantially as shown and described. 4th. The combination of the outer cylinder provided at its lower end with discharge openings, the inner cylinder located within the outer one and separated therefrom, forming an intermediate air passage, and having an opening at its lower end whereby to admit fresh air, the combustion chamber located within the inner cylinder, the top of the stove having openings through which the heated air may be discharged, and a damper whereby to close said openings and direct the air downward and out of the discharge openings at the base of the outer cylinder, substantially as set forth. 5th. In a stove, the combination of the outer and inner cylinders having an intermediate air space, the combustion and smoke chambers located within the inner cylinder pipes connecting and opening at their ends into said chambers, and a deflector plate extended transversely between the walls of the inner cylinder and located between the two said chambers and having a central opening, substantially as set forth. 6th. The combination of the combustion chamber, a casing enclosing the said chamber, and a pipe extended through said casing into and opening within the combustion chamber, whereby air may be admitted thereto, substantially as set forth. 7th. The combination, with the casing and the combustion chamber enclosed within the same, of a pipe extended through the casing into and opening at its inner end within the combustion chamber, and having its lower end extended downward and opening without the casing, such pipe being formed with a trap, substantially as set forth. 8th. In a stove, the combination, with the casing and the combustion chamber, of a water tank, and a pipe extended therefrom, adjacent the combustion chamber and having a discharge, substantially as set forth. 9th. The combination, with the casing and the combustion chamber, of the water tank and a pipe extended therefrom adjacent the combustion chamber, and formed with the upwardly projected wing, the return wing and the discharge portion, substantially as set forth. 10th. The combination, with the combustion chamber, the casing and the water tank, having a pipe extended adjacent the combustion chamber, of a shield adjustably supported, whereby it may be set between the combustion chamber and the said pipe, substantially as set forth.

No. 26,121. Combined Hopple and Tail Holder.
(Chevêtre et Attache-Queue Combinés.)

Russell T. Stokes and William H. Mellen, Garnett, Ks., U. S., 7th March, 1887; 5 years.

Claim.—1st. A combined hopple and tail-holder, formed of an inflexible bar, perforated and slotted keeper E, perforated and slotted cap-pieces H, and a cord, rope or strap, substantially as and for the purpose described. 2nd. The combination, in a combined hopple and tail-holder, of the bar A, the cap pieces H having the perforations b and hooks or slots a, with the keeper B having the slot d and perforation c, and a suitable cord, rope or strap, substantially as described. 3rd. A combined hopple and tail holder, consisting of the inflexible bar A, the malleable iron recessed cap-pieces H, having the hooks or slots a, and perforations b, the keeper B rigidly secured to said bar, having the inclined upper surface h, diagonal slot d, guide point e and perforation c, and a suitable cord, rope or strap C, all as and for the purpose set forth. 4th. In a combined hopple and tail holder, the combination of an inflexible bar, having slotted and perforated cap pieces, a keeper having slots and perforations, and a strap or cord whereby the tail of an animal may be secured against its leg, and the bending of the latter prevented, as set forth.

No. 20,122. Bolt for Carriage Shafts.
(Cheville de Limonière de Voiture.)

Joseph T. Martineau, Bergeville, Que., 7th March, 1887; 5 years.

Réclame.—Je réclame comme mon invention, la combinaison de la cheville taraudée A, avec les écrous B et C, et la pièce conique F, tel que ci-dessus décrit et pour les fins indiquées.

No. 26,123. Steam and Hot Water Heating Boiler. (*Chaudiere de Calorifere à Vapeur et Eau.*)

James McAndrew and George H. Noble, Peterboro, Ont., 7th March, 1887; 5 years.

Claim.—1st. The combination of the square boiler B and the circular fire place F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the pipes D and E, from top of boiler A, substantially as and for the purpose hereinbefore set forth.

No. 26,124. Churn. (*Baratte.*)

Garret Seger, Niagara Falls, Ont., 7th March, 1887; 5 years.

Claim.—1st. The combination of the driving arms b, b, the belts e, e, and the pulley c, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with driving arms b, b, the belts e, e, and the pulley c, of the dash g and fan h, substantially as and for the purpose hereinbefore set forth.

No. 26,124. Bed Bottom. (*Sommier de Lit.*)

Charles L. Ames, Ridgeland, Ill., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a bed bottom, the combination, with the frame A, B, woven wire fabric E and springs D, of supports C composed of sections C₁ connected by yoke C₂ and adjusting bolts C₃, substantially as shown and described. 2nd. In a bed bottom, the combination, with the frame A, B, A, B, woven wire fabric E and springs D, of downwardly-directed supports C, composed of sections C₁ connected in pairs by yokes C₂ and adjusting bolts C₃, substantially as shown and described. 3rd. In a bed bottom, the combination, with the frame A, B, A, B, woven wire fabric E and springs D, of supports C composed of sections C₁, applied by their outer ends to the upper side of the end rails, and by their inner ends to the adjustable yokes C₂, substantially as shown and described.

No. 26,126. Casing for Windows, Blinds, etc. (*Châssis de Croisée, Persienne, etc.*)

Magloire Thibeault, Ottawa, Ont., 7th March, 1887; 5 years.

Claim.—1st. The chamber D, as an addition to a window frame, and provided with the parting strips b₁, and the window frame style B having openings for the passages of the sashes and blinds into and out of said chamber, substantially as shown and described. 2nd. The combination of a window frame, having the sill A, styles B, B₁, and cap C, with the blinds E and sashes F and G arranged to slide through the slide B into the chamber D, the parting strips b₁ and stops c₁, substantially as herein described, and for the purposes set forth.

No. 26,127. Bob Sled and Sleigh.

(*Traineau Accouplés.*)

Willett Fisher, Homer, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. A sled or sleigh having two supporting irons extending from one runner to the other, and attached to the cross-beam on its front and rear sides, the irons having a part of their depending portions bent forward and backward to form knees and secured to the runners, as set forth. 2nd. The combination, with a sled or sleigh having supporting irons extending across the runners and attached to the cross beam on its front and rear sides, a part of the depending portion of the irons being bent forward and backward to form knees, of a curved filling block secured between the depending irons and fastened to the cross-beam, substantially as shown and for the purpose set forth. 3rd. The combination, with a sled or sleigh having supporting irons semi-circular in form, extending from one runner to the other, and secured to the front and rear sides of the cross-beam, and having depending portions bent forward and backward to form bracing knees, of a curved filling block secured to the beam and between the supporting irons, having a brace in its lower portion extending to the outer end of the cross beam, as set forth.

No. 26,128. Combined Hot Air Register, Border and Box. (*Régistre d'Air Chaud, Bordure et Boîte Combinés.*)

Horace K. Talmage, Buffalo, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—A register, consisting of the top and border plate (either separate or combined) having the central open work portion and slideway, and the box portion 1 having a rim 2, in combination with a pivoted damper 3, a sliding piece 9 provided with a handle 12, and adapted to fit and slide back and forth in the slide-way 8, and a connecting rod pivoted to the damper and to the sliding piece, substantially as and for the purposes described.

No. 26,129. Machine for Making Dowel Pins.

(*Machine à Faire les Goujons.*)

Clarence F. Stewart, Norwalk, Ohio, U.S., 7th March, 1887; 5 years.

Claim.—1st. In a machine for making dowel-pins, the combination, with a finishing die, a splitting knife set substantially parallel with the axial line of the die, a suitable bed and reciprocating plunger, of a guide-block, the same being notched to engage two sides of the blank and springs respectively, for pressing the guide-block toward the knife and toward the bed-plate, substantially as set forth. 2nd. In a machine for making dowel pins, the combination, with a bed-plate, a plunger mounted thereon, a splitting knife and notched guide block yieldingly held in position of a supporting plate, a finishing die secured thereto and the flange integral with or rigidly secured to the bed-plate, the said plate and flange having respectively elongated holes at right angles to each other for the passage of the securing bolts, substantially as set forth. 3rd. In a machine for making dowel pins, the combination, with a bed plate, having recesses a and a₁ made on opposite sides of the plate, of a splitting

knife and arm D secured in the respective recesses, said knife being set substantially parallel with the axial line of the finishing-die, of a guide-block notched to engage the blank on two sides, said block being yieldingly held in position by springs that respectively press the guide-block downward and forward, the springs being adjustably supported from the said arm D, substantially as set forth. 4th. The combination, with a bed-plate, a splitting-knife, a finishing die and a reciprocating plunger, of the block E yieldingly secured to the bed-plate, and springs for pressing the block downward and laterally. 5th. In a machine for making dowel pins, the combination, with a finishing die, a splitting-knife set substantially parallel with the axial line of the die, and a device for guiding the blank, of springs arranged to press the guiding device downward and forward, substantially as set forth.

No. 26,130. Bustle. (*Tournure.*)

Thomas P. Taylor, Bridgeport, Conn., U.S., 7th March, 1887; 5 years.

Claim.—1st. A bustle, consisting of side pieces, a spring rib or ribs connected thereto, a supplemental rib or ribs, and a connection between the spring rib or ribs and the supplemental ribs, so that, when pressure is released, the spring rib or ribs will act to draw the supplemental ribs to their proper position. 2nd. A frame-work for folding bustles, consisting of side pieces having eyes at the tops, and a curved spring rib at the bottom connected to said side pieces by coils. 3rd. A bustle, consisting of side pieces, a spring rib or ribs connected thereto, and a distending portion formed of curved ribs, the ends of said ribs being connected to the side pieces, and strips connecting the distending portion with the spring rib or ribs. 4th. A bustle, consisting of two side pieces, a cross-piece connecting them, diagonal spring ribs, one end of each rib being attached to one side piece at the bottom and to the opposite side piece at the top, said ribs crossing each other midway their length, an independent rib curving upward and under the diagonal ribs from one side piece to the other, and a strip and loop connecting the supplemental rib with the spring ribs, substantially as described. 5th. In a bustle, the combination, with side pieces 1, spring ribs 2 and supplemental ribs 7, of a connection, for example a strip or cord, whereby the ribs 7 are connected to ribs 2 and brought to place after the bustle has been folded.

No. 26,131. Construction and Operation of Farm Gates. (*Fabrication et Fonctionnement des Barrières.*)

Alexander Mennie, St. Mary, Ont., 7th March, 1887; 5 years.

Claim.—1st. The drum J, substantially as and for the purpose hereinbefore set forth. 2nd. The chains K, K and the manner of arranging the same on the drum J, and the rollers L, L, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the rollers L, L, with the crank rods M, M, substantially as and for the purpose hereinbefore set forth.

No. 26,132. Plough and Excavator.

(*Charrue et Fouilleur.*)

James Plenderleith, Caddon Linns, Scotland, 7th March, 1887; 5 years.

Claim.—1st. The combination of the blades G, G, with the cylinder F, the form of the blades and the mode of fixing them to the cylinder or drum, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the shield and deflectors, with the forward parts of the shield at the ends of the cylinder, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the waggon A, with the framing B, substantially as and for the purpose hereinbefore set forth.

No. 26,133. Saw Swage. (*Presse à Scie.*)

Jeremiah Quinlan, Saint John, N.B., 7th March, 1877; 5 years.

Claim.—1st. The corrugated die D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the flat die G, with the corrugated die D, substantially as and for the purpose hereinbefore set forth.

No. 26,134. Valve Governor.

(*Gouverneur de Soupape.*)

John S. Hall, New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a valve governor, the combination of an adjustable valve stem having a locking key journaled loosely thereon, and engaging with the stem at a predetermined point with a secondary locking screw for locking the key in position, as and for the purposes described. 2nd. In a valve governor, the adjustable valve stem provided with a locking recess and screw-threaded as described, in combination with an adjustable elastic locking key, and a set nut for locking said locking key in any desired position, substantially as and for the purposes specified. 3rd. In a valve governor, the adjustable stem provided with a thumb-nut or hand-wheel, and a secondary rigid disc secured to the valve stem beneath the thumb-nut or hand-wheel, which rigid disc is considerably smaller than the thumb-nut or hand-wheel, and having a recess therein, in combination with the locking disc for holding the locking key in position, and the locking key, all constructed and combined to operate substantially as described, whereby the locking key is entirely protected by the thumb-nut or hand-wheel, to prevent accidental breaking or displacement of the same, substantially as and for the purposes specified.

No. 26,135. Knockdown Folding Bedstead.

(*Lit-brié.*)

John G. Peace, Salem, Mo., U.S., 7th March, 1887; 15 years.

Claim.—1st. The combination, with the posts B, each having near its lower end a key-hole slot, and the rigid tie-bar C removably se-

cured at its respective ends to the upper ends of said posts, whereby they are held at the proper distance asunder, of the removable frame J, J₁ having the pins K with enlarged heads engaging said key-hole slots, whereby the lower ends of the posts B are held at the proper distance asunder, substantially as set forth. 2nd. In the herein-described article of furniture, the combination, with the open frame consisting of the vertical posts B, and the rigid tie-bar C connecting said posts and adapted to be lowered on either side thereof, substantially as set forth. 3rd. The combination, with the vertical posts, the rigid tie-bar, and the hooks and lugs by which they are removably connected, of the removable frame pivoted to said posts and legs pivoted to said removable frame and adapted to project from either side thereof, as set forth. 4th. The combination, with the frame open at both sides, substantially as described, of the frame J, J₁ pivoted at one side in said open frame, the sheet N stretched over one side of the frame J, J₁, and the pivoted legs L adapted to project from either side of said pivoted frame, substantially as and for the purpose set forth. 5th. The combination, with the knockdown frame, having the bearings B₁ and B₂ at different elevations, of the removable frame having pivoted legs of different lengths, substantially as set forth. 6th. The combination, with an open frame, substantially as described, of a frame pivoted therein, springs for lifting said pivoted frame, and sockets for said springs duplicated on opposite sides of the centre of motion of the pivoted frame, substantially as set forth.

No. 26,136. Lifting Jack. (Cric.)

The Railway Speed Recorder Company, (Assignee of John W. Hawkins), Kent, Ohio, U.S., 7th March, 1887; 5 years.

Claim.—1st. In a lifting-jack, the combination, with friction-pawls arranged in pairs to embrace the lifting-bar, each individual pawl having a laterally-projecting supporting-trunnion, and below the trunnion a seat for the link, of a link arranged astride the lifting-bar, for connecting laterally a pair of pawls below the trunnions, said link forming a fulcrum for the engaging pawls, substantially as set forth. 2nd. In a lifting-jack, the combination, with a lifting-bar, friction-retaining pawls, having supporting-trunnions engaging suitable seats on the casing, of friction lifting-pawls having trunnions engaging the links that are connected with the operating-lever, each pair of pawls having fulcrum-links engaging the respective pawls laterally to hold the pawls against the lifting-bar in operating the jack, substantially as set forth. 3rd. In a lifting-jack, the combination, with a friction retaining-pawl, and friction lifting-pawls arranged respectively to embrace the lifting-bar, lateral fulcrum-links for connecting respectively each pair of pawls, arranged substantially as indicated, of a forked lever fulcrumed on the casing links connecting the lever with the lifting-pawls, substantially as set forth. 4th. In a lifting-jack, the combination, with a lifting-bar, friction lifting-pawls, and friction retaining-pawls arranged substantially as described, of a ring mounted loosely on the lifting-bar, a lever for moving said ring upward to engage and separate the retaining-pawls, the parts being arranged substantially as described. 5th. In a lifting-jack, the combination, with friction-pawls, respectively lifting and retaining, arranged in pairs to embrace the lifting-bar, lateral links, and a lever for operating the retaining-pawl, arranged substantially as indicated, of shoulders of the casing arranged to engage and separate the lifting-pawls at the end of the downstroke of the latter, substantially as described.

No. 26,137. Roller Bearing for Axles or Shafts. (Cousinet anti-frottant pour essieux et arbres de couche.)

The Meneely Hardware Company, (assignee of John Gibbons), West Troy, N.Y., U.S., 7th March, 1887; 15 years.

Claim.—1st. In an axle or shaft bearing, the combination, with the rollers R, made with the recesses r in revolution therein, of the balls B placed between said rollers within the grooved recesses relatively to the axle box and axle or shaft, substantially as and for the purposes set forth. 2nd. In an axle or shaft bearing, the combination of the rollers R made with the recesses r in revolution therein, of the balls B arranged within the grooved recesses, as shown, and a collar on the axle or shaft, and a threaded cap on the box, substantially as and for the purposes set forth.

No. 26,138. Shoe. (Soulier.)

John H. Cosart, Lyons, and John Hunter, Sterling Valley, N. Y., U.S., 7th March 1887; 5 years.

Claim.—1st. The herein-described pattern for low-cut shoes, consisting of a sole portion provided with expanding wings, as shown, and a vamp portion provided with corresponding contracted wings, adapted to overlap and to connect with the sole wing portion, substantially as shown. 2nd. A shoe consisting of a sole integrally provided with expanding quarters, in combination with a vamp having integral correspondingly contracted wings united to the combined sole and quarter, bound and heeled substantially as shown and described.

No. 26,139. Rail for Dash Boards.

(Liasse de Garde-crotte.)

Fernandize M. Simmonds and George K. Schofield, Indianapolis, Ind., (assignees of Robert W. Logan, Cincinnati, Ohio), U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination, with a dash-board consisting of the ordinary metallic frame and leather covering, of a detachable rail provided with supports having clamps, whereby it is secured to the finished edges of said dash-board and held free therefrom, substantially as shown and described. 2nd. The combination, with the dash-board A, of the rail B provided with the supports B₁, said supports B₁ engaging with the top edge of said dash-board, and the supports B₂ engaging with the ends of said dash-board at one end, and being secured to the ends of said rail at the other, substantially as set forth.

3rd. The combination of the dash-board A, rail B, supports B₁ and supports B₂, said supports B₂ having clamps formed on one end thereof, one jaw of which is provided with a hinge, substantially as set forth. 4th. The combination, with a dash-board, of a detachable rail constructed of two parts which are adjustable upon each other, and provided with clamps whereby it can be secured to, or removed from the finished dash-board, substantially as set forth.

No. 26,140. Stamp-Canceller.

(Tymbre à Maculer.)

Edward A. Luzenberg and Edward Sachs, San Antonio, Texas, U.S., 7th March, 1887; 5 years.

Claim.—The hand stamp-canceller, comprising the handle having affixed to its lower end, the plate constructed with an outer and an inner circular chamber or channel, and a series of radial narrow chambers or channels connecting the said circular chambers or chambers, and with series or groups of teeth arranged intermediately of said channels of chambers, said channels or chambers being provided with elastic ink markers with their outer surfaces arranged almost flush with the points of the teeth, substantially as and for the purposes set forth.

No. 26,141. Horse Shoe. (Fer à Cheval.)

Thomas Phillips, Eli Bouchard and Treflé Charbonneau, Worcester, Mass., U.S., 7th March, 1887; 5 years.

Claim.—1st. The removable calk-shoe described, having its calks fitting in recesses and provided with one or more studs fitting holes in the shoe, and an opening fitting over the thimble or nut on the shoe, with a bolt or screw holding them firmly in place, all constructed and operating substantially as and for the purposes as above set forth. 2nd. The two-pronged removable heel calks, in combination with the shoe having recesses wherein the calks are secured, substantially as above described.

No. 26,142. Chain Conveyor.

(Chaîne Monte-charge.)

Michael Garland, Bay City, Mich., U.S., 7th March, 1887; 5 years.

Claim.—1st. In combination with the links of a conveyor-chain, one or more supplemental flights which extend up beyond the elevation of the conveyor devices of the links, substantially as and for the purposes set forth. 2nd. In combination with the links of a conveyor-chain, a series of supplemental flights of greater carrying capacity than the cross-bars of the links, and a series of flight-like projections on the outer portions of the sides of the links, substantially as hereinbefore set forth. 3rd. In combination with the links of a conveyor-chain, a series of supplemental flights that project above the main flights, and which also extend laterally to the full width of the chain, as and for the purpose set forth. 4th. As a specific form of supplemental flight, the upward extension of some of the cross-bars or main flights of the links, as hereinbefore described. 5th. In a conveyor-chain, side bars having the lower portions of their ends made square, as at a, in the manner and for the purpose specified. 6th. A chain for conveyors having its side bar-links formed with an increased quantity of stock at the points a₃, substantially as and for the purpose set forth.

No. 26,143. Carrier and Drive Chain.

(Chaîne de Communication du Mouvement.)

Michael Garland, Bay City, Mich., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a chain composed of alternately arranged single-bar links and double-bar links, the combination, with double-bar links B provided with hub-like devices 2, of single-bar links A, formed or provided with pintle-like devices projecting laterally from both sides of the link and near either end thereof, substantially as set forth. 2nd. In a chain of the type shown and described, a single-bar link having pintle-like laterally-projecting devices 5, and having its body-portion formed, as specified, to possess the requisite tensile strength, and at the same time present only comparatively thin metallic portions easy of malleability, as set forth. 3rd. In a chain composed of single-bar and double-bar links, bars B for the double-bar link, each composed of a rib-like portion 3, a transverse plate-like part 1, and perforated hub-like portions 2, all substantially as and for the purpose hereinbefore set forth.

No. 26,144. Washing Machine.

(Machine à Laver.)

Edward L. Wallace, St. Catharines, Ont., 7th March, 1887; 5 years.

Claim.—1st. The combination of the incline rollers N, N, partly in the water and partly out of the water, operated upon by the flat corrugated holding board L, and the connection K, I, G to the springs E, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the body B B A, of a cover R and a pair of rollers or wheels D under one pair of legs C, substantially as and for the purpose set forth.

No. 26,145. Vehicle Spring. (Ressort de Voiture.)

Richard Mulholland, Dunkirk, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. A vehicle spring consisting of a continuous rod or bar forming the members a₂, a₄, one of which is spirally coiled or looped around the other, and having the vibrating arm a₁, and the rigid arm a₅, substantially as shown and described. 2nd. A combined semi-elliptic, and torsion spring at the front of the vehicle, consisting of the springs b₅ and c, having their ends secured to the body of the vehicle, and having their arms c₄ pivoted by pivots c₅ to the semi-elliptic spring c₁ secured to the front axle, in combination with a reach for securing the axles in position and the combined spiral and torsion springs a₂, a₄, the torsion springs having their arms a₁ pivoted to the rear axles and the spiral springs having their fixed

ends secured to the body, substantially as described, 3rd. In a vehicle, the combination of the body, the reach and axles, with the within described springs having their outer arms α , α_1 arranged lengthwise of the body in the same direction, the arms α_1 being pivotally connected directly to the axle b , and the arms α being connected pivotally to the spring α_1 , or to a bolster or support for the purposes described.

No. 26,146. Dynamo-Electric Machine.

(*Machine dynamo-électrique.*)

Royal E. Ball, New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a dynamo-electric machine, a concentrically movable field-magnet constructed and adapted to revolve under the abnormal attraction of the armature, in combination with current-collectors whose positions relatively to said field-magnets are altered by such revolution. 2nd. In a dynamo-electric machine, the combination, with a revolving field-magnet, of concentrically-movable current-collectors coupled to said field-magnets, substantially as described, so as to be shifted thereby and in the direction of movement of the pole-pieces or poles. 3rd. In a dynamo-electric machine the combination, with a concentrically-movable field-magnet, and concentrically-movable current collectors, of intermediate differential gearing or coupling mechanism, substantially as and for the purpose described.

No. 26,147. Dynamo Electric Machine.

(*Machine dynamo électrique.*)

Royal E. Ball, New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a dynamo-electric machine, the combination, with the armature and shaft, of shoes having grooved faces, and screws seated in said shoes, and screwing into a sleeve upon said shaft, fibrous packing being interposed between said grooved shoes and the interior of the armature, substantially as described. 2nd. In a dynamo-electric machine, the combination, with a ring armature, grooved shoes bearing against the same upon the inside, and a fibrous shellac-soaked packing interposed between said armature and shoes, of blocks attached to said shoes, and screw-threaded arms screwing into a sleeve upon said shaft, and seated in said blocks, substantially as described. 3rd. In a dynamo-electric machine, the combination, with the armature and its shaft, and the commutator of a sleeve fitting said shaft, and projecting out from within the armature through the hub of the commutator, substantially as described. 4th. In a dynamo-electric machine, the combination, with the commutator and the armature and its shaft, of a sleeve fitted over said shaft and secured thereupon, said sleeve serving to receive the ends of radial arms upon which said armature is supported, and having a reduced end which passes through the hub of the commutator, substantially as described. 5th. In a dynamo-electric machine, the combination, with the armature shaft, and a sleeve secured thereupon to which the armature is attached by means of radial arms, of a commutator whose hub fits over said sleeve, and is secured thereupon by means of a screw-key which enters a hole formed at the junction of said hub and sleeve, substantially as described. 6th. In a dynamo-electric machine, the combination, with a sleeve fitted upon the armature shaft and carrying the armature, of a hub fitted upon said sleeve and provided with a flange at or near one end, and a nut at the other end, cylinders of insulating material having flanges and commutator-section which are set between said flanges and held in position by the nut and flange upon the hub, substantially as described. 7th. In a dynamo-electric machine, the combination, with the armature-coils, of the commutator-sections, whose projecting arms are bent in at intervals or alternately to prevent contact of the same, and permit the employment of a larger number of sections, substantially as described. 8th. The combination, with the commutator sections E, E, and their arms H, H', of the tape ι is woven upon and between said arms, substantially as described.

No. 26,148. Regulator for Dynamo-Electric Machine.

(*Régulateur de machine dynamo-électrique.*)

Royal E. Ball, New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination, with a dynamo-electric machine having its field-coils arranged in multiple arc, of a variable resistance included in each of its branches, and means for operating said variable resistance, substantially as described. 2nd. The combination, with a dynamo-electric machine having its field-coils arranged in multiple arc, and a variable resistance included in each of the branches of said multiple circuit, of a supplemental coil arranged as a shunt across the field-circuit, and surrounding a portion of the field-magnets, substantially as and for the purpose described.

No. 26,149. Chain Conveyor.

(*Chaîne Monte-charge.*)

Michael Garland, Bay City, Mich., U.S., 7th March, 1887; 5 years.

Claim.—1st. A conveyor-chain composed of links, each having a cross-bar and two side-bars, and having the pintle-like devices formed or provided with lugs B_1 , and the convergent ends of the side-bars formed with cut-outs or slots in their eyes, for the purpose of effecting a rigid union or connection between said portions of said side-bars, and the cross-bar of the three-part link, all substantially as hereinbefore described. 2nd. A conveyor-chain composed of links, each of which comprises one cross-bar and two side-bars, the said two side-bars being arranged divergently relatively to the cross-bar, and formed with the end portions in planes parallel to each other and to the central line of the chain, and both the cross-bar and the two side-bars being rectangular or plate-like in cross section, for the purpose of constituting the carrier-receptacles, all substantially as hereinbefore set forth. 3rd. A conveyor-chain composed of obliquely-arranged side-bars, and parallel transverse or cross-bars, the said side-bars being formed or provided with one or more outwardly-projecting scrapers or clearing devices α , substantially as and for

the purposes set forth. 4th. In combination with the obliquely-arranged side-bars A, A, a cross-bar or flight B formed or provided with a lug B_1 near the end of each of its pintle-like portions, to engage with a correspondingly-shaped slot or cut-out in the eye of each of the side-bars, of another link for the purpose of effecting the flexible connection between the parts of two links, and permitting the uncoupling and recoupling of such parts, all substantially as hereinbefore set forth. 5th. In combination with the obliquely-arranged side-bars A, A, of two adjacent links, a cross-bar or flight B having at different localities on each of its pintle-like portions, the lugs B_1 and B_2 for the purposes respectively of retaining in place, the flexibly-connected ends of the side-bars of one link, and holding rigidly in place the ends of the side-bars of another link, all substantially as hereinbefore described. 6th. In combination with the side-bars, of a chain composed of a series of links, substantially such as described, the two series of projections or scrapers α_2 and α_3 , arranged and operated in substantially in the manner and for the purpose hereinbefore set forth.

No. 26,150. Stable Floor.

(*Pavé d'écurie.*)

Marshall St. German, Fairfield, Vt., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a stable-floor, the slide B so arranged as to be moved back and forth beneath the floor, by means of a pivoted lever loosely connected with it, and when closed to allow an opening for the escape of liquids, substantially as and for the purpose set forth. 2nd. In a stall, the combination, with the floor joists having recesses, and the floor having an opening therein, as shown, of a slide B inside of the recesses below the opening, the rods b connected to the slide, the bracket D and lever C pivoted to said bracket, and the rods b by means of which the slide is moved back and forth under the opening, substantially as described and for the purpose set forth.

No. 26,151. Stave for Pails, Barrels, etc., and method of fastening the same.

(*Douves de Seau, baril, etc., et manière de les assembler.*)

Israel L. G. Rice, Brookline, Mass., U.S., 7th March, 1887; 5 years.

Claim.—1st. A pail, barrel, tub, or other article made of staves having circumferential grooves, shoulders, projections, or other similar supports for the hoops, combined with corrugated elastic hoops, substantially as set forth. 2nd. The combination of a pail, barrel, tub, or other article made of staves, having vertical grooves and horizontal grooves with an elastic hoop, substantially as set forth. 3rd. The elastic hoop C, with an inner flange C_2 to fit the groove in the staves, substantially as and for the purpose set forth.

No. 26,152. Car Coupling.

(*Attelage de Chars.*)

John P. Ketteringham, James Farrell, Patrick W. Mulvihill and Samuel J. Perreault, Natchez, Miss., U. S., 7th March, 1887; 5 years.

Claim.—1st. A draw-head, constructed with a link-opening b_1 having upper and lower recesses b_2 , and an interior chamber C having side recesses c , and provided with pivoted coupling bars D having integral coupling hooks d , the springs E, cam F and an angular lever G adapted to operate said pivoted coupling bars, substantially as shown and described and for the purpose herein set forth. 2nd. The combination, with a draw-head, constructed with a link-opening b_1 having recesses b_2 , and interior chamber C provided with side recesses c and coupling-bars D pivoted in said chamber, the springs E, cam F and angular lever G, together with means for operating said coupling-bars, of the link M provided with arrow-heads m having pin-holes m_1 therein, and central projections m_2 , substantially as shown and described and for the purposes herein set forth. 3rd. The link M, constructed with a square body having central projections m_1 upon two sides thereof in the same plane, together with arrow-headed ends m having pin-holes m_2 therein, substantially as shown and described and for the purposes herein set forth.

No. 26,153. Cultivator.

(*Scarificateur.*)

Lemuel Mellett, Milford, and August P. Lighthill, Boston, Mass., U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination, with the frame of a cultivator of the type shown, of the lever e pivoted to the central beam, the levers or links f, f pivoted to the side beams and jointed to the ends of the lever e , the operating rod attached to the lever e and provided with a handle and locking devices, whereby said rod is locked in any position to which it may be turned, as set forth. 2nd. A cultivator having a shoe m , formed to slide on the surface of the ground in front of the cultivator teeth, as set forth.

No. 26,154. Stocking Protector.

(*Couvre-bas.*)

Alexander Shaw, Grantham, Eng., 7th March, 1887; 5 years.

Claim.—1st. As a new and improved article of manufacture, a stocking protector A made of soft material, without a separate sole, and adapted to be worn over the stocking and inside the boot or shoe, substantially as described. 2nd. The stocking protector A, having a seamless bottom, substantially as described. 3rd. The blank B for the stocking protector, formed with side pieces σ, ρ and h, h , the body of the blank being cut to form the curved edges m, o , the side pieces ρ, h having respectively the curved edges d, c , substantially as described. 4th. The protector A, having a seamless bottom and formed with the front seam b , transverse toe seam c and transverse heel seam e , substantially as described.

No. 26,155. Wrench.

(*Clié à Ecrou.*)

Robert W. Philips, Guelph, Ont., 7th March, 1887; 5 years.

Claim.—1st. A metal bar A, attached to or forming part of a handle, in combination with the jaw C, connected to the bar A by the pivoted

links B, substantially as and for the purpose specified. 2nd. A metal bar A, attached to or forming part of a handle, and having teeth *d* formed on it, in combination with the jaw C connected to the bar A by the links B, and having teeth *e* formed on it, substantially as and for the purpose specified. 3rd. A metal bar A, attached to or forming part of a handle, and having teeth *d* formed on it, and an adjustable sleeve *d* fitted into it, in combination with the jaw C pivotally connected by the links B to the adjustable sleeve D on the bar A, substantially as and for the purpose specified.

No. 26,156. Dynamo-Electric Machine.

(*Machine Dynamo-Electrique.*)

Royal E. Ball, New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a dynamo-electric machine, the combination, with the cores of the field magnets, of forged iron and frame having hard metal bearings attached thereto for the reception of the armature shaft, substantially as described. 2nd. In a dynamo-electric machine, the combination, with the end frames and cylindrical field magnet cores, of pole pieces grooved to receive the said cores, and secured thereto by means of screws, substantially as described. 3rd. In a dynamo-electric machine, the ends A, A, composed of a flat plate of forged iron, having a central opening for the passage of the armature shaft, and a cast-metal brush screwed into said opening, substantially as described. 4th. In a dynamo-electric machine, the combination of the end frames *a*, *a*, having bearings *b*, *b*, the cores C, C, having a tapered hole at each end, and the pole-pieces F, F, grooved to receive said cores and secured thereto, substantially as described.

No. 26,157. Type-Writer. (*Graphotype.*)

John Becker, Boston, Mass., U.S., 7th March, 1887; 5 years.

Claim.—1st. In a type-writer, the movable index plate, the type carrying segment pivoted thereon, and the operating lever for moving the type-carrying segment, combined with an independent printing lever pivoted to the index plate, and constructed and arranged to bear upon the type segment to print when depressed, substantially as described. 2nd. In a type-writer, the movable index plate, the type-carrying segment pivoted thereon, and the operating lever for moving the type-carrying segment, combined with a printing lever pivoted to the index plate, a lug *e* and an adjusting stop *m* carried by said printing lever, all substantially as and for the purpose set forth. 3rd. In a type-writer, the feed-bar, movable index plate mounted thereon, combined with the pivoted printing lever and rocking lever for operating said printing lever, the axial centres of the pivots of said printing lever and rocking lever being at right angles with relation to each other, so that the printing lever may be parallel with, and move back and forth upon the rocking lever, all substantially as described. 4th. In a type-writer, the feed roll and presses combined with the feed-bar, and movable index plate mounted to move laterally and to rotate on said feed-bar and normally bearing upon said presser, said index-plate being so constructed and arranged to support the printing mechanism and its co-operating parts, all substantially as described. 5th. In a type-writer, the index plate and type-carrying segment pivoted thereon, and having a series of holes 4, combined with the printing lever having the centering pin 5 to enter the said holes 4, all as set forth. 6th. In a type-writer, the movable index plate and the type-carrying segment pivoted thereon, combined with the pivoted printing lever, the feed-dog, and feed-bar, and rocking lever, and yielding projection 40 attached to said rocking lever, and a limiting stop for the said projection, all substantially as described. 7th. In a type-writer, a rubber segment provided with projecting type properly spaced, and having the deep grooves or recesses 6 between said type, whereby each type may be operated independently of its neighbors on either side, the said grooves permitting the type operated upon to separate from its neighbors, and thus preserve them from injury and from smearing, the paper being written upon, substantially as described. 8th. In a type-writer, the index plate and type-carrying segment pivoted thereon, the guide-arms 6 and ratchet-toothed feed-bar 4, combined with the sleeve 27 mounted upon said feed-bar, between the guide-arms, and independent inking pads carried by said sleeve, and a pivoted printing-lever, all substantially as and for the purpose set forth. 9th. In a type-writer, the movable index plate and type-carrying segment pivoted to said index plate, and bell carried by the index plate, combined with the rocking lever *f* and bell-hammer attached to one end thereof, substantially as described.

No. 26,158. Hame Fastener. (*Couplière d'Attelles.*)

Daniel B. Baker, Rising Sun, Ohio, U.S., 7th March, 1887; 5 years.

Claim.—The herein described hame-fastener, consisting of the strap 10, provided with the hook 11 and teeth 12, the strap 13 provided with the arms 2 and 3 and hook 14, and the lever 15 pivoted between the arms of the strap 13, and provided with the arms 4 and 5 and pin 6, the said lever receiving the strap 10 between its arms, as set forth.

No. 26,159. Pulley Sheave. (*Rouet de Poulie.*)

Francis B. Torrey, Bath, Me., U.S., 7th March, 1887; 5 years.

Claim.—A sheave composed of a metallic rim, having an outer grooved periphery, and an inner cylindrical periphery, and a body of wood, or like material, compressed within the rim, substantially as described.

No. 26,160. Soldering Tool. (*Fer à Souder.*)

Edward M. Lang, Jr., Portland, Me., U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination of a soldering tool and a ring of metal having a shoulder upon the inner wall thereof, substantially as described. 2nd. As a device for soldering the covers of cans, the combination of a ring of metal, having on its interior wall a shoulder slightly smaller than the wall of the can to be soldered, and a circular soldering tool, the diameter of which is such as to allow its free

rotation within the shoulder. 3rd. The combination of the standard *e*, lever or arm *g*, spring *f*, table *h* and ring *a*, as and for the purposes described. 4th. The combination of the table *h*, standard *e*, arm *g* and ring *a*, as and for the purposes set forth. 5th. The combination of the table *h*, standard *e*, arm *g*, ring *a* and rotary table *k*, substantially as described.

No. 26,161. Car Coupler. (*Attelage de Chars.*)

Patric McEntee and August Richter, Montgomery, Minn., U.S., 7th March, 1887; 5 years.

Claim.—1st. In an automatic car-coupler, the draw-head with mortice *e*, flange *f*, notches *p*, space B, pin *c*, swinging block G, pivot arms H and pull *a*, all combined and operating substantially as described. 2nd. In an automatic car-coupler, the combination of the pin *c* and chain ring swing block G, pivot arms H, pull *a*, combined with the draw-head A, mortice *e*, flange *f*, notches *p* and link D, all arranged and operating substantially as set forth and described.

No. 26,162. Methods of Obtaining Compounds of the Rarer Metals from the Earths for use as Incandescence Bodies for Illuminating Purposes. (*Mode d'Obtenir des composés des métaux rares dans leur Terre pour Servir de corps Incandescents pour l'Éclairage.*)

Carl A. Von Welsbach, Vienna, Austria, 7th March, 1887; 5 years.

Claim.—1st. The method, substantially as herein described, of treating cerite, orbite and similar minerals containing cerium, didymium and lanthanum, with hydrochloric acid in the cold for effecting the separation of the said metals. 2nd. The method, substantially as herein described, of separating the cerium from the minerals, referred to in the preceding claim, by treating the chloride solutions thereof with oxalic acid, heating the oxalates obtained to redness, and treating the resulting oxides with nitric acid, whereby the cerium is obtained in the form of a nitrate solution. 3rd. In combination with the method for the separation of cerium from minerals containing cerium, didymium and lanthanum, referred to in the preceding claim, the separation of the didymium and lanthanum contained in the lye after separation of the cerium by evaporating the lye and treating the residue with nitric acid and ammonium nitrate, whereby ammonium double nitrates of the said metals are obtained in the form of crystals, substantially as herein described. 4th. The method, substantially as herein described, of treating zirconium for the removal of all traces of iron therefrom, consisting in first heating the zirconium to a white heat under free admission of air, and then, after finely pulverizing the same, treating it for several days with hydrochloric acid. 5th. The method, substantially as herein described, of producing zirconium in a form suitable for an incandescence body, by first converting the zirconium into a sulphate, and after treating with ammonia, dissolving the same in nitric acid, thereby obtaining a precipitate which, when digested with ammonia and dissolved in nitric acid and evaporated, produces zirconium nitrate. 6th. The method, substantially as herein described, of separating a zirconium compound from a solution of zirconium in nitric acid, by means of sulphate of ammonia, whether this be present in the solution from previous processes, or be subsequently added.

No. 26,163. Porpoise Weir. (*Parc à Marsouin.*)

Octave Ouellet, Quebec, Que., 7th March, 1887; 5 years.

Réclame.—Une nouvelle méthode de pêcherie du marsouin consistant d'une série de barrières en combinaison d'un essieu A, de perches B, de dormants C fixés au sol par des chevilles, des crampons D, des flottes en liège E, le tout fonctionnant tel que décrit. 2o. Une pêcherie au marsouin avec série de barrières, fl de fer F, crochets en bois H, freins K, le tout combiné et fonctionnant ensemble tel que cidessus décrit pour les fins indiquées.

No. 26,164. Vehicle Wheel. (*Roue de Voiture.*)

Miles M. Gray, Eureka Springs, Ark., and James N. Bartlow, St. Louis, Mo., U.S., 7th March, 1887; 5 years.

Claim.—The combination, in a wheel, of the socket *a*, the cap C having a nut, collar and tenon, and the flanged triangular metallic block D, all operating in unison for the expansion of the wheel by turning the cap C, substantially as shown and set forth.

No. 26,165. Car-Coupler. (*Attelage de Chars.*)

James W. Atwood, Jonathan K. Atwood, Lisbon, and James O. Mitchell, Lancaster, N.H., U.S., 7th March, 1887; 5 years.

Claim.—The combination of the coupling pin B, provided with the cam extending down its front and slotted as described, and having the part to act against a link, straight and inclined as explained from the top of the mouth of the draw-bar when the pin is down, with the draw-bar head chambered to receive such pin, and having the pin chamber closed where above the mouth of the draw-bar, and with a pin extended through the draw-bar head and the slope of the cam, all being substantially as set forth.

No. 26,166. Wooden Cards and process of Manufacturing the same. (*Carte et procédé de fabrication de carte de bois.*)

Romeyn B. Hough, Lowville, N.Y., U.S., 7th March 1887; 5 years.

Claim.—1st. As a new article of manufacture, a flexible card composed of wood having its impression receiving face formed of the cross-grain of the wood, substantially as described. 2nd. A card composed of a flexible cross-section of wood, having a smooth and

hardened face capable of receiving clearly-defined lines imparted to it by pen or type, and permitting the transmission of rays of light, substantially as described. 3rd. The process described of forming flexible wooden cards, the same consisting in cutting the card from the block, while the same is in a green state and across the grain of the latter, and subsequently placing the cut cards between absorbent material and subjecting them to pressure, substantially as described.

No. 26, 167. Wire Mat. (*Natte de fil de fer.*)

Franz C. Guilleaume, Mulheim-on the-Rhine, Germany, 7th March, 1887; 5 years.

Claim.—1st. A wire mat composed of spiral coils, arranged parallel to one another, the sides of each coil overlapping the sides of its laterally contiguous coils, and being locked thereto by means of a rod threading the loops formed by the overlapping portions, substantially as described. 2nd. A wire mat composed of spiral coils, each coil being locked to its neighbor by severally intertwining their convolutions, substantially as described. 3rd. A wire mat composed of spiral coils, connected as described, in combination with stiffening rods inserted in the coils, substantially as and for the purpose described.

No. 26,168. Harvesting Machine.

(*Moissonneuse.*)

Thomas S. Hodgson, Peterborough, Ont., 7th March, 1887; 5 years.

Claim.—1st. The combination of base or retaining board A, with pickets F, F, and top rail C of main frame, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bottom part frame, of wings or sides B, to picket F and top rail, of wings or sides D, and shoe or runner D to frame B, also the union of wings to main frame by the bolts G, G, substantially as and for the purpose hereinbefore set forth.

No. 26,169. Brick Machine. (*Machine à briques.*)

Charles W. Raymond, Dayton, Ohio, U.S., 7th March, 1887; 5 years.

Claim.—1st. In a brick-pressing machine, the combination, with a carrier operated by toggle levers, of a compress-box carried upon said carrier, and provided with a movable bottom, and a platen arranged over said compress-box, substantially as described. 2nd. In a brick-pressing machine, the combination, with a carrier operated by toggle levers, of a compress-box carried upon said carrier, and provided with a movable bottom, and an adjustable platen arranged over said compress-box, substantially as described. 3rd. In a brick-pressing machine, the combination, with a vertically-moving carrier, and a compress-box supported on said carrier, of a movable bottom fitted in said compress-box, and provided with a rod or leg extending down through said carrier, and a stop with which said leg engages to cause the expulsion of the brick after the same has been pressed, substantially as described. 4th. In a brick-pressing machine, the combination, with a vertically-moving carrier operated by toggle levers, and a compress-box supported on said carrier, of a movable bottom fitted in said compress-box and provided with a rod or leg extending down through said carrier, and a stop with which said leg engages to cause the expulsion of the brick after the same has been pressed, substantially as described. 5th. In a brick-pressing machine, the combination, with a vertically-moving carrier supporting the compress-box, and operated by toggle levers, of spring buffers arranged to receive the downward stroke of said carrier and toggle levers, substantially as and for the purpose described. 6th. In a brick-pressing machine, the combination, with the compress-box provided with a movable bottom, of a vertically-movable carrier upon which said compress-box is supported, said carrier having a cut-out portion immediately under said movable bottom, substantially as and for the purpose described. 7th. The combination, with the vertically-guided carrier J, of the toggle levers E, F, tie-bar G, link H, and operating handle I, substantially as described. 8th. The combination, with the arch A, of the vertically-adjustable platen O, removable plate P, and operating screw R, substantially as and for the purpose described. 9th. The combination, with the compress-box L, of the movable bottom M, carrier J, leg N, set-screw F, and stop G, substantially as described. 10th. The combination, with the vertically-guided carrier J, toggle levers E, F, tie-bar G, link H, and operating handle I, of the vertically-adjustable platen G, removable plate P, and operating screw R, substantially as described.

No. 26,170. Sleigh. (*Traineau.*)

Andrew Ward, (assignee of Silas F. Hewitt), New York, N.Y., U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination, with a sleigh body having the cross-beams E, the front cross-bar F and the raves e connected with the beams and cross-bar, of the runners G hinged at their front ends to said cross-bar, the knees L having a hinged connection with the cross-beams, the braces M also having a hinged connection with the cross-beams, and screws m and a for locking the knees and braces respectively in their unfolded position, substantially as described. 2nd. The combination, with the raves e, cross-beams E and front cross-bar F of a sleigh body, of the runners G hinged at their forward extremities to said front cross-bar, the knees L having a hinged connection with the cross-beams, and the braces M also having a hinged connection with the cross-beams, and fastening-devices for locking the knees and braces respectively in their unfolded position, substantially as described. 3rd. The combination, with the raves e and cross-beams E of a sleigh body, of the runners G hinged at their forward ends, the knees L having a hinged connection with the cross-beams and each provided with the box N outside its hinged point to receive the upper ends of the runner standards, and the braces M also having a hinged connection with the cross-beams, substantially as described. 4th. The combination, with a sleigh body having a folding back B and folding sides C, of a rearwardly-folding dash-board D adapted to fold down upon the forward ends of the sides, substantially as described. 5th. The combination, with a sleigh body

and runners, of a folding back folding-sides, a folding dash-board and braces hinged to the raves on their connecting cross-bar, and having a detachable connection with the folding dash-board, substantially as described. 6th. The combination of the cross-beams E, E, floor A having side strips a, a and cross-bar d, the folding back B, folding sides C, C, folding dash-board D, raves e, e, cross-bar F, hinged braces H, H, and a fastening for connecting said dash-board and braces, substantially as described. 7th. The combination of the strip K, hinged knee L, hinged brace M, and fastenings for securing said knee and brace in an unfolded position, substantially as described. 8th. The combination of the cross-beams E, E, folding knees L, L, hinged braces M, M, runners G, G, and fastenings for securing the knees and braces thereby securely supporting the runners in an unfolded position, substantially as described.

No. 26,171. Snap Hook, Halter Ring, etc.

(*Crochet à Ressort, Anneau de Chevêtre, etc.*)

Gustave Bernd, Macon, Ga., U.S., 7th March, 1887; 5 years.

Claim.—A snap hook, halter ring, or the like, provided with a straight shank, combined with a round swivel, a socket eccentric to the shank and adapted to receive the knot of the rope, as shown.

No. 26,172. Step Ladder. (*Echelle double.*)

Quintin Maonider, Belleville, Ont., 7th March, 1887; 5 years.

Claim.—1st. In a step-ladder, the combination of the steps s, B, the side bars A, A pivoted to the ends of the steps, near the front and rear edges, the legs D, provided with curved upper ends pivoted to the front sides, bars A, and the staples E attached to the rear bar A and receiving the curved ends of the legs, substantially as described. 2nd. The combination of the steps B, the side bars A, A pivoted to the steps near their front and rear edges, the legs D having curved and serrated ends, and the staples E attached to the rear bars A, and adapted to engage the serrations of the legs D, substantially as described.

No. 26,173. Machine for Sewing on Buttons.

(*Machine à coudre les boutons.*)

Joseph Mathison, Lynn, Mass., U.S., 7th March, 1887; 5 years.

Claim.—1st. The combination of the needle bar, the cast-off bar, means for moving said bar laterally, means substantially as described, whereby the cast-off bar is positively moved by and with the needle bar during parts of the vertical movements of the latter, the spring finger on the needle bar bearing on the cast-off bar, the shoulder, whereby the cast-off is supported above the work during a part of the operation, and afterwards allowed to be depressed by the spring finger, and the spring catch whereby the cast-off bar is briefly supported in a raised position, as set forth. 2nd. The combination of the presser foot, the loop-throwing device composed of the slotted arm c, the front foot in the presser foot and provided with the hook e, the spring-pressed hooked arms d, d pivoted to the arm c, and means substantially as described, for oscillating said loop-throwing device, as set forth. 3rd. In a button-sewing machine, the combination of a work-supporting arm, loop, or stitch-forming mechanism, substantially as described, and a gum cup located in said arm in close proximity to the loop or stitch-forming mechanism, whereby the gum is prevented from drying on the thread between the cup and the needle, as set forth. 4th. In a button-sewing machine, the combination of the loop-forming devices, including the oscillating loop-spreading devices and the oscillating thread-guide or take up, whereby the second loop is tightened after it has been thrown over the button-head by the loop-spreader, and the intermittently operating thread-clamp, whereby the thread is grasped and held while the thread-guide acting as a take-up is drawing in said loop, as set forth. 5th. In a button-sewing machine, the combination with the button-supplying mechanism, the loop or stitch-forming mechanism, including the loop-spreading devices, of the presser-foot having the button-arresting elevations, whereby each button is supported while a loop is being thrown over its head, as set forth. 6th. The combination, with the needle and cast-off bars, and means substantially as described, for reciprocating them vertically, the carrier H supporting said bars and provided with the arm V, the pivoted lever W connected to said arm V and provided with the arm B, the connected arms C, D, adapted to oscillate independently of the lever W, said arm D having an adjustable screw bearing against the arm B of the lever W, the cams J, K and the spring G, whereby the lever W and C are pressed toward said cams, as set forth. 7th. The combination of the needle bars, its carrier means, substantially as described, for varying the throw of the carrier to regulate the initial positions of the needle, and the length of its feed movement, the oscillatory button raceway, and means, substantially as described, whereby the initial position of the raceway may be varied to correspond with the adjustment of the needle, as set forth. 8th. The combination, with the presser foot, of the loop-spreading arm having the V-shaped or triangular plate or hook e, and the needle-receiving slot d, and mechanism for oscillating said arm, as set forth. 9th. The combination, with the loop-throwing or spreading arm having the hook e, and mechanism for oscillating the same, of the plate ii at the rear side of said arm, as and for the purpose specified. 10th. In a button-sewing machine, the combination of the button-supplying mechanism, the needle, the cast-off and their operating mechanism, the loop-spreading devices and their supporting and operating mechanism, the work-supporting arm, the oscillating thread-carrier located in said arm, and the tension spring also located in said arm below the work, and serving to keep the thread taut between the thread-carrier and the work, as set forth. 11th. The combination, with the presser foot, of the loop-spreading arm pivoted to the presser foot, and having the V-shaped triangular hook e rigidly attached to its swinging end, said hook being formed to enter and spread a loop, as described, and mechanism for oscillating said arm. 12th. The combination of the presser foot, the loop-spreading arm having a loop-engaging hook rigidly attached to its swinging end, means for oscillating said arm, and the spring-pressed

fingers d_1, d_2 pivoted to said arm and provided with backward-projecting hooks, as set forth. 13th. The combination with the presser foot and its bar, of the lever A_7 having a flexible extension or spring bearing on a projection on the presser bar, and forcing the latter downwardly with a yielding pressure, and means for operating said lever, as set forth. 14th. The combination, with the presser foot and its bar, of the lever F_7 adapted to bear against a projection on the presser bar, and the lever A_7 having a flexible extension or spring bearing against the said projections on the presser bar, and a projection as G_7 arranged to act on the lever F_7 , as set forth. 15th. The combination, with the presser foot and its bar having the projection E_7 , of the lever F_7 adapted to bear against the lower side of said projection, and the lever A_7 having the spring D_7 bearing on the upper side of said projection, and the adjustable stud or screw G_7 , whereby the lever F_7 is operated to lift the presser foot a distance governed by the adjustment of said screw, as set forth. 16th. In a button-fastening machine, the combination of a work-support, button-fastening mechanism, substantially as described, a fixed arm above the work-support, a button reservoir and raceway, a joint or pivoted connection between said fixed arm and the reservoir and raceway over the fastening mechanism, substantially as described, whereby said reservoir and raceway are oscillated as set forth 17th. In a button-fastening machine, the combination of a work-support button-fastening mechanism, substantially as described, a fixed arm above the work-support, a button reservoir and raceway connected to said arm by a double joint comprising two pivots at right angles to each other, the reservoir and raceway being adapted to oscillate in either or both pivots, and mechanism substantially as described, whereby said reservoir and raceway are oscillated, as set forth. 18th. The combination of the reservoir and raceway connected to a fixed support by a double joint, the jointed connecting rod secured to said raceway, means substantially as described, for reciprocating said rod and thus oscillating the raceway, and the two-armed lever pivoted to a fixed support, one arm of said lever bearing against a projection on the connecting rod, and the other on an attachment on the raceway, as set forth. 19th. The reservoir A provided with a slot formed to receive the heads of buttons, and the raceway having a slot A communicating with the slot of the reservoir, and a groove in one side of the raceway formed to receive the eyes of the buttons, as set forth. 20th. The reservoir and raceway composed of the body 2 , and side-pieces 2_1 formed in one piece, said side-piece having a button eye-guiding slot 5 , and the back-plate 3 and side-piece 3_1 formed in one piece and separated from the body 2 and side-piece 2_1 by a continuous slot or opening $4, 4_1$, as set forth. 21st. The raceway having the button-head and eye-guiding slots combined with the rigid or inelastic gate 7 , pivoted to the raceway and provided with a spring 8 , whereby it is pressed against a rigid part of the raceway and caused to stand normally across the lower end of the button-head guiding slots, and with a socket 7_1 formed to fit a button-head, the arrangement being such that the heads of the buttons pass into the socket 7_1 and are positively held thereby in position to receive the needle, as set forth. 22nd. The combination of the reservoir and raceway mounted to oscillate as described, and provided with the slotted arm, the connecting rod adjustably secured to said slotted arm, and means, substantially as described, for operating said connecting rod, as set forth. 23rd. The combination of the raceway having the button-head and eye-guiding slots, the rigid or inelastic gate pivoted to the raceway and provided with the socket 7_1 , and with the spring 8 which normally holds the gate with its socket in position to receive the button-heads as they pass down said slot, and the adjustable screw or rigid stop y which limits the closing movement of the gate and thereby enables the socket to receive buttons of different sizes without interference with the opening movement of the gate, as set forth. 24th. The combination of the reservoir and raceway mounted to oscillate as described, a connecting rod pivotally secured to said raceway mechanism, whereby said rod is reciprocated and the raceway thereby oscillated, and means substantially as described, whereby the distance between the raceway and the end of the connecting rod that is connected to the operating mechanism of said rod may be varied, as set forth.

No. 26,174. Hot Water Heating Apparatus.

(*Calorifère à eau.*)

William Britton and Joseph Brunet, Montreal, Que., 7th March, 1887; 5 years.

Réclame.—Un fourneau en enveloppe creuse c , avec des serpents g, g , en combinaison, avec les tuyaux k, k et le tuyaux h, t , tout fonctionnement ensemble tel que décrit et pour les fins indiquées.

No. 26,175. Lamp Burner using Circular Wicks. (*Bec de lampe pour Mèches Circulaires.*)

William H. Harvey, Toronto, Ont., 9th March, 1887; 5 years.

Claim.—1st. The improvements in the burner described, whereby the stratum of air surrounding the perforations a is always kept cool, substantially as and for the purpose specified. 2nd. The improvements in the burner described, consisting of the peculiar form of perforated air-chamber in relation to the perforated disc, substantially as and for the purpose specified. 3rd. A corrugated ring G , inserted into the circular wick H to hold it in the wick-rack I , substantially as and for the purpose specified.

No. 26,176. Electrical Appliance for Body Wear. (*Bourrelet électrique hygiénique.*)

James Charles, Richmond, Ind., U.S., 9th March, 1887; 5 years.

Claim.—1st. The combination, with two or more battery cells located at different parts of the body, and having one element in electric contact therewith, of a common electrode connected by a conductor with the other element, and located at a separate portion of the body, and means for holding the batteries and electrode in place, substantially as set forth. 2nd. An electrode to be applied to a portion of the body, the same consisting of two plates of similar

metal, separated by a material capable of absorbing liquids, the inner plate being perforated, substantially as and for the purpose set forth. 3rd. In an electric battery designed to be applied to the human body, a copper plate, a larger perforated zinc plate, and a piece of cloth or other absorbent material between the said plates, the piece of cloth or equivalent material extending outside the two plates, and being held between the edge of the copper plate and the bent-over edge of the zinc plate, substantially as set forth.

No. 26,177. Screw-Cutting Machine.

(*Machine à fileter les Vis.*)

Thomas B. Smith, West Brunswick, Eng., 9th March, 1887; 5 years.

Claim.—1st. The improvements in screw-cutting machines, of three, four or more moving cutters brought to bear simultaneously upon the screw-blank or material, as and for the purpose substantially as set forth. 2nd. In wood screw-cutting machinery, the face-plate, slides and cutter holders, in combination with the pivoted levers operated by a spring and wedge motion, substantially as herein set forth. 3rd. In wood screw-cutting machinery, a face-plate, and slide tool holders mounted thereon, in combination with and operated by an external wedge-piece or cap, substantially as herein set forth.

No. 26,178. Paper Punch.

(*Emporte-pièce à papier.*)

Samuel H. Fish, Hinsdale, Ill., U.S., 9th March, 1887; 5 years.

Claim.—1st. The combination, with the punches mounted upon the cross-bar carried by the plunger, of a spring for holding the plunger in its elevated position, and three guides, one in the standard of the frame, and one in each of the arms or lugs, whereby the punches are directed through the dies, as described. 2nd. The combination, with the cross-bar, and the plunger supported by its bearing in the standard of the frame, of the punches or cutters respectively at the different ends of the cross-bar, the cutting edges of said punches being of the form shown, one lip or point of each being longer than the other lip or point, the lugs with openings or guides surrounding the said cutting edges and the dies w in the plate below, substantially as described.

No. 26,179. Harrow. (*Hersse.*)

Henry W. Alshouse, Custer, Ind., U.S., 9th March, 1887; 5 years.

Claim.—1st. In a harrow, the combination of the sections hinged together, and the spring-arms I secured at their lower ends to the meeting edges of the harrow-sections, and extending upwardly from the same, and the bolts K connecting the upper ends of the said spring-arms together, substantially as described. 2nd. In a harrow, the combination, with the flexible sectional harrow having its sections hinged together, of the spring-arms I fitted at their lower ends on one side of the hinge-point of the sections, and having their upper ends hinged or pivoted together.

No. 26,180. Hanger for Electric Lamps.

(*Support de Lampe Electrique.*)

The Royal Electric Company (assignee of Frederick Thomson), Montreal, Que., 9th March, 1887; 5 years.

Claim.—1st. A hanger for an electric lamp, consisting of a bracket fixed to a support, and an arm pivoted thereto, forming an extension thereof, and carrying the electrical lamp, all substantially as and for the purposes set forth. 2nd. The combination, in an electric lamp hanger, of a bracket fixed to a support, an extension bracket pivoted to same, and carrying on one end the electric lamp and on the other the counterpoise, all substantially as herein set forth. 3rd. In an electric lamp hanger, a fixed bracket carrying a pivoted extension, and formed of an upper straight arm and a lower bent arm, both forked, and having their ends curved so as to fit pole, all as herein set forth. 4th. The combination, in an electric lamp hanger, of a bracket arranged to support an extension holding an electric lamp, and catch on said bracket to hold extension in place, all substantially as described. 5th. In an electric lamp hanger, a fixed bracket carrying an extension pivoted to it, the upper arm of said fixed bracket having its inner end threaded and passed through post, and two sleeved clips on same end secured at any desired point by jam nuts, all substantially as herein described and for the purposes set forth.

No. 26,181. Elevator Draining Plough.

(*Charrue de Drainage à Chaîne Sans fin.*)

Rachel A. Mason (assignee of Allen Mason), Paisley, Ont., 9th March, 1887; 5 years.

Claim.—1st. A draining plough, provided with a chain elevator, and having the sole A formed in two or more parts fitting into one another, for the purpose herein set forth. 2nd. The combination, in a draining plough, of the sloping elevator carrying wheel, and top scraper herein specified and for the purpose set forth. 3rd. In a draining plough, provided with a chain or belt elevator, a carrying-wheel to support and operate said elevator, composed of the two disks c, d , the morticed ring e and moving cogs f , and journalled in the pivoted arm F , substantially as described. 4th. The stationary disk F_1 , placed inside the morticed ring e , held by the hand-lever l , and having formed in it the eccentric groove g , by which the movement of the cogs f is controlled, substantially in the manner described. 5th. The combination, in a draining plough, of a sloping elevator composed of the pivoted arm B , chain C and pulleys a and a_1 , with a top scraper composed of the grooved pulleys L and M , belt O provided with the spring or hinged hose b_2 , scraper g , and the arm N pivoted to the plough beam, substantially as shown and described. 6th. The combination, in a draining plough, of the above described sloping elevator and top scraper, with the adjustable coulters R and R_1 , gauge wheel S , bar T , chain n , pulley v and ratchet-wheel w , substantially as shown and for the purpose set forth.

No. 26,182. Band Cutter for Thrashing Machines. (*Tranche-Hart pour Machines à Battre.*)

John Henry, Charles G. Kenyon, Ardoch, and Robert Woods, Minto, Dak., U.S., 9th March, 1887; 5 years.

Claim.—1st. The combination, in a band-cutter, of the frame arms pivoted thereto, a carrier for the grain bundles, a cylinder journaled above and across the carrier in said arms, knives supported in the cylinder and operating transversely of the carrier, and a cam revolving inside the knife cylinder and engaging the knives to operate them, substantially as herein set forth. 2nd. The combination, in a band cutter, of the carrier frame, a carrier H, a cylinder A mounted loosely on a shaft C, the supporting arms E, E' for said shaft pivoted on the carrier shaft J, knives B fitted in the cylinder A and having studs b, a cam D d fixed to shaft C and engaging the knife, studs b, pulleys and belt P S T driving the cylinder, pulleys R U V driving the cam shaft and driving gearing operating the shaft J, substantially as herein set forth. 3rd. The combination, with the carrier frame F, carrier H, h, and the cylinder A, carrying knives B and supported in arms E, E', pivoted in the carrier shaft J, substantially as specified, of the feet W on the arms, substantially as herein set forth. 4th. In a band-cutter, the knife cylinder A, constructed with heads a, staves a' having outwardly turned and notched edge flanges b, and secured to heads a' and the knives B fitted between the staves, substantially as herein set forth. 5th. In a band-cutter, the knife-cylinder A constructed with staves a, having notched edge flanges b1, heads a', sleeves a3, shaft C, knives B projecting between the edges of the staves and the cam D, d on shaft C, substantially as herein set forth.

No. 26,183. Metal Shingle. (*Bardeau Métallique.*)

The Metallic Roofing Company (assignee of Levi H. Montross), Toronto, Ont., 9th March, 1887; 5 years.

Claim.—A metal plate A, having a fold formed as at a, to receive the edge of the metal plate B, in combination with the flange b, formed on the inner edge of that portion of the plate A extending below the plate B, substantially as described.

No. 26,184. Mechanism for Operating a Roll of Paper having Printed or written on its Surface the Subject matter of any Lecture, etc. (*Mécanisme pour Actionner un Rouleau de Papier Portant Impression ou Ecriture pour Conférences, etc.*)

Alexander G. Hunter, Dundalk, Ont., 9th March, 1887; 5 years.

Claim.—1st. The paper N rolled upon suitable spindles and placed within a case B, having an opening Z formed in it, in combination with mechanism designed to impart a travelling movement to the paper N, substantially as and for the purpose specified. 2nd. The paper N rolled upon suitable spindles, and placed within a case B, having an opening Z formed in it, mechanism for imparting motion to the said paper N, in combination with an internally tapered drum W connected to a longitudinally adjustable spindle X, and arranged to engage with springs V, which are attached to mechanism of the machine, substantially as and for the purpose specified.

No. 26,185. Cattle Stanchion. (*Stalle de Bétail.*)

John Priest, Franconia, N.H., U.S., 9th March, 1887; 5 years.

Claim.—1st. A stanchion, comprising an upright, a cross-bar secured to the upper end thereof and slotted at its free end, the swinging bar projecting up through the slotted end of the cross-bar, and a catch-bar pivoted between its ends above the slotted cross-bar, the long arm having a slot to receive the projecting end of the swinging handle, substantially as set forth. 2nd. The combination, with the rigidly connected upright and slotted cross-bar, and the catch-bar pivoted above said cross-bar and slotted at its inner end of the upright swinging bar, provided with a plate on its outer edge below the inner end of the catch-bar, to prevent the same from being raised by the horn of a confined animal, substantially as set forth.

No. 26,186. Dumper for Load Lifters. (*Bascule pour Monte-Charges.*)

William Sherk, New Hamburg, Ont., 9th March, 1887; 5 years.

Claim.—1st. A cradle D, in combination with the ropes E, F and G, arranged substantially as and for the purpose specified. 2nd. A cradle D, in combination with the ropes E and F, arranged substantially as and for the purpose specified. 3rd. A wagon-rack B, connected to and arranged to be operated by any ordinary load-lifter in combination with the cradle D, detachably connected to the ropes E, F and G, substantially as and for the purpose specified.

No. 26,187. Nut. (*Ecrou.*)

The Elastic Nut Company, Milwaukee (assignee of Justin H. Burdock, Utica), Wis., U.S., 9th March, 1887; 5 years.

Claim.—A nut of steel or analogous elastic material, formed with a longitudinal slit from one end to the other, and with one or more sides of the nut somewhat flattened or driven inward, whereby the nut in its normal condition has a bore at a variance from a true circle at the point or points where said flattening occurs.

No. 26,188. Spark Arrester. (*Garde-Etincelle.*)

William T. Reed, Winnipeg, Man., and Peter Clarke, Toronto, Ont., 10th March, 1887; 5 years.

Claim.—1st. An exhaust pipe, having a central tube extending from a point near the bottom of the smoke box to a point at or near

the mouth of the exhaust nozzle, substantially as and for the purpose specified. 2nd. An exhaust-pipe, having a central tube extending from a point near the bottom of the smoke-box to a point at or near the mouth of the exhaust nozzle, in combination with a petticoat extending over the lower mouth of the said tube, substantially as and for the purpose specified. 3rd. An exhaust pipe, having a central tube extending from a point near the bottom of the smoke box to a point at or near the mouth of the exhaust nozzle, in combination with a petticoat extending over the lower mouth of the said tube, and a netting extending over the bottom of the petticoat, substantially as and for the purpose specified. 4th. A straight smoke-stack D, having a corrugated cone E suspended near its top, and corrugations d formed within it, substantially as and for the purpose specified. 5th. The corrugated deflecting plate F, the corrugated lease plate H, and corrugated front plate I, arranged as specified, in the smoke-box B below the wire-netting J, in combination with an exhaust pipe A, having a central tube a extending from a point near the bottom of the smoke-box B to a point at or near the top of the exhaust nozzle b, substantially as and for the purpose specified. 6th. The exhaust pipe A, having a central tube a, extending from a point near the bottom of the smoke-box B to a point at or near the mouth of the exhaust-nozzle b, in combination with the corrugated cone E suspended in the centre of the smoke-stack D, having corrugations d formed in it, substantially as and for the purpose specified.

No. 26,189. Tanning Process. (*Procédé de Tannage.*)

James T. Rhyne, William C. Red and Joel G. Hamilton, Durant, Miss., U.S., 10th March, 1887; 5 years.

Claim.—My improvement in tanning and finishing hides, which consists in the following steps, to wit: first, soaking the hide in clear water, second, removing all gristly or flinty flesh, third, again soaking the hide in fresh water, fourth, beaming and liming, fifth, again soaking in fresh water, sixth, unhairing on a smooth, flat table with a steel sleek, seventh, removing lime by thoroughly soaking in water and stoning, eighth, tanning with a mixture composed of water, gambier salt, sulphuric acid and saltpeter, ninth, beaming by hand or passing through pressure rollers, tenth, immersing thoroughly in lye water and using a light edge carrying knife on flesh side, and again placing in fresh water, eleventh, taking out the hides and hanging in the shade until dry, and treating to boiling hot tanner's oil (fish-oil and beeswax) on grain side, and applying to the flesh side a boiling mixture of tar, tallow and tanner's oil (fish-oil and beeswax) and finally colouring in the usual manner, substantially as above stated.

No. 26,190. Combined Tent and Waggon. (*Wagon-Tente.*)

Alfred S. Tomkins, London, Eng., 10th March, 1887; 5 years.

Claim.—In combination, with a waggon A having a tilt roof or the framework B thereof, pieces C and D of canvas or other suitable fabric, forming when unfolded the sides and ends of a tent roof with straps E securing these pieces when folded up in rolls, substantially as and for the purpose herein set forth.

No. 26,191. Appliance for Holding Carriage Windows and other Sliding Sashes at any required Height. (*Appareil pour Soutenir les Stores de Voitures et autres croisées en coulisse.*)

Charles G. Gumpel, London, Eng., 10th March, 1887; 5 years.

Claim.—As an appliance for holding carriage windows and other sliding sashes, in combination, with a vertical bar fixed in the recess below the sash, of a horizontal bar embracing the vertical bar, and carried by the bottom of the sash, said horizontal bar being acted upon by two springs tending to cant it, so as to clutch the vertical bar, while a stud or collar on the sash makes the horizontal bar release its hold when the sash is depressed, substantially as herein described.

No. 26,192. System of Connecting Railways which are separated by Straits or other Waters, with Structures, and apparatus for effecting the same. (*Système de raccordement des chemins de fer interrompus par des détroits ou autres nappes d'eau au moyen de détours, et appareil pour cet objet.*)

Sir Edward J. Reed, K.C.B., M.P., London, Eng., 10th March, 1887; 5 years.

Claim.—1st. The system of employing for communication through intervening waters, tubes which are placed either in whole or in part between the surface and the bottom, and there supported, and enabled to carry the necessary weights whether of engines or carriages or otherwise, by the means hereinbefore set forth. 2nd. The employment of such tubes, which derive their support for themselves, and for the weights within them, or passing through them from surplus buoyancy, such tubes being in this case being held on by anchoring weights, as herein before described.

No. 26,193. Fastener for Frame Joints. (*Serre-joint de cadre.*)

William Cutts, Toronto, Ont., 10th March, 1887; 5 years.

Claim.—1st. A plate A, pivoted at a on one side of the joint of the frame, and having a curved slot b made in it eccentric to its pivot a, in combination with a headed pin or screw C, located as described,

and fitting into the curved slot *b*, substantially as and for the purpose specified. 2nd. A plate *a*, pivoted at *a* on one side of the joint of the frame, and having a curved slot *b* made in it eccentric to its pivot *a*, and an enlargement *c* at one end of the slot *b*, in combination with a headed pin or screw *C*, located as described, and fitting into the curved slot *b*, substantially as and for the purpose specified.

No. 26,194. File Cutting Machine.

(*Machine à tailler les limes.*)

Richard Denison and John Blakey, Leeds, Eng., 10th March, 1887; 5 years.

Claim.—1st. In a file-cutting machine, the rectangular tang holder partially working in a recess in an oscillating work-supporting anvil, said holder being attached at its top to a releasing lever, fulcrumed at one end to the anvil and curved at its free end, whilst the bottom of the holder is provided with a pin which after passing through a hole in said recess is encircled by a spring working in a second recess in the said anvil, substantially as herein set forth. 2nd. In a file-cutting machine, the combination, with a tang holder as herein described, of a work-supporting anvil capable of oscillating on pins in a bed trough adapted to travel in fixed slides on a supporting bed-plate, and mechanism as described, for connecting said trough with and propelling it from a single shaft, as set forth. 3rd. In a file-cutting machine, the combination of a work-supporting anvil, travelling bed-trough and tang holder, with the device, as herein described, fixed to the trough for holding and fixing the oscillating anvil in any required position, substantially as herein set forth. 4th. The combination, in a file cutting machine, of the fixed supporting frame or base having a propelling screw shaft mechanism for rotating said shaft in a given direction, a bed trough adapted to travel in slides on said fixed frame, an anvil capable of oscillating in said trough, a movable half-nut for engaging and disengaging the trough with the screw-shaft, a weight, pulley, shaft, and cord for returning the trough to the rear end of the machine when released from the screw-shaft, a tang holder, and device for holding the anvil in a given angular position, substantially as described and set forth. 5th. In a file-cutting machine, the combination with a work-supporting anvil, a travelling bed trough, operating mechanism for said trough, and tang-holding device with a roller attached loosely to a transverse lever weighted at one end, and carried at the other end by an adjusting screw working in bearings on the side of the machine, whereby the file or rasp blank being cut is held firmly on the anvil by the roller close to the cutting chisel, substantially as set forth. 6th. In a file-cutting machine, the combination of a roller attached loosely to a weighted lever placed across the anvil, with an adjusting screw working through one end of the lever, and carried in bearings on the side of the machine, and mechanism, substantially as herein described, for raising the roller and lever clear of its work, whereby the position of the roller can be adjusted to the varying angles of the cutting chisel, substantially as herein set forth. 7th. In a file-cutting machine, the combination, with a reciprocating carriage for carrying a file or rasp to be cut, of a cutting chisel or tool fixed in a reciprocating holder, arranged for holding, setting and fixing the said tool in any given angle or position across the blank, substantially as set forth. 8th. In a file-cutting machine, the combination of a cutting chisel having a flat out, or formed on its shank, for fixing it at any angle in a holder mounted in slides in an adjustable framing, to which an intermittent reciprocating motion so imparted by a cam on the main driving shaft, substantially as described. 9th. The combination of cutter *d*15, holder *d*2, cam *f* for reciprocating same, framing *D* provided with slides *d*1 for the reception of the tenons *d*13 on holder *d*2, trunnions *d*25, bearings *c* on standards or uprights *C*, flanges *c*3, slot holes *c*4, and bolts *c*5, whereby the cutter can be adapted to cut the teeth of the file to any required angle, as set forth. 10th. In a file-cutting machine, the combination of a reciprocating tool-holder carried in an adjustable framing, with cylinder fixed to the said framing directly over the cutter-holder, containing a spiral spring interposed between two pistons, the said cutter-holder being attached to the rod of the lower piston, substantially as set forth. 11th. In a file-cutting machine, the combination of a reciprocating cutter-holder mounted in slides in adjustable framing, provided with trunnions working in bearings formed in the uprights *C*, the cam on driving shaft for raising said holder, the cylinder fixed to the adjustable framing over the cutter slides, the lower piston attached to the said holder by its rod, a spring interposed between the pistons and the lever, mechanism substantially as described, whereby the upper piston is adapted to compress the said spring on to the lower piston independently of or simultaneously with the upward movement of the tool-holder, whereby the pressure or force of the blow of the cutting chisel is regulated, as set forth. 12th. In a file-cutting machine, the combination of screw-shaft *a*3, half-nut *b*8, travelling bed *B*, incline fixed adjustably to such bed, runner *r*4 on lever *r*5 working against said incline, the levers *r*5, *r*6 and *R*, the rods *r*7, *r*8, the winged nut *r*12, the cylinder *d*, the adjustable supporting frame *D* and upper piston *d*4, whereby the spring may be compressed upon the lower piston *d*3, substantially as herein described. 13th. In a file-cutting machine, the combination of the fixed bed-plate, screw-shaft operating mechanism for shaft bed, trough adapted to work in slides on said fixed bed *A*, half-nut whereby it may be engaged with or disengaged from said screw shaft, a work-supporting anvil adapted to oscillate in said trough, the file-holding device substantially as described, the standards or uprights fixed to said fixed bed *A*, provided with bearings at the upper ends for the reception of the trunnions *d*25 on adjustable framing *D*, the adjustable framing *D*, the cylinder *d*, the pressure regulating mechanism, substantially as described, the tool-holder, cutting chisel, and cam on driving shaft, operated as described, whereby the said holder and chisel may be reciprocated and operated for cutting a tooth whilst the anvil and bed trough is stationary, substantially as set forth.

No. 26,195. Telephone Transmitter.

(*Transmetteur de Téléphone.*)

The Bell Telephone Company, Montreal, Que., (assignee of Albert K. Keller, Boston, and Edward H. Lyon, Chelsea, Mass., U. S.), 17th March, 1887; 5 years.

Claim.—1st. In a telephone transmitter, a stationary or non-vibratory electrode, provided as described with internal and circumferential chambers, the said chambers being connected by lateral channels, and adapted to be independently supported in the containing chamber with its lower surface opposite and near to the vibratory electrode. 2nd. In a telephone transmitter *a*, stationary as described, with internal and circumferential reservoirs or chambers, and independently supported in a non-conducting case or containing-chamber with its lower surface opposite and near to the vibratory electrode. 3rd. In a battery-telephone, substantially of the character and class herein described, a stationary electrode provided with an internal chamber, or reservoir in the form of an inverted cone extending vertically through its substance, a circumferential chamber or groove formed between the upper and lower flanges, and connected by lateral channels with the inner chamber, and a face of carbon, the whole supported in a containing-chamber so that the carbon face is held opposite and near to a diaphragm which constitutes the vibratory electrode. 4th. In a transmitting telephone, a stationary or non-vibratory electrode provided as herein described with cord-pulley flanges, the upper flange being wider than the lower, having also an internal chamber formed like an inverted cone and continuing vertically through the substance of the said electrode and an external circumferential reservoir formed by the groove between the upper and lower flange, the said internal and external chamber being connected by lateral channels, and the whole being supported by the upper and wider flanges so that the lower surface is permanently placed near and opposite the vibratory electrode or diaphragm, whereby a granular substance placed between the electrodes and vibrated by sound-waves is enabled to circulate freely through the several chambers, so as to prevent the packing or conglomeration of the same. 5th. The combination substantially as hereinbefore described in a telephone transmitter, of a horizontal diaphragm constituting one electrode, a metallic or carbonaceous stationary complementary electrode in form and character, as described herein, a containing-vessel having non-conducting walls closed on one side by the diaphragm containing the stationary electrode and supporting the same upon its upper edge, and a mass of granulated or finely divided particles in a loose and free state surrounding and adapted to circulate through the stationary electrode, the said particles being also enclosed within the containing chamber and resting upon the diaphragm by which they may be put into vibration. 6th. In a telephone transmitter, a stationary or non-vibratory grooved electrode having an interior funnel-shaped reservoir extending through its substance vertically and provided with flanged sides, the upper of said flanges being larger in diameter and the lower flange smaller in diameter than the containing chamber of the transmitter, whereby by making the electrodes of proper thickness it may be supported by the upper flange in said containing chamber with its lower face opposite and near to the diaphragm, leaving a circular aperture between the lower flange and the side of the said containing chamber, substantially as described. 7th. In a battery telephone, the combination of a horizontal diaphragm or vibratory electrode, a mass of granulated carbon, or like material, resting thereon, an inclosing chamber for the said granular carbon having non-conducting walls and closed in front by the diaphragm, and a stationary complementary electrode depending from the upper edge of the said inclosing chamber thereto, and into the said granular mass, the said electrode having as described grooved chambers communicating with one another, and having a flat or concave surface opposite the vibratory diaphragm a short distance therefrom, whereby the said granular carbon particles when vibrated by the diaphragm may circulate freely through and between the several grooves and chambers of the complementary electrode varying their contact resistance and maintaining their loose and free condition. 8th. In a battery telephone, the combination of the horizontal diaphragm *d* constituting the first electrode, the non-conducting inclosing ring *B* forming a closed chamber upon the said diaphragm, the dependent and stationary complementary electrode *E* supported by and projecting into the said inclosing ring and provided with the inner and outer chambers communicating by channels as described, the granulating and loose conducting material *G* serving as a variable resistance medium resting upon the diaphragm within the inclosing ring and partly burying the fixed electrode, and the mouth-piece *M* by which sound-waves may be directed upon the diaphragm as described herein. 9th. A telephone transmitter consisting of the following elements, in combination, the horizontal diaphragm *d*, the inclosing ring *B*, the dependent and stationary electrode *E* formed and perforated as described, and the granulated and finely divided conducting particles *G* substantially as specified.

No. 26,196. Motor Engine Worked by Combustible Gas or Petroleum Vapour or Spray. (*Machine à Gaz Combustible ou à Vapeur de Pétrole.*)

Gottlieb Daimler, Carmstadt, Germany, 10th March, 1887; 5 years.

Claim.—1st. In a gas or petroleum motor engine, every alternate instroke of which is a working stroke, the method of introducing into the cylinder, firstly, at the commencement of the outstroke following the working instroke, a preliminary charge of combustible mixture or air through the piston, whereby the residual products of bustion are expelled, secondly, during the following instroke, the main charge of combustible mixture, and, thirdly, at the end of the said instroke a supplemental charge of combustible mixture or air admitted through the piston, the said combined charges being then compressed by the following instroke and ignited, substantially as herein described. 2nd. In a gas or petroleum motor engine, every alternate instroke of which is a working stroke, the method of introducing into the cylinder, after the main charge, a supplemental charge of combustible mixture of air, admitted through the piston at the end of the suction instroke, the combined charges being then compressed by the following outstroke and fixed, substantially as herein described with reference to Fig. 5 of the drawings. 3rd. In a gas or petroleum motor engine, every alternate instroke of which is a working stroke, the method of introducing into the cylinder before the main charge a preliminary charge of combustible mixture or air

admitted through the piston, whereby the residual products of combustion are expelled from the cylinder before the admission of the main charge, substantially as herein described with reference to Fig. 6 in the drawings. 4th. The method of effecting the ignition of the charge of a gas or petroleum motor engine by compressing the same while in contact with a heated surface within, or in communication with the engine cylinder, substantially as described. 5th. The combination, in a gas or petroleum motor engine, of the method of introducing a preliminary charge, and a supplemental charge in addition to the main charge of the cylinder, and the method of firing such combined charge by compressing it while in contact with a heated surface, substantially as herein described. 6th. In gas or petroleum motor engines, wherein the ignition of the charge is effected by its compression, in contact with a heated surface, the method of retarding the ignition till the crank is at or about the dead centre by introducing into the admission passage a charge of combustible mixture weaker than that contained in the cylinder, substantially as herein described. 7th. For producing a weaker combustible mixture for the last part of the cylinder charge, of a gas or petroleum motor engine, the gas admission valve q operating in combination with the arm l and screw s on the rod L , so that the valve is partly closed and the supply of gas consequently restricted during the latter part of the suction stroke. 8th. In gas or petroleum motor engines, every alternate stroke of which is a working stroke, the method of actuating the outlet valve of the engine cylinder by means of a double cam groove k , k_1 turning in itself, operating in combination with a sliding block o that actuates the valve. 9th. The circular cam groove k_1 , connected with the outer cam groove k by means of connecting grooves and a switch n , so that when the switch is in one position the block o passes consecutively through both the grooves k and k_1 , while, when it is in another position, the block o is caused to remain in the circular groove k_1 , substantially as and for the purposes set forth. 10th. The governor arm m , operating in combination with the spring n and spring switch n , with inclines and with cam grooves k , k_1 , whereby when the normal speed of the engine is exceeded the block o is caused to remain in the groove k_1 . 11th. The method of regulating the speed of a gas or petroleum motor engine, by causing the discharge valve for the products of combustion to remain closed when the normal speed is exceeded, so that the products of combustion are retained under pressure in the cylinder, and no fresh charge is consequently admitted until the speed is again reduced and the discharge valve opened, substantially as herein described. 12th. In gas or petroleum motor engines, the enclosed crank chamber G , operating in combination with the inlet valve v , cylinder A and piston E , with valve c , so as to constitute a compressing pump by which combustible mixture or air is compressed and introduced into the cylinder through the piston, substantially as herein described. 13th. In gas or petroleum motor engines, the removable crank-handle r , operating in combination with the pivoted strut p for keeping the discharge valve open, and the screw t for keeping open the suction valve g for starting the engine, substantially as set forth.

No. 26,197. Apparatus for Heating Kilns for Drying or Carbonizing Malt, Grain, etc. (*Appareil pour Chauffer les Fours à Sécher ou Torréfier le Malt, les Grains, etc.*)

Alfred S. Tompkins and Frank A. Cracknall, London, Eng., 10th March, 1887; 5 years.

Claim.—1st. Constructing transportable apparatus for heating the air supply to kilns, consisting of one or more metal chambers having at one point a fire place for heating it or them internally, and at another point one or more flue pipes leading to a chimney or chimnies, which chamber or chambers is or are surrounded by a metal casing or casings through which the air supply to the kiln is made to pass, so as to become heated by contact with the outer surfaces of the chamber or chambers before issuing into the kiln, substantially as herein described and shown. 2nd. Constructing transportable apparatus for heating the air supply to kilns, consisting of a metal chamber heated internally by a fire, and containing one or more tubular flues, communicating at one end with an outer casing surrounding the said chamber, and at the other end with the interior of the kiln, so that the air entering the said outer casing is first heated by coming in contact with the outer surface of the heating chamber, and then becomes further heated on passing through the tubular flue or flues passing through the interior of the heating chamber, substantially as herein described and shown.

No. 26,198. Circuit Closing Apparatus for Electric Brake and other Circuits. (*Appareil pour Fermer les Circuits des Freins Electriques et autres.*)

Elias E. Ries, Baltimore, Md., U.S., 11th March, 1887; 5 years.

Claim.—1st. The combination, with the cells or elements of a primary or secondary battery, and a normally open working circuit, in connection with one or more cells of said battery, of a current transmitting or circuit closing apparatus placed in said circuit, and provided with an actuating solenoid, and a suitable speed regulating or timing device, and designed and adapted when the working circuit is closed to automatically and uniformly increase the current strength by throwing additional cells or elements into the said circuit, substantially as set forth. 2nd. The combination, with the cells or elements of a primary or secondary battery, and a working circuit containing one or more translating devices, designed and adapted to receive current from said battery, of a circuit-closing apparatus having a series of contact surfaces in electrical connection with individual elements or groups of elements of said battery, a contact lever adapted to make electrical contact with said contact surfaces, and actuating mechanism, substantially as described, and consisting of a solenoid, and a suitable retarding or speed regulating device, whereby when the circuit to such translating device or devices is closed, the apparatus will be operated to successively and uni-

formly throw additional elements or groups of elements into the working circuit, substantially as set forth. 3rd. The combination, with the cells or elements of a primary or secondary battery, and a normally open working circuit containing one or more translating devices designed to be operated by said battery, of a current transmitting or circuit closing apparatus having a series of contact surfaces in electrical connection with the individual cells of said battery, a movable contact arm or lever normally in position over the first contact surface, but designed to be operated to come into successive contact with all of said surfaces, and a circuit closing lever arranged and adapted to close the circuit to the translating devices, and to limit the motion of the contact arm or lever, substantially as and for the purpose specified. 4th. An electric current transmitting or circuit closing apparatus, provided with a primary lever for closing an electric circuit, a secondary lever arranged to be operated to gradually increase the flow of current through the said circuit, and actuating mechanism designed to automatically operate the secondary lever to increase the current strength upon the closing of the circuit by means of the primary lever, substantially as and for the purpose set forth. 5th. An electric current transmitting or circuit closing apparatus, comprising essentially a primary circuit closing lever, a secondary contact lever, a solenoid for operating the secondary lever, and circuit connections, substantially as set forth, whereby upon the closing of the circuit by the primary lever, the secondary lever is automatically set in motion to gradually increase the strength or quantity of current flowing through the circuit. 6th. In an electric current transmitting apparatus, the combination of a curved or elongated contact surface, forming one terminal of an electric circuit, a circuit closing lever adapted to be moved to various points along said contact surface, and forming the other terminal of said circuit intermediate devices, substantially such as shown, consisting of a secondary lever, and a suitable actuating and speed regulating mechanism, whereby when the circuit is closed by moving the circuit closing lever, the current flowing through the circuit is gradually increased in strength, and a segment pawl or equivalent device to hold the circuit closing lever in any desired position along the curved contact surface, substantially as and for the purpose set forth. 7th. In an electric current transmitting apparatus, the combination of one or more series of contact points or surfaces, a contact arm or lever designed and adapted to come into electrical contact with said series of contact points, an adjustable stop to limit the travel or sweep of said contact arm or lever, and a suitable speed governing or regulating device to control its rate of motion, substantially as and for the purpose set forth. 8th. In an electric current transmitting or circuit closing apparatus, the combination, with the primary circuit closing lever, the secondary switch lever and one or more series of contact points, of a solenoid arranged to be energized by a portion of the current passing through the circuit-closing lever to move the switch lever into successive contact with any desired number of said contact points, and a governing or retarding device to control and render uniform the operation of said arm or lever, substantially as and for the purpose set forth. 9th. In an electric current transmitting or circuit closing apparatus, the combination with a series of contact points, of an arm or lever designed to be operated to come into successive contact with said contact points, and an adjustable governing or speed-regulating device, whereby the sweep of the contact arm or lever over the series of contact points is completed in a predetermined space of time. 10th. In an electric current transmitting or circuit closing apparatus, the combination, with the concentrically arranged series, of contact points and the centrally pivoted contact or switch lever of a solenoid, designed when energized to move said lever across said series of contact points in one direction, a spring for moving the lever across said contact points in an opposite direction, and a dashpot having its piston provided with valved openings of unequal size and designed to govern and regulate the motion of the switch lever, so that it will move in opposite directions at different rates of speed, substantially as and for the purpose set forth. 11th. In an electric current transmitting or circuit closing apparatus, the combination of a normally open working circuit, a series of contact points or terminals arranged to be successively included in said circuit, a movable contact arm normally in contact with the first contact point of said series, a solenoid in a shunt or derived circuit, and means, substantially such as specified, whereby when the working circuit is closed, the solenoid is energized to automatically move the contact arm from its position over the first contact point into successive contact with other contact points of the series, and thereby cause the working strength of the current in said working circuit to be increased, substantially as and for the purpose specified. 12th. In an electric current transmitting or circuit closing apparatus, the combination, with the transmitting or circuit closing mechanism, of a number of exterior circuits or loops containing devices, and means, substantially as described, consisting of a suitable arrangement of terminal contacts and one or more supplementary switch levers, by means of which any one of said exterior circuits or loops can be placed in circuit with the transmitting or circuit closing apparatus, for the purpose set forth. 13th. In an electric current transmitting or circuit closing apparatus, the combination, with the transmitting or circuit closing mechanism, of a number of exterior working circuits containing suitable translating devices, a supplementary switch lever for connecting any of said exterior circuits with the transmitting apparatus, a circuit closing lever in circuit with and forming part of the transmitting apparatus and a separate cut out switch for each of said exterior circuits, substantially as shown and described. 14th. In an electric current transmitting or regulating apparatus, the combination, with the centrally pivoted contact lever and one or more series of contact points, of the concentrically arranged solenoid and regulating cylinder, and the curved or arc shaped core and piston rod attached to said lever, substantially as set forth. 15th. In an electric current transmitting or circuit closing apparatus, the combination, with the solenoid and switch lever, of a regulating cylinder or dash-pot, having a piston provided with valved openings of unequal size and opening in opposite directions, substantially as and for the purpose set forth. 16th. In an electric current transmitting or circuit closing apparatus, the combination, with the enclosing case having a rounded or curved top, of the exterior contact points or surfaces arranged concentrically

around a central shaft, the contact or switch lever movable about said shaft, the circuit closing lever also secured to the said shaft and provided with an exterior handle, a series of notches in the curved top of the enclosing case, and a sector pawl on the circuit closing lever, adapted to enter said notches, substantially as and for the purpose set forth. 17th. In an electric current transmitting or circuit closing apparatus, the combination of a circuit closing lever, provided with a segment pawl, whereby it may be held in any desired position, a stop or projection on the circuit closing lever and a pivoted arm or lever designed to make successive electrical contact with a number of contact points or terminals and arranged to come in contact with said stop or projection and have its motion arrested thereby, substantially as and for the purpose set forth. 18th. In an electrical current transmitting or circuit closing apparatus, the combination with the enclosing case of the primary circuit closing lever, the secondary contact lever with its operative mechanism and the supplementary switch lever O, substantially as and for the purpose set forth. 19th. In an electric current transmitting or circuit closing apparatus, the enclosing case having rounded or curved top, the concentrically arranged series of contact points or surfaces, the centrally pivoted contact or switch lever provided with a contact surface at each extremity, the arc shaped solenoid and dash-pot cylinder at opposite sides of the central pivot, the circuit closing lever and the sector pawl on said lever, substantially as described and for the purpose set forth.

No. 26,199. Oarsman's Harness.

(*Bricole de rameur.*)

Frank F. Martin, Gloucester, Mass., U. S., 11th March, 1887; 5 years.

Claim.—1st. The herein described harness for oarsmen, comprising the strap A adapted to pass around the back of the oarsman, and have its ends connected with the oars, the shoulder strap B for supporting the harness and the arm straps D, substantially as and for the purpose described. 2nd. The herein shown and described harness for oarsmen consisting of the adjustable back strap, provided with means at each end for connecting it with the oars, the adjustable shoulder and breast straps for holding the harness in position upon the wearer, and the adjustable arm straps adjustably connected with the back straps, substantially as and for the purpose set forth.

No. 26,200. Fastening for Attaching Buttons to Garments.

(*Agrafe pour assujétir les boutons aux habits.*)

Richard J. Powell and William F. Nolan, Evansville, Ind., U. S., 11th March, 1887; 5 years.

Claim.—A button-fastener consisting of a staple C, having points D and a base E in form approximating a double letter S, substantially as shown and described and for the purposes set forth.

No. 26,201. Hat, Bonnet and Apparel Rack or Stand.

(*Porte-Manteau.*)

John C. Lavaggi, New York, N. Y., U. S., 11th March, 1887; 5 years.

Claim.—A hat, bonnet, and apparel rack or stand, having a flat-headed bonnet peg having threaded inner end, a coat-hanger consisting of a stem with both ends threaded, and a cross-bar having threaded aperture and a plain peg with threaded end, all as set forth.

No. 26,202. Cleansing Compound.

(*Composition pour nettoyer.*)

Frederick J. Harrison, London, Eng., 11th March, 1887; 5 years.

Claim.—A compound composed of soap, pure alkali, muriate of ammonia, and hydrogen peroxide, substantially in the proportions and for the purpose set forth.

No. 26,203. Railway Car System for Car Brakes.

(*Système de frein de chemin de fer.*)

Jacob L. Brown, Rahway, N. J., U. S., 11th March, 1887; 5 years.

Claim.—1st. In a mechanism for operating car brakes, the combination of a sliding pinion upon a car axle with a frictionally held cone thereon, gear wheel mounted upon a winding shaft, a winding chain upon said shaft, and suitable mechanism for connecting said chain with the car brakes, as set forth. 2nd. The combination, in mechanism for operating car brakes, of the sliding pinion upon the axle, the friction-held cone on said axle gear wheel upon the winding shaft, the lever by which such pinion is operated, the springs acting upon said lever to hold the pinion normally out of engagement with the winding shaft gear and the chains, and appliances by which the position of the pinion is shifted to or from the cone to apply the brakes, substantially as specified. 3rd. In a car brake, the bracket G secured to the truck beam, winding shaft H revolving in journal bearings in said bracket, fixed collar b, loose collar b¹ and adjusting spring b², in combination with the loose gear wheel I, and a sliding pinion E, having a conical bore arranged to wind up the power applying chain K in applying the brakes, as specified. 4th. In a continuous or train brake mechanism, the combination of the power devices with the equalizing lever L, lever S, chains K and K¹, and brake-chain N, all arranged and operating substantially as specified. 5th. In a continuous or train brake, the combination, with the power mechanism, of the lever F, spring e, chains P and Pr, and lever R, said chains being arranged to connect with the brake operating devices of an adjoining car, in the manner set forth.

No. 26,204. Damper for Smoke and Hot Air Pipes.

(*Registre de Tuyau de fumée et d'air chaud.*)

John Hunter, Independence, Mo., U. S., 11th March, 1887; 5 years.

Claim.—1st. A central disc A having a hole a cut through it, in

combination with the discs E and F, corresponding in diameter substantially with the diameter of the hole a, and located substantially as and for the purpose specified. 2nd. A central disc A pivoted on the frame C and having a hole a cut through it, in combination with the discs E and F pivoted in the frame C, and located substantially as and for the purpose specified.

No. 26,205. Weather Strip.

(*Bourrelet de porte.*)

George Hull, West Superior, Wis., and Henry Kirk, Minneapolis, Minn., U. S., 11th March, 1887; 5 years.

Claim.—The combination, with a door-case and a door having a groove in its lower end, of a weather strip, springs for raising said strip into said groove, and projections provided on said case for engaging said strip to depress it when the door is closed, substantially as and for the purpose set forth.

No. 26,206. Device for Lubricating Journals on Car Axles.

(*Boîte à graisse.*)

Rudolph Faas, Chicago, Ill., 11th March, 1887; 5 years.

Claim.—1st. The combination of the roller E, with the metal frame D D, open upon the bottom to permit the roller E to play in, or receive the lubricant, which is then served upon the journal A, substantially as set forth. 2nd. The combination of the roller E consisting of cork, leather, felt, cloth, paper or other porous substance, for receiving, holding and serving the lubricant to the journal A, with the metal frame D D and extension H H, substantially as above described and set forth. 3rd. The combination of the roller E partially covered and protected by the guards or aprons a, a, bearing upon the blocks d, d, resting upon the spiral springs F, F, operating upon the journal A, substantially as described. 4th. The combination of the roller E, with the frame D D and extension H H, with the cover K, and adjustable spring cover G, for the purpose of keeping the journal continuously lubricated and of protecting the lubricant from dirt, sand, or other foreign material, substantially as set forth and described. 5th. The combination of the roller E, having capillary attraction, with the apron or guards a, a, the blocks d, d, the set-screws x, x, the flanges y, y, centered and countersunk, the rod z, the spiral springs F, F, the frame D D and H H, and covers G and K, substantially as described for the purpose specified. 6th. The combination of the rollers E on its frame D D, its adjustable bearing, and protected with its aprons or guards as above described, with the device resting upon the bottom of, and in the lower corner of the journal box B which allows the roller E to engage with the journal A at an angle of about forty-five degrees (more or less), as above described, thereby allowing the journal to play freely in the journal-box, and upon my device without injury to my roller and frame, substantially as set forth.

No. 26,207. Wire Mat.

(*Natte en fil de fer.*)

John D. Oliver, (assignee of John Tye), Toronto, Ont., 12th March, 1887; 5 years.

Claim.—In a wire mat, the combination, with a mesh made from intertwined wires, of a clamp formed from a single tube open at one side, to receive the wires and admit the ends or coils at the ends of the mesh to its interior, substantially as and for the purpose specified.

No. 26,208. Wire Mat.

(*Natte en fil de fer.*)

John D. Oliver, (assignee of John Tye), Toronto, Ont., 12th March, 1887; 5 years.

Claim.—1st. A wire door or foot mat composed of a series of coiled wires forming a mesh, end clamps holding the ends of said wire mesh, and stretching rods extending between said clamp and connected therewith, said stretching rods also passing through the extreme outer coils of the mesh at the sides of the mat, substantially as set forth. 2nd. The combination, in a clamp for wire mats, of two sections b¹, b², hollowed in the centre, hinges or hooks b³ and screws b⁴, substantially as and for the purpose specified.

No. 26,209. Method of Administering Faradic or Galvanic Electricity combined with an Advertising Apparatus.

(*Mode d'Administer l'électricité faradique ou galvanique en combinaison avec un appareil de publicité.*)

William Oliver, London, Eng., 12th March, 1887; 5 years.

Claim.—1st. The apparatus hereinbefore described, for automatically registering the relative strength of an electric current, which it administers, the whole to be rendered workable by the dropping in of a coin or coins. 2nd. The apparatus hereinbefore described which, on a coin or coins being dropped therein, indicates the relative strength of an electric current, which is administered to a person holding or operating the handles, and registers or marks said relative strength upon a card and at the same times exhibits an advertisement.

No. 26,210. Electrical Brush.

(*Brosse électrique.*)

James C. Aiken and Homer W. Hedge, New York, N. Y., (assignees of James D. Culp, San Felipe, Cal.), U. S., 12th March, 1887; 5 years.

Claim.—1st. The combination of an electrical apparatus or generator, with a brush having in the brush-back or stock, a reciprocating part movable by the mechanical action of using the brush for giving automatically a succession of discharges, substantially as described. 2nd. In combination with a brush, an electrical apparatus or generator in the back or stock of said brush, for giving a succession of discharges, and separate points or electrodes included in the discharging circuit for causing a spark or a series of sparks when a discharge

occurs, substantially as described. 3rd. In combination with the brush, an electrophorus forming part of the brush-back for giving a succession of discharges, substantially as described. 4th. In combination with the brush, the electrophorus arranged in the brush-back, and having the inducing and induced plates connected with each other by a hinge or pivot, substantially as described. 5th. The combination, with the bristles or rubbing portion of the brush, of the sole or ground conductor in electrical connection with said bristles or rubbing portion, the inducing plate on said sole and the movable induced plate, substantially as described. 6th. The brush having the back in two parts hinged together, in combination with an electrical generator or electrophorus having the inducing means carried by one of said parts, and the induced device by the other, substantially as described. 7th. The brush having the back in two parts, detachably connected and movable with reference to each other, when connected, in combination with the electrophorus or electrical generator in said back, substantially as described. 8th. The combination of the brush, the electrophorus in the back of said brush, and the separate points or electrodes included in the discharging circuit of the electrophorus, substantially as described. 9th. The combination, with the back or stock, of the electrophorus or electrical generator carried thereby, and an exposed conductor on the brush-handle, the same being in electrical connection with the said generator, and serving to establish a ground connection for the same through the hand of the user, substantially as described.

No. 26,211. Electrical Torch for Lighting Gas. (*Flambeau électrique pour allumer le Gaz.*)

James O. Aiken and Homer W. Hedge, new York, N. Y., (assignees of James D. Culp, San Felipe, Cal.), U. S., 12th March, 1887; 5 years.

Claim.—1st. In an electrical igniting apparatus, and in combination with an electrical generator or source of electricity, the electrodes or terminals between which the electricity is discharged, protected by an envelope to the discharging points from contact with the gas to be lighted to prevent dissipation of the charge by the gas, substantially as described. 2nd. The combination, with discharging electrodes or terminals, of an electric igniting device, of an electrophorus having the induced plate carried by a lever, and a wire embedded in a rod of insulating material, and forming a constant or permanent electrical connection said plate and one of said electrodes, substantially as described. 3rd. The combination, with the discharging electrodes or terminals, of an igniting device, and an electrophorus having the induced plate carried by a lever, and arranged parallel to the length of the torch, of an electrical connection between one electrode or terminal, and the sole or ground conductor of the electrophorus and a second connection between the other electrode or terminal, and the induced plate of the electrophorus, substantially as described. 4th. The combination, with the elongated frame having a handle at one end, and the electrodes or terminals at the other end of said frame, of the sole and inducing non-conductor, both in the form of plates attached to said frame parallel to the length thereof, the induced conductor also in the form of a plate placed directly outside said non-conductor, so that it may rest against it, the lever carrying said induced conductor, and the permanent electrical connections between the sole and induced conductor, and the respective electrodes or terminals, substantially as described. 5th. The combination of the stiff rod provided with a handle, the sole, and the inducing plate carried thereby, the metal pins or screws connecting said parts and forming a conductor for putting the induced plate in electrical connection with the sole, the lever fulcrumed on said rod and the induced plate carried by said lever, substantially as described. 6th. The combination, in an electric torch or igniter, with the discharging electrodes or terminals, and the frame or rods at the end of which said electrodes are placed, of the electrophorus at the opposite end of the implement formed of a sole and inducing non-conductor, both in the form of plates, and an induced plate carried by a lever, the induced plate being connected electrically with one electrode and the sole or ground conductor with the other electrode, substantially as described. 7th. The combination, with the electric generator, of a gas-lighting torch of the two bars, the spanner or fork connecting their upper ends, and the discharging electrodes placed just below the said spanner in the space between said bars, substantially as described. 8th. The combination, in an electric torch or igniter, with the discharging electrodes or terminals, of the hood enclosing one side of said electrodes or terminals, substantially as described. 9th. The combination, with the electrophorus, of the discharging electrodes connected therewith, and protected by an envelope from contact with the gas to be ignited except at the discharging points, substantially as described. 11th. The herein-described electric torch or igniter, comprising an elongated frame, an electrophorus at the lower end thereof, having an induced plate carried by a lever, a spanner or fork at the upper end, and the discharging electrodes or terminals also at the upper end, and connected one electrode with the induced plate, and the other with the sole or ground conductor of the electrophorus, substantially as described.

No. 26,212. Wheel for Vehicles, etc.

(*Roue pour Voitures, etc.*)

Barnhard Schad and Frank J. Schults, Batavia, N. Y., U. S., 12th March, 1887; 5 years.

Claim.—1st. In a wheel, the combination, with the spoke and felloe, of a sleeve bearing against the felloe and having the headed end of the spoke fitting therein, an interiorly and exteriorly threaded nut fitting within the sleeve, and a bolt passed through the felloe, and having a screw-threaded end fitting within the interior threads of the nut, substantially as described. 2nd. In a wheel, the combination, with the spokes, felloe and tire of a sleeve having the headed end of a spoke fitting therein, an exteriorly and interiorly threaded nut screwed into the sleeve, and a bolt passed through the tire and felloe and having a threaded end screwed into the nut, substantially as described. 3rd. In a wheel, the combination, with the spokes and

felloes of an interiorly threaded sleeve, having the headed end of the spoke fitting therein, an interiorly and exteriorly threaded nut screwed into the sleeve, the said sleeve and nut being formed one with a recess, and the other with a flange fitting in the recess, and a threaded bolt passing through the felloe and having its threaded end screwed into the nut, substantially as described. 4th. In a suspension wheel, the combination of the hub and casting J, having raised and overhanging flanges K made in one piece therewith to form chambers H, the felloe, the suspension spokes having their lower ends passing through the flanges of the hub, casting nuts L applied to the spokes, and having a horizontal and vertical movement within the chambers h, and caps N applied to the ends of said casting, and bearing against said nuts to prevent the same from turning, substantially as described. 5th. A suspension wheel composed of the hub casting formed with chambers h, the felloe and tire, the tire bolts passed through the tire and felloe, the nuts screwed on to the bolts, the sleeves screwed on to the nuts, the headed spokes fitting at one end within the sleeve below the nuts, and at the other end passed through a portion of the hub casting into the chamber h, nuts applied to the threaded ends of the spokes within said chambers, and caps screwed on to the ends of the hub casting and bearing against said nuts to prevent them from turning, substantially as described.

No. 26,213. Device for Jointing Saw Teeth.

(*Appareil pour presser les dents des scies.*)

Henry Flaber and Anthony B. Strather, Findlay, Ohio, U. S., 12th March, 1887; 5 years.

Claim.—1st. In a saw jointer, a head having the depending flanges provided with the notches or spaces on one edge, and the guides arranged beneath the head and having a space I, in combination with a standard, and a clamping screw working in the standard and passing through the space I to bear against a file which is to be fitted in the notches, substantially as described for the purpose set forth. 2nd. In a saw jointer, a head provided with the slotted central depression, the depending integral flanges having the notches or slots in one edge, the integral guides arranged beneath the notches or slots in the flanges, and connected at their inner ends with a central depending flange on the head, the inner ends of the said guides being separated to provide an intermediate space, a standard connected to the head, and a clamping screw working in the standard, and having a head which passes through the space between the ends of the guides, substantially as described for the purpose set forth.

No. 26,214. Truss. (*Bandage herniaire.*)

Adeline M. L. Armstrong, (assignee of James L. Armstrong), Ottawa, Ont., 12th March, 1887; 5 years

Claim.—1st. A truss consisting of a round wire band A, tubular extensions B provided with set-screws b, and moisture-resisting padded disks B¹, a hard pad C with elastic rim C¹, adjustably attached to the band A by a double coiled spring D, and collar E, the spring provided with a slotted shank d which is adjustably secured under a washer F¹ to the back of the pad, by a screw f passing in a nut f¹ recessed in the pad and held in place by a back plate F, substantially as set forth. 2nd. The combination of the band A, tubular slides B, set-screws b, disks b¹ composed of moisture proof material enclosing a soft padding and cemented, and eyeletted at the edges, substantially as set forth. 3rd. The combination of the disks B¹, tubular slides B, set-screws b, collars b¹, and the Band wire A, substantially as set forth. 4th. The combination of the wire A, collar E, set-screw e, spring D, washer F¹, plate F, screw f, nut f¹, pad body C, groove c, and elastic tubular arm C¹, substantially as set forth. 5th. The combination of the pad body C, groove c, and elastic rim C¹, nut f, and back plate F, substantially as set forth. 6th. The combination of the collar E, set-screw e, and coiled spring D, d, substantially as set forth.

No. 26,215. Automatic Wind Regulator for Thrashing and Clover Hulling Machines. (*Régulateur Automatique du Courant d'air dans les Machines à battre et à égrener le trèfle.*)

Orlando E. Scott, Elkwood, and William McKnight, Hope, D. T., U. S., 12th March, 1887; 5 years.

Claim.—1st. In an automatic wind-regulator, the combination, with a gravitating shoe and the shutters, of a rock-shaft suitably supported above the shoe devices connecting the said rock-shaft with the shoe, the levers affixed to the rock-shaft devices connecting the said levers and the shutters, and a spring connecting to one of the levers to counterbalance the shoe, and thereby maintain the wind shutters in either a partially or wholly closed condition, substantially as described. 2nd. In an automatic wind-regulator, the combination, with a gravitating shoe and the shutters, of a rock-shaft connected by intermediate devices with the shoe, the levers affixed to the rock-shaft, and connected to the shutters by connecting rods, a spring connected to one of the levers to counterbalance the shoe, and a weight carried by one of the levers and adapted to be moved back and forth to regulate the opening between the shutters, substantially as described for the purpose set forth. 3rd. In an automatic wind regulator, the combination, with a shoe and the shutters, of the levers and connections intermediate of the shoe and shutters, the fan casing consisting of a fixed and movable section, and intermediate devices connecting said movable section with the lever so as to be actuated thereby when the levers are moved, substantially as described for the purpose set forth. 4th. An automatic wind-regulator comprising a shoe, the wind shutters, a rock-shaft, intermediate devices connecting said rock-shaft with the shoe, the levers H having the rods, a fan, the fixed and movable case, sections surrounding the fan, a rock-shaft to which the movable case section is connected, a lever M affixed to the rock-shaft, a regulating weight adjustably fitted on the said lever, and a spring intermediate of the levers H, m, substantially as described for the purpose set forth. 5th.

In an automatic blast-regulator for thrashing machines, the combination of the gravitating shoe, the pivoted wind shutters, tee rock-shaft, the crank arms, the levers, the hangers intermediate of the crank arms and shoe, the links connected to the free ends of the levers and the shutters, the retracting spring connected with one of the levers, the rock-shaft, the movable case-section, the arm *m* carried by the rock-shaft, the spring intermediate of the said arm *m*, and one of the levers and the regulating weights on the arm *m*, and the lever, substantially as herein shown and described for the purpose set forth.

No. 26,216. Car-Coupler. (*Attelage de Chars.*)

The Cowell Platform and Coupling Company, Cleveland, Ohio, (assignee of John W. Marden, Waltham, and Richmond H. Littlefield, Somerville, Mass.), U.S., 12th March, 1887; 5 years.

Claim.—1st. In a car-coupling, a draw-bar provided with a lateral hook at its outer end, a cushioning spring at the inner end of said draw-bar, and an independent buffer resting against said spring, and adapted to resist the longitudinal thrust of a companion draw-bar, substantially as described. 2nd. In a car-coupling, a draw-bar provided with a lateral hook at its outer end forming an acute angle therewith, a cushioning spring at the inner end of said draw-bar, and an independent buffer adapted to rest against said spring, and against the hook of a companion draw-bar when the hooks are engaged, substantially as described. 3rd. In a car-coupling, the combination of a draw-bar, a lateral hook pivoted to the outer end thereof, a cushioning-spring for said draw-bar, an independent buffer adapted to rest against said spring, and against the hook of a companion draw-bar when the hooks are engaged, a locking-bar for locking said hook, and a lever for operating said locking-bar, substantially as described. 4th. In a car-coupling, the combination of two pivoted laterally-swinging draw-bars, cushioning-springs for said draw-bars, oscillating interlocking hooks pivoted to the front ends of said draw-bars, spring buffers independent of and adjacent to said draw-bars, said buffers being adapted for contact with said hooks when the cars are coupled and locks for retaining said hooks in coupled positions, substantially as described. 5th. In a car-coupling, the combination of two pivoted laterally swinging draw-bars, cushioning-spring for said draw-bars, laterally-oscillating segments pivoted in the front ends of said draw-bars, the adjacent radial or inclined faces of said segment constituting meeting-hooks, spring buffers independent of and adjacent to said draw-bars, adapted for contact with the curved faces of said segments when the draw-bars are coupled together and locks for holding said segments in coupled positions, substantially as described.

No. 26,217. Truck for Carrying Boxes, Barrels, etc. (*Charriot pour Transporter les Boites, Barils, etc.*)

William A. Cameron, New York (assignee of Daniel S. Wing, Syracuse), N.Y., U.S., 12th March, 1887; 5 years.

Claim.—1st. The combination, with a wheeled truck frame, of the pivoted clamping levers, the centrally pivoted rotary disk or wheel having an attached lever, and links or bars pivoted at one end to the clamping levers and at the other end portions engaging the rotary disk or wheel, substantially as described. 2nd. The combination, with the wheeled truck frame, having at each side a transverse slot *a*, of the clamping levers *D, D*, having pivot *a*, adjustable toward and from each other in the said transverse slots, and means for actuating the levers on said adjustable pivots, substantially as described. 3rd. The combination, with the wheeled truck frame, having at each side a transverse slot *a*, of the clamping levers *D, D*, having pivots *a* adjustable toward and from each other in said transverse slots, a rotary disk or wheel pivoted to the truck frame, and having an attached lever and links or bars pivoted at one end to the clamping levers, and at their other end portions engaging said rotary disk or wheel, substantially as described. 4th. The combination, with a wheeled truck frame having an attached segmental rack *J*, of the clamping levers pivoted to the truck frame, the rotary disk or wheel pivoted to the truck frame, and provided with the attached dog *I* and operating lever *G*, and the links or bars pivoted at one end to the clamping levers, and at their other end portions engaging the rotary disk or wheel, substantially as and for the purposes described. 5th. The combination, with a truck frame and the wheels supporting the same, of the clamping levers *D, D*, the rack bars *E, E*, the disk or wheel *F*, and means for turning the disk or wheel, substantially as described. 6th. The combination, with the truck frame and the wheels supporting the same, of the clamping levers *D, D*, the rack bars *E, E*, the cog-wheel *F*, the lever *G*, the dog *I* and the ratchet segment *J*, substantially as described. 7th. The combination, with the truck frame and the wheels supporting the same, of the clamping levers *D, D*, the rack bars *E, E*, the cog-wheel *F*, the lever *G* and the spring *H*, substantially as described.

No. 26,218. Cash Carrier for Store Service.

(*Coulisse à Monnaie pour Service de Magasin.*)

Fred. J. A. Hazard, Belleville, Ont., 12th March, 1887; 5 years.

Claim.—1st. The block *b*, composed of wood or other suitable material fixed loosely upon the wire *d*, and having around it and secured with it a band *h*, with two bosses *h₁*, and means for securing the clevis *i* with the said bosses, the whole to be operated upon the wire *d*, as and for the purpose set forth. 2nd. The combination, with the block *b*, band *h* and clevis *i*, with the cones *j, j* and elastic *l*, as and for the purpose set forth. 3rd. The cash cup *t*, having two broad lugs *s* made integral with the said cup, as and for the purpose set forth. 4th. The combination, with the cash cup *t* and car *a*, of the annular shaped piece *p*, having a flange *q* and stops *q₁*, *q₂*, the said flange having two openings to receive or let go the lugs *s*, as and for the purpose set forth. 5th. A cash car, having formed at its middle

and made with the said car, a disk *w* and lugs *v*, as and for the purpose set forth. 6th. The combination, with the latch *m*, of the set screw *o₁*, spring *o* and supporting arm *o*, the said arm having attached thereto the spring *o₁*, and provided with an eye at its end through which the cord *j* is operated, as and for the purpose set forth.

No. 26,219. Clothes Rack. (*Séchoir à Linge.*)

Hiram W. Kistler (assignee of Davis D. Gordon), Stroudsburg, Penn., U.S., 12th March, 1887; 5 years.

Claim.—1st. The combination, with a standard, a set of arms pivoted thereto, and a sliding collar mounted on said standard, of bars connecting the lower ends of the arms with the collar, and legs pivoted to the standard and connected to the bars, substantially as set forth. 2nd. In a folding rack, the combination, with a standard, a cap secured thereto and provided with slots in its lower edge, a series of arms adapted to swing freely within the slots, and a wire embracing the cap and passing through the arms, of the sliding collar, the bars connecting the collar and lower ends of the arms, the legs pivoted to the standard and the pieces connecting the legs and bars, substantially as set forth.

No. 26,220. Combined Heel and Toe Protector. (*Protecteur de Talon et d'Avant Pied.*)

George H. Jones, Rochester, N.Y., U.S., 12th March, 1887; 5 years.

Claim.—1st. As an improved article of manufacture, the device herein described, consisting of the sole *a*, heel socket *b* and toe socket *c*, said sockets serving as heel and toe protectors, and the sole between the sockets being flat and without quarters, as and for the purpose specified. 2nd. The device herein described, consisting of the sole *a*, heel socket *b* and toe socket *c*, the heel socket being made separate from the sole and attachable thereto by eyelets or other suitable means, as set forth.

No. 26,221. Device for Extinguishing Fires in Stoves. (*Appareil pour Eteindre le Feu dans les Poêles.*)

Terrence M. O'Loughlin, West Bay City, Mich., U.S., 12th March, 1887; 5 years.

Claim.—1st. The combination, with a stove, of a water tank adjacent to, and rigidly secured to the stove, and having in its upper portion an opening connected with the upper portion of the stove body, substantially as set forth. 2nd. The combination, with a stove and a vertical water tank secured rigidly to the outside of the stove, of a hollow portion *f* having an end connected with the upper portion of the tank, and its opposite end opening into and secured to the stove, substantially as set forth. 3rd. The combination of a stove and a water tank rigidly secured to the outside of the stove, and having a hollow portion *f* connecting the upper portion of the tank with the stove, of the inwardly projecting flanges *g* within the portion *f*, and a plate *h* hinged to the upper inner side of the portion *f* and bearing against the flange, substantially as set forth. 4th. The combination, with a stove, a water tank rigidly secured to the outside of the stove, and having its upper portion connected with the stove by the piece *f* passing into the stove, of a perforated plate covering the inner end of the portion *f*, substantially as set forth. 5th. The combination, with a stove and a water tank rigidly secured to the outside of the stove, and having an opening in its upper end connected with the stove, of a float between the tank and a rod connected with the float and passing through the upper portion of the tank, substantially as set forth. 6th. The combination, with a stove and a water tank rigidly secured to the stove, and having an opening in its upper end connected with the stove, of one or more vent pipes *g* passing through the upper portion of, and extending nearly to the bottom of the tank, substantially as set forth. 7th. The combination, with a stove and a water tank secured to the outside of the stove and having an opening in its upper portion connected with the stove with a deflecting plate *s* placed between the stove and tank, and substantially as set forth.

No. 26,222. Main Wheel for Harvesters.

(*Maitresse Roue de Moissonneuse.*)

The Massey Manufacturing Company, Toronto, Ont. (assignee of William N. Whiteley, Springfield, Ohio, U.S., 12th March, 1887; 5 years.

Claim.—1st. In a driving or carrying wheel, a metallic rim and a hub composed of a main sleeve and a sliding flanged sleeve *10*, and straining bolts connecting the sleeve and combined with spokes, provided at the outer ends with tenons and shoulders and secured to the wheel rim, and the inner ends with L-heads set in sockets tangential to the axis thereof, whereby, when the parts of the hub are drawn together or relaxed, said L-heads will partly rotate in their sockets without cramping, substantially as set forth. 2nd. In a trussed driving or carrying wheel, a contractile hub composed of a main sleeve *10* and a detachable gear wheel, in combination with the tension bolts *13*, which pass through said gear and the flanges of the hub, as and for the purpose set forth. 3rd. A driving or carrying wheel rim and spokes *9*, each having an L-shaped end *16*, in combination with adjustable flange *10*, sleeve *6* and straining rods *13*, as shown and described for the purposes set forth. 4th. A driving or carrying wheel and draft rod *18*, combined with a gear wheel detachable from said driving wheel and its contractile hub and the straining bolts *13*, whereby the gear ring is attached and the wheel is strained by the same bolts, for the purpose set forth, substantially as shown and described. 5th. In an expanding wheel, the spokes set in radial planes, or nearly so, with axis of an expanding and contracting hub, and with the hook ends in a plane transverse to the axis, for the purpose set forth.

No. 26,223. Oil Heater for Stoves.*(Réchauffeur d'Huile pour Poêles.)*

William W. Batchelder, New York, N.Y., U. S., 14th March, 1887; 5 years.

Claim.—1st. In an oil heating apparatus, the combination of a wick tube, a vapor chamber located above said wick tube, a multiple jet burner at the upper end of the vapor chamber, and valves to regulate the supply of air to the burner, substantially as described. 2nd. In an oil heating apparatus, the combination of a wick tube, a vapor chamber provided with a diaphragm having a contracted opening located above said wick tube, a multiple jet burner at the upper end of said vapor chamber, and perforated valves to regulate the supply of air to the burner, substantially as described. 3rd. In an oil heating apparatus, the combination of a wick tube, a vapor chamber provided with a diaphragm having a contracted opening formed with upwardly and inwardly curved lips, said opening being located directly above the wick tubes, a multiple jet burner at the upper end of the vapor chamber and air supply regulating valves, substantially as described. 4th. In an oil heating apparatus, the combination of a wick tube, a vapor chamber located above said wick tube, a burner having multiple side jets, and perforated valves for regulating the supply of air to the burner, substantially as described. 5th. In an oil heating apparatus, the combination of a wick tube, a vapor chamber located above said wick tube, a multiple jet burner at the upper end of the vapor chamber, and an air receiving rim and deflector surrounding said burner, and valves for regulating the supply of air to the burner, substantially as described. 6th. In an oil heating apparatus, the combination of a wick tube, a vapor chamber located above said wick tube, a multiple jet burner at the upper end of the vapor chamber, and an air receiving deflector inclined upward and inward toward the burner jets, and provided with valves, substantially as described. 7th. In an oil heating apparatus, the combination of a wick tube, a vapor chamber above said wick tube, a multiple jet burner, an air receiving rim and deflector, and valves located in the space between said deflector and burner, substantially as described.

No. 26,224. Dumping Railway Car.*(Char-Tombereau de Chemin de Fer.)*

George E. Blaine, Dayton, Ohio, U.S., 14th March, 1887; 5 years.

Claim.—1st. In combination, a car body having dependent therefrom a concave rack, a stationary body carrying a shaft having a gear to engage said rack, and a worm mechanism for rotating said shaft, as set forth. 2nd. In combination, a car body having a dependent, concave rack, a shaft having bearings in the main or stationary body and carrying a gear to engage said rack, a counter-shaft, having at one end a gear to engage the gear on the main shaft, and at the other end a worm wheel, an upright shaft carrying at its lower end a worm to engage said worm wheel, as set forth. 3rd. In combination, the tilting body, the dependent concave rack carried thereby, the anti-friction rollers carried by the rack, the main or stationary body of the car and the curved guide-ways mounted thereon, provided with upturned ends, for the purpose set forth. 4th. In combination, the tilting body, the dependent concave rack carried thereby, the pin passing through said rack, the hooked hangers on the ends of the said pins, and the curved guide-ways having side flanges with which said hangers engage, for the purpose set forth. 5th. In combination, the tilting car body, the dependent concave rack carried thereby, the main body, a pair of curved guideways held apart by shouldered bolts, and having upturned ends and side flanges, the pins in the ends of the rack, the rollers on said pins and the hooked hangers on said pins to engage said flanges, as set forth. 6th. In combination, the tilting car body having its sides pivoted at their tops, the latches normally held in their highest position, the operating levers A_1 and the main body of the car having stirrups through which said operating levers pass, and by which they are automatically elevated or depressed, as set forth. 7th. In combination, the tilting car body, its pivoted sides, the latches normally held in their highest position, the weighted levers secured thereto, the operating lever A_1 and the main body having stirrups to operate said lever, as set forth and described. 8th. In combination, the tilting car body, the pivoted sides, the normally upheld latches, the pivoted lever engaging said latches at one end, and provided with adjustable weight at the other, the operating lever A_1 and the main body having stirrups for actuating said lever, as set forth and described. 9th. In combination, the tilting car body, the normally upheld latches, the operating lever A_1 provided with bends a, a, a , and the main body having stirrups with cross-bar to operate on said bend in the operating lever as the car body is tilted, as set forth. 10th. In combination, the tilting car body, the flanged and perforated cylinder bolted thereto, the spring within said cylinder, the eye bolts and nut in said cylinder and engaging said spring, the main car body and chains connecting said main body with the said eye-bolts, as set forth.

No. 26,225. Band saw Machine.*(Scierie à lame sans fins.)*

Joseph W. Maxwell, Louisville, Ky., U. S., 14th March, 1887; 5 years.

Claim.—1st. The combination of a frame A, a band saw D mounted thereon, two beams I_1, I_2 fitted to slide transversely in the frame-rollers U journalled upon the said beams to roll against a face of the saw-blade, and a beam I_3 loosely pivoted at its ends to the beams I_1, I_2 , and pivoted centrally, substantially as shown and described. 2nd. The combination of a frame A, a bearing G fitted to slide vertically therein, a pulley C journalled in the said bearing, a band saw D mounted on the pulley C, and a lower pulley, two beams I_1, I_2 fitted to slide transversely in the main frame, rollers U journalled on the said beams to roll against a face of the band saw, a beam I_3 loosely pivoted at its ends to the beams I_1, I_2 , a lever P pivoted to the main frame, and connected at one end with the middle of the beam I_3 , and connected at the other end with the bearing G by means of a rod Q, substantially as specified. 3rd. The combination of a saw machine

frame, two band saws, each mounted on a pair of pulleys, and each pair of pulleys journalled on a pair of shafts independently of the other, two pairs of beams fitted to slide transversely in the frame, a roller journalled on each sliding beam, two of the said rollers fitted to roll against the inner face of each saw, and means for traversing the beams while the saws are at work, substantially as shown and described, whereby the adjacent portions of the two saws may be caused to approach each other and recede while at work, as specified. 4th. The combination of a band saw D, one or more rollers U journalled to roll against a side of the saw, a hanger E hung concentric with each roller, a saw-guide K attached to the hanger in a line tangent to the roller, and means for securing the hanger in position, substantially as shown and described. 5th. The combination of the roller U journalled on a frame provided with a segmental slot L, the hanger E hung concentrically with the said roller and provided with a binding screw L fitted to engage the said slot, and a saw-guide K attached to the hanger in a line tangent to the said rollers, substantially as shown and described. 6th. The combination of a saw frame A, a band saw mounted thereon, a beam I_1 fitted to slide transversely therein, a roller U journalled on the said beam, a hanger E hung concentrically with the said roller, a saw-guide K secured to the hanger, a beam I_3 pivoted at one end to the beams I_1, I_2 , and pivoted at the other end in a fixed relation to the saw, and a rod E_1 pivoted at one end to the hanger E, and at the other end to the beam I_3 , on the principle of the parallel ruler, substantially as shown and described. 7th. The combination of a band saw D, a roller U journalled on a portion fitted to slide transversely to the saw, a hanger E journalled concentric with the said roller, a roller U journalled in the hanger on the opposite side of the saw to the roller U, and means for securing the hanger at the required angle, substantially as shown and described. 8th. The combination of the band saw D mounted on a frame, a portion I_1 fitted to slide transversely in the frame, a roller U journalled on the sliding portion, a hanger E hung upon the sliding portion concentric with the said roller, another roller U_1 journalled upon the hanger on the opposite side of the saw to the roller U, a beam I_3 pivoted to the portion I_1 at one end, and pivoted at the other end in a fixed relation to the saw, and the rod E_1 connecting the beam I_3 , and the hanger E, substantially as shown and described. 9th. The combination of a band saw D mounted on a frame, parallel beams I_1 and I_2 fitted to slide transversely in the frame rollers U, journalled upon the beams I_1 and I_2 , hangers E hung to the said beams, concentric with the said rollers, a beam I_3 loosely pivoted to the beams I_1 and I_2 , hangers E hung to the said beams concentric with the said rollers, a beam I_3 loosely pivoted to the beams I_1 and I_2 , parallel rods E_1 connecting the hangers E with the beams I_3 , and two saw-guides K attached to the two hangers in a line tangent to both rollers U, substantially as shown and described. 10th. The combination of the hangers E provided with a saw-guide and means for being set at different angles, and the roller J journalled on a jointed shaft provided with a binding screw, the said shaft being attached to one of the said hangers, substantially as shown and described. 11th. The combination of a saw-frame, a band saw frame, a band saw mounted on pulleys, one of which is journalled in a bearing fitted to slide vertically in the said frame, a pair of rollers journalled in bars, which are fitted to slide transversely in the said frame and are jointed together on the parallel ruler principle, a lever pivoted to the frame, and connected at one end with the said sliding bars, and at the other end with the said pulley bearing, substantially as shown and described. 12th. The combination of two band saws mounted side by side on pulleys, one in a vertical plane to the rear of the other, beams connected on the parallel ruler principle and fitted to slide transversely in the frame, a roller journalled upon each sliding beam tangent to a saw, a hanger hung upon each sliding beam concentric with each of the said rollers, and an auxiliary roller journalled upon each hanger on the opposite side of the saw to the first named rollers, substantially as shown and described. 13th. The combination of the band saw rollers U, journalled on beams fitted to slide independently of each other, and connected together on the parallel ruler principle, and the T-shaped guide M having pivotal and sliding connections at two points with one of the said sliding beams, substantially as shown and described. 14th. The combination, with a saw-guide, and a sliding support therefor, of a T-shaped guide arranged to have its arms bear against a pattern at each side of the path of the saw, and having sliding connections at the end of its body with the said support for the saw-guide, and pivotal connection to an independent support at a point between the said sliding connection and the cross-arms, substantially as shown and described. 15th. The combination of two band saws mounted side by side in nearly the same plane, a guard for each saw mounted upon beams jointed together on the parallel ruler principle and fitted to slide transversely to the machine, and a link rod M_2 connecting the two jointed guides, substantially as shown and described, whereby two saws may be guided to saw parallel with each other at various inclinations, as specified. 16th. The combination of the T-shaped guide M connected with saw-inclining guides of a sawing machine above the plane of the work, and a series of weighted levers O pivoted to the machine beneath the path of the work, and provided with rollers N, substantially as specified. 17th. The combination of the jointed sash I, the arm A_1 pivoted to the beam I_3 thereof, and provided with a roller A_2 adapted to roll against the beam I_1 , and the T-shaped guide M pivoted centrally to the arm A_1 , and having a pivotal and sliding connection therewith, the beam I_1 , substantially as shown and described.

No. 26,226. Hame Tug. (Mancelle.)

Joseph S. Schott, Burlington, Iowa, U.S., 14th March, 1887; 5 years.

Claim.—1st. In a hame tug, the plate A having on each side a flange with a series of perforations and further provided with loops upon one end for connecting it with the hames, and loops upon the other end to connect it with the harness pad and girth, substantially as and for the purpose herein set forth. 2nd. In a hame tug, a plate A having on each side a flange having a series of perforations, which is sewed through these perforations to a leather backing consisting of a single piece of leather, substantially as and for the purpose herein set forth. 3rd. In a hame tug, a plate A having on each side a flange with a series of perforations, which is sewed through these

perforations to a leather backing, in combination with the hames and pad, and girth of an ordinary harness, substantially as and for the purposes herein set forth.

No. 26,227. Ventilator for Chimneys, etc.

(*Ventilateur pour Cheminées, etc.*)

Joseph C. Richard, Quebec, and Alphonse A. H. Richard, Montreal, Que., 14th March, 1887; 5 years.

Claim.—1st. The combination of the sleeves *a, b, c, d, e, h* and *m* having openings *i, r, s* and *t*, flanges *g* and *k*, cone *o*, and frustum of a cone *f* having opening *a* and *b*, the whole constructed and arranged substantially as described and shown. 2nd. The combination of the sleeves *a, b, c, d, h* and *m*, having openings *i, r* and *s*, flanges *g* and *k*, the whole substantially as described and shown.

No. 26,228. Toboggan. (*Tobaganne.*)

John R. McLaren, jr., Montreal, Que., 14th March, 1887; 5 years.

Claim.—1st. In a toboggan, the combination of the seat, cross-bars on which it rests, and longitudinal slats or frictional surfaces on which said cross-bars are mounted, all as and for the purposes set forth. 2nd. In a toboggan, the combination of the seat, side rods secured to same, cross-bars projecting beyond sides of seat, and slats or frictional surfaces, all as herein set forth and for the purposes described. 3rd. In a toboggan, the combination, with the seat and cross-bars, of clamps *D* secured to both, and having eyes *d* formed in them to carry the side rods, all as herein set forth.

No. 26,229. Cultivator. (*Scarificateur.*)

James F. Smith, Danville, Ill., U.S., 14th March, 1887; 5 years.

Claim.—1st. In a cultivator of the class described, the combination of the axle-frame provided with the sprocket wheel *F*, the casting *H*, the pole *B*, the casting *B* and the grooved castings *E*, adapted and arranged to support and operate the seed-dropping mechanism, substantially as shown and described. 2nd. The combination of the axle *A*, the wheels *A*, the castings *B* having the arms *B*, the castings *H*, the pole *B* secured thereto, the braces *B*, the divided casting *C* the pivotally-connected castings *D*, the shovel-beams *J*, the castings *L*, the bolts *L*, *a, d* the bar *K*, substantially as specified. 3rd. The combination of the axle *A*, wheels *A*, castings *C*, pivoted castings *D*, beams *J*, bar *K*, and the lifting-lever *L* having the bar *L*, and the pawl and sector, substantially as specified. 4th. In a cultivator of the class described, an axle having loosely mounted castings thereon for coupling therewith, the shovel-beams and pole, and the braces of the pole, and provided with a sprocket, in combination with the castings *B, B, B*, a depending arm, as *G*, pivoted to the brace-arms, as at *G*, provided with a breaking-pin on the forward extension of said arm, as at *G*, and adapted substantially as described, for the connection of a stalk-cutting mechanism, substantially as and for the purposes set forth. 5th. The combination of the axle *A*, provided with the sprocket *F*, the casting *B* provided with the arm *B*, and the arm *G*, and adapted to operate the chain *G*, and a stalk-cutting mechanism, substantially as specified. 6th. In a cultivator of the class described, the casting *L* having recesses *L* at each end, and a lug *L*, in combination with the shovel-beams, and with the shovel-beam connecting bar *K*, substantially as specified. 7th. The combination, with the shovel-beam connecting bar *K*, of the herein-described casting connecting the shovel-beams, and means, and means for removably connecting said casting to the bar, substantially as specified. 8th. The combination, with the bar *K* and shovel-beams *J*, of the casting *L* provided with the recesses *L*, *L*, the perforations *L*, and the lug *L*, of the perforated bar *K*, and the locking-lever *N*, substantially as specified.

No. 26,230. Horse Collar. (*Collier de cheval.*)

William G. Ruge, (Co-inventor with Otto Evertz) and Oscar H. Guether, Washington, D.C., U.S., 14th March, 1887; 5 years.

Claim.—A horse-collar or like article having a casing or cover, a resilient facing of granulated cork, and a firm or stable backing of straw or like material, substantially as and for the purposes specified.

No. 26,231. Harvester. (*Moissonneuse.*)

Abel Hoover, (Co-inventor with Robert Brown), and William Gamble, Miamisburg, Ohio, U.S., 14th March, 1887; 5 years.

Claim.—1st. The combination, with the main frame of a harvester of a binding frame having bracket *6* and bolts *d*, a slotted plate *L* on a sill of the main frame and a rear support *14*, substantially as described. 2nd. The combination, with the harvester main frame and a binder frame composed of the supporting frame *12, 34*, and a supplemental frame *K*, the latter having shoes which may move longitudinally on the sills of the supporting-frame, of a connection *6*, and bolt *7* securing the binder frame to a sill of the main frame, a slotted guide on the latter, a bolt on the binder-frame engaging with the guide, and a support *14* on the main frame, substantially as described. 3rd. In combination with a harvester, the binder-frame made of two sections, one forming the supporting frame detachable connected to the harvester frame, and the other adjustably mounted upon the said supporting frame, substantially as specified. 4th. In combination with the main frame of a harvester, a binder frame connected thereto by a longitudinally moving hinge, and a support or bracket on the main frame adapted to support the free end of the binder frame, so that said binder-frame may be slipped backward and then moved around on its hinge and be supported by the bracket upon the main frame, substantially as specified. 5th. In combination, with a harvester, a binder frame mounted upon and pivoted to the harvester by a longitudinally-adjustable hinge connection, substantially as specified. 6th. In combination, with a harvester, a binder frame hinged thereto, and adjustably mounted so as to be moved longitudinally on the side, and swing around to the rear of the harvester frame, substantially as specified.

No. 26,232. Thill Coupling.

(*Armon de Limonière.*)

John J. Hahu and James C. Brewster, Oxford, Kas., U. S., 14th March, 1887; 5 years.

Claim.—1st. The herein described improved thill coupling, the parts *E* and *G* connected by a ball and socket joint, and dovetailed portions secured by a spring, substantially as shown and described. 2nd. In a thill coupling, the clip provided with the projecting portions forming a mortise, socket *F*, *F*, having the projecting parts *G*, *G* adapted to slide in the mortise and spring *D*, in combination with the shaft iron provided with enlarged portions and ball bearing portions *e, e*, substantially as shown and described. 3rd. A thill-coupling, the shaft iron and thill clip connected by a ball and socket joint and dovetailed portions, the securing spring *D* and groove *C*, substantially as shown and described. 4th. The herein described improved thill coupling, connected to the shaft iron by a dovetailed joint formed by the parts *B, B*, and *G, G*, and secured by a spring, substantially as shown and described. 5th. In a thill coupling, clip iron *A* having projections *B, B*, to form a mortise, groove *C* and spring *D*, in combination with shaft iron *E*, and screw *e*, *e*, semi-spherical recesses *F, F*, projections *G, G*, and screw *e*, *e*, all substantially as shown and for the purpose specified. 6th. The combination, in a thill coupling, of the socket pieces provided with bevelled projections, and the ball-piece with the tapering dovetail slot, of the clip provided with an angular tapering slot with the tapering bevelled pieces of the sockets, substantially as described. 7th. In a thill coupling, the combination of the clip having angular tapering slot, the eye-piece having ball joints, and the connecting socket pieces, substantially as described. 8th. In a thill coupling, the combination of the clip having angular tapering slot, the eye-piece having ball joints, and the connecting socket pieces provided with the tapering bevelled projections, all arranged to operate as set forth.

No. 26,233. Car Coupler. (*Attelage de Chars.*)

James C. Wicker and James J. Wicker (assignees of Alonzo B. Cooley), Moscow, N.Y., U.S., 14th March, 1887; 5 years.

Claim.—1st. In a car-coupling, in combination, a recessed draw-head provided with a removable catch-piece, a spring-pressed pivoted portion adapted to co-operate with such catch-piece to retain the link within the draw-head, and a spring-pressed plate within the draw-head to hold the link in a horizontal position, substantially as shown and described. 2nd. In a car-coupling, the combination, with the recessed draw-head *b, b*, provided with the removable catch-piece *f, f, f*, *f*, of the pivoted portion *c*, spring *d*, operating lever *h*, substantially as shown and described. 3rd. A car-coupling, consisting of the recessed draw-head *b, b*, the removable catch-piece *f, f, f*, *f*, the pivoted portion *c*, the spring *d*, spring-pressed plate *m*, all combined and operating substantially as shown and described.

No. 26,234. Manufacture of Composite Pavements, Floors, Platforms, Landings, Stair Steps, etc., and Ornamental Work in Imitation Stone and Composition Therefor. (*Fabrication de Pavés, Parquets, Plate-formes, Quais, Marches d'Escaliers, etc., et d'Ouvrages d'Ornement en pierre Artificielle, et Composition pour cet Objet.*)

Peter Stuart, Edinburgh, Scotland, 14th March, 1887; 5 years.

Claim.—1st. Manufacturing composite pavements, platforms, landings and the like, of a layer of broken dry stones, a layer of compressed concrete, and a layer of a composition of broken or cubed granite and cement, with or without the addition of ground or pulverized hermatite, magnetic or black oxide or other iron ore or coloring matter, and with or without strengthening iron rods and wires embedded between the said composition and the concrete, substantially as hereinafter described. 2nd. Laying the composite pavement or other like structure in alternate squares, with the layer of concrete in each alternate square projecting beyond the layer of granolithic composition, as and for the purpose set forth. 3rd. The composition of broken or cubed granite and portland or other cement, with or without the addition of ground or pulverized hermatite, magnetic or black oxide or other iron ore or coloring matter, for the manufacture of pavements, floors, platforms, stair steps, landings and other like structures, and generally for the manufacture of ornamental work in imitation stone. 4th. In the manufacture of pavements, floors, platforms and the like, the dry composition of portland or other cement and sand, with or without the addition of ground or pulverized hermatite magnetic or black oxide or other iron ore or coloring matter floated into the body of the upper layer of broken granite and cement, substantially as hereinbefore described. 5th. A composite pavement or floor surface, formed with circular, square or analogous depressions of equal, or nearly equal diameter in each direction, and with even or level margin on the pavement surface, to adapt them to operate in the manner described. 6th. The combination of a layer of concrete, the rods *b* laid on the margin of the layer forming a gauging frame, and a succeeding layer of composition of granolithic within said frame *b* and level therewith.

No. 26,235. Car Wheel. (*Roue de Char.*)

Samuel W. Tanner, Philadelphia, Penn., U. S., 15th March, 1887; 5 years.

Claim.—1st. In combination, a wheel loosely journalled, having a projecting hub, and an axle having a flange, said hub having a portion of its outer end made of greater internal diameter than the remainder of the hub. 2nd. In combination, a wheel loosely journalled having a projecting hub *B*, an axle *C*, having a flange *D*, said flange having a portion of its surface *d* cut away, and the cap *F*, substan-

tially as and for the purpose described. 3rd. In combination, the roller H, threaded surface J, threaded collar K having projection k, substantially as and for the purpose described. 4th. In combination, threaded collar, having a portion of its surface cut out and threaded, and a cap M, substantially as and for the purpose described. 5th. In combination, the axle C, loosely journalled wheel A, rollers H retained in position between the bearing surface of wheel A and hub B by slides h, threaded end J, threaded collar K, having projection K, said collar having a portion of its surface removed and threaded and cap M, substantially as and for the purpose described.

No. 26,236. Combined Latch and Lock.

(*Loquet-Serrure.*)

John C. Craig, Fenelon Falls, Ont., 15th March, 1887; 5 years.

Claim.—1st. In a latch and lock, the combination of the bolt 10 having a slot in the heel, gravitating elbow lever 6, having one arm engaging with the slot, and spindle tappet 5 lifting the lever, as set forth. 2nd. In a latch and lock, the combination of the bolt 10 having a T-shaped slot in the heel, gravitating elbow lever 6, having one arm engaging with said slot, and a knob spindle tappet 5 to lift the lever, as set forth, whereby the bolt in a normal position is projected to a locking position by a key when the lever is raised to an abnormal position by the tappet, as set forth. 3rd. In a latch and lock, the combination, with the lock case having key-hole 12, post 3 and pins 4 and 16, of the bolt 10, having openings 11, 13 and slot 9 in the heel, tumblers 15 pivoted to the bolt gravitating lever 6 and tappet 5, as set forth.

No. 26,237. Corn Planter. (*Semoir à Blé d'Inde.*)

Merritt E. Doolittle, Troy, Ohio, U.S., 15th March, 1887; 5 years.

Claim.—1st. The combination of the main frame of a corn planter, a hand lever mounted thereon, a foot-lever connected to the runner-frame and mounted on the main frame concentrically with, but independently of the hand-lever, and a spring-bolt reciprocating in a guide-way parallel to the axis of the levers, and provided with a toe-piece for detachably connecting the hand and foot levers when desired, substantially as hereinbefore set forth. 2nd. The combination of the main frame of a corn planter, a shaft casting pivoted thereon, a hand-lever rigidly fixed to the shaft and provided with a rack and detent for holding it in position, and a foot-lever pivoted on the shaft and connected by a link on the runner-frame, with a bolt mounted in a guideway in the shaft-casting to lock the foot-lever to said casting when desired, substantially as hereinbefore set forth. 3rd. The combination of a shaft-casting D, formed with a bolt chamber or recess D1, a spring-projected bolt lying in the chamber, and a foot-lever pivoted on the shaft and provided with an apertured quadrant or guard lying in the path of the bolt, which quadrant checks the outward movement of the bolt until the aperture is presented to it, substantially as hereinbefore set forth. 4th. The shaft-casting D, formed with a bolt chamber D, having an inclined end, portion or face, a bolt and suitable ejecting spring within the chamber, any a toe-piece or latch secured to the outer end of said bolt, which, bearing against the inclined face is adapted by partial rotation to retract the bolt against the thrust of its spring, substantially as hereinbefore set forth. 5th. The combination of the main frame of a corn planter, a foot-lever pivoted thereon and connected to the runner frame, and an adjustable gauge mounted on the seat standard and lying in the path of the foot-lever to limit its movement, and through it the depth to which the runners may penetrate or cut the soil, substantially as hereinbefore set forth. 6th. The combination of the main frame of a corn planter, a slotted seat support or bow, a foot-lever pivoted on the main frame, and having one of its extensions playing in the slot in the seat bow, and a depth-gauge which crosses said slot, and may be clamped at any point along the bow to limit the movement of the foot-lever, substantially as and for the purpose hereinbefore set forth.

No. 26,238. Drier for Drying Paper, etc.

(*Sécherie à Papier, etc.*)

Alexander S. Grosset, Kingsley Falls, Que., 15th March, 1887; 5 years.

Claim.—1st. As an improved article of manufacture, a drier formed of a stationary inner system of heater pipes, and an outer revolving cylinder, constructed and arranged substantially as described. 2nd. The combination of the shaft B, having bores b, b1, system of heater pipes E, F, and H, and revolving outer cylinder M, the whole substantially as described.

No. 26,239. Device for Cleaning Brushes and Combs. (*Appareil pour Nettoyer les brosses et les Peignes.*)

James O. Brookbank, Driftwood, Penn., U. S., 15th March, 1887; 5 years.

Claim.—The instrument for cleaning combs and brushes, consisting of the handle A, the bristles B applied to one end of said handle, and the angular elastic teeth C secured to the opposite end, as described and shown.

No. 26,240. Double Slide Valve.

(*Tiroir à Deux Orifices.*)

John Booth, Indianapolis, Ind., U.S., 15th March, 1887; 5 years.

Claim.—1st. A double slide valve, wherein the exhaust cavities in each part are connected by an opening extending from one to the other, substantially as shown and described. 2nd. A double slide valve, each portion having removable tops resting upon packing carried on a packing frame, supported by springs or legs in grooves in the walls of the valve, with an opening connecting the exhaust cavities of each, all combined, substantially as described. 3rd. A double slide valve, wherein the front portion is held by a yoke secured about

the frame of the valve, and connected with the valve rod r, substantially as shown and described.

No. 26,241. Slide Valve. (*Tiroir.*)

John Booth, Indianapolis, Ind., U.S., 15th March, 1887; 5 years.

Claim.—1st. A slide valve of a steam engine, provided with a groove in the walls between the outside and the exhaust cavity, a top frame or ring resting in such groove upon any suitable packing material, a packing ring also resting in such groove, supported upon springs above the steam ports which admit the steam, all combined substantially as described. 2nd. A slide valve of a steam engine, provided with a groove in the walls between the outside and the exhaust cavity, a top frame or ring resting in such groove upon suitable packing material, a packing ring also resting in such groove and supported by suitable legs above the steam ports which admit the steam, all combined substantially as described. 3rd. The steam chest c h having the top t, the cylinder cy having steam ports s, p, exhaust port e, p, the valve v having the enlarged exhaust cavity e, c, the groove g formed in the walls of such valve with steam ports r connected therewith, the equalizing frame e, g, resting upon the packing p supported by the packing frame p, f, upon legs l or spring s within such groove, all combined substantially as shown and described.

No. 26,242. Caliper and Divider.

(*Campas d'Epaisseur et à Diviser.*)

Joshua Stephens, Chicopee Falls, Mass., U. S., 15th March, 1887; 5 years.

Claim.—1st. The combination, with the legs of a pair of dividers, calipers, or other analogous instruments, formed with outside hooks a, a, of a C-spring, the ends of which tend to press outwardly, and are engaged by said hooks, substantially as set forth. 2nd. The combination, with legs A, A, having hooks a, a, on their outer sides, forming sockets c, c, of spring B, its ends formed with rounded ribs or beads b, b, entering said sockets, substantially as set forth. 3rd. The combination of legs A, A, having hooks a, a, on their outer sides, spring B having their ends formed to engage said hooks, and notched at e and a screw d entering said notch, substantially as set forth.

No. 26,243. Sewer Ventilating Furnace.

(*Fourneau d'aération des égouts.*)

Lyman L. Benson and William T. Stilwell, Kalamazoo, Mich., U.S., 15th March, 1887; 5 years.

Claim.—1st. In a system of destroying and expelling sewer gases by means of a furnace and flame therein, a furnace in which a suitable number of burners are located on such a plane as will leave a narrow space between the top inclosure of the furnace and the top of the flame, one end of this space at one of the ends of its furnace beyond the flame having an exit immediately into the draft pipe connecting the furnace at this end, in connection with the entrance passageway separated from the furnace interior, and leading from the sewer to the top of the opposite end of the furnace, and thence laterally opening into this end of the space beneath the top inclosure, substantially as set forth.

No. 26,244. Gas Making Apparatus.

(*Appareil à gaz.*)

Henry W. Brooks, Philadelphia, Penn., U. S., 15th March, 1887; 5 years.

Claim.—1st. In an apparatus for converting hydrocarbons into a fixed gas, retorts having a serpentine passage and provided with disintegrators which fill the passage at the place of their situation, and so compel passage through them of all the material under treatment, substantially as described. 2nd. In a gas apparatus, the pipe-like retort made in sections, joined at angles to each other and provided with the disintegrators, substantially as described. 3rd. In a gas apparatus, the retort made in sections, joined at angles to each other, and provided with distributors or disintegrators filling the passage at the place of their situation, and consisting of cylinders screwed into the sections and having perforations in their sides, substantially as described. 4th. In a gas apparatus, the combination of the oil and steam inlet pipes, joined and provided with an injector at their point of juncture, branch pipes, retorts united to the gas pipes, and consisting of sections placed at angles to each other and provided with disintegrators and the return pipes, substantially as described. 5th. In a gas apparatus, a tubular or pipe-like retort, provided with internal distributing cylinders having perforated sides, substantially as described. 6th. In a gas apparatus, a retort provided with cylinders partly filling the interior, and provided with perforation in their sides, whereby the substances to be converted into gas are presented to the heated faces of the retorts in a finely divided state.

No. 26,245. Halter. (*Licou.*)

Charles B. Thummel, Axtell, Ks., U.S., 15th March, 1887; 5 years.

Claim.—1st. A halter comprising leather nose and crown pieces, and a single retaining and securing rope doubled on itself, and having its two portions interwoven at the several points of intersection, substantially as set forth. 2nd. The combination, in a halter, of the leather nose and crown pieces having loops at their ends, and the retaining and securing rope doubled upon itself, and having its two portions passed through the loops at the ends of the nose and crown pieces, and intersecting and being interwoven with themselves back of or below the said loops, substantially as set forth. 3rd. The herein-described and shown halter, comprising the leather nose and crown pieces, and the rope H doubled upon itself forming the loop A, the two portions of the rope being then made to cross each other, and being interwoven at the points of intersection to a point B from which they diverge, and are passed through loops at the ends of the nose and crown pieces, and then passed from the loose piece through the loop A, formed by doubling the rope below which the two portions are interwoven to form the tie portion of the halter, as set forth.

No. 26,246. Self-waiting Dining Table.*(Table-buffet.)*

John Conmee, Toronto, Ont., 15th March, 1887; 5 years.

Claim.—1st. The combination of a table, and rotary waiter F having removable sides H for the display of advertisements, as set forth. 2nd. The combination of a table leg having a longitudinal groove D, and the rail having a tenon C to enter the groove in the legs, as set forth.

No. 26,247. Wood-Planing Machine.*(Machine à raboter le bois.)*

The Glen Cove Machine Company, (assignee of William H. Gray), Brooklyn, N. Y., U. S., 16th March, 1887; 5 years.

Claim.—In a wood-planing machine, the combination, with the side cutter-heads and spindles, and the head-plates, above which the cutter-heads operate, of top guides F supported at their rear ends upon the head-plates, and extending forward to or beyond the centre of the side cutter-heads, substantially as and for the purpose herein described.

No. 26,248. Mop Wringer. (Essoreuse de torchon.)

John J. Reilly, New York, (assignee of Daniel Lynch, Minerva), N. Y., U. S., 16th March, 1887; 5 years.

Claim.—1st. The combination of the plate or board A, having an outer supporting or steadying leg A', and constructed to stand upon and to partly enter down within a tub or bucket, the stationary inwardly inclining set or row of fingers C, the backwardly and forwardly moving row of oppositely-inclining fingers C' arranged to enter at their forward ends or portions in between the stationary fingers and mechanism, substantially as described, for opening and closing said movable row of fingers relatively to the stationary row thereof, essentially as specified. 2nd. A mop-wringer having duplicate rows of horizontal fingers, set inclining in relation with each other, as described, and the one of which row is movable toward and from and into and out of the other, the upper fingers of each row set flaring laterally, substantially as and for the purpose herein set forth.

No. 26,249. Rotary Engine for Steam, Water or Compressed Air Engines, and for Pumps, Meters, etc. (Machine rotative pour machines à vapeur, à eau, ou à air comprimé, et pour pompes, compteurs, etc.)

François Hallé and François X. Drolet, Quebec, Que., 16th March, 1887; 5 years.

Réclame.—La combinaison de la bouche D, des cylindres K, des rainures circulaires L, avec les rouleaux M, et tel que décrit et pour les fins indiquées.

No. 26,250. Harrow Tooth Coupling.*(Joint de dent de herse.)*

Simkin W. Farnham, Canard, N. S., 16th March, 1887; 5 years.

Claim.—1st. The above described knuckle or coupling for attaching harrow spring teeth to harrow frames, consisting of the body A provided with the wings E, the stock-piece D hinged to said body and having the lugs *ex* and *fx*, and the rod *dx* passing through holes in the wings E, and lugs *ex* and *fx*, substantially as shown and described. 2nd. The combination of the above described knuckle, consisting of the body A having the perforated segmental wings E, the hinged stock-piece D, and perforated lugs *ex* and *fx*, with the spring-tooth C, substantially as shown and described. 3rd. The combination of the body A having the perforated wings E, with the spring-tooth C pivoted to said body, and held between the wings E by pins passing through the holes *ex*, one above and the other below the tooth, substantially as herein described.

No. 26,251. Plough. (Charrue.)

Garland B. St. John, Kalamazoo, Mich., U. S., 16th March, 1887; 5 years.

Claim.—1st. In combination with an ordinary handle plough, an inclined guide-wheel adapted to run in the corner of the furrow in advance of the share and gauge, the depth and width of the succeeding furrow, and a rear carrying-wheel adapted to run on the unploughed land opposite the mould-board and gauge the depth of the furrow at that point, both of said wheels being secured to the plough by flexible arms, substantially as and for the purpose set forth. 2nd. A plough having a disk-broadside forward gauge-wheel, and rear carrying-wheel supported on flexible arms, substantially as and for the purpose set forth. 3rd. In combination with a plough having a disk-landside, a gauge and carry-wheel set opposite to the mould-board, so as to run on the unploughed land, with means for vertical adjustment, and having a seat set partially over it, substantially as and for the purpose set forth.

No. 26,252. Double-Tree. (Volée d'arrière.)

Eli R. Parker, Wyoming, Ont., 16th March, 1887; 5 years.

Claim.—The combination of sheave blocks, chain and hammer strap clevis, substantially as and for the purposes hereinbefore set forth.

No. 26,253. Fence Machine. (Machine à clôture.)

George G. Stacy, Boston, Mass., (assignee of William Van Horn, Piqua, Ohio), U. S., 16th March, 1887; 5 years.

Claim.—1st. In a fence machine, a pair of rotary gauge wheels, each having around its periphery a plurality of gauge arms, and on its outer face of one or both thereof, a corresponding number of

ratchet teeth, a spring pawl to engage said teeth, and mechanism connected with said pawl for releasing it from engagement with the ratchet teeth, substantially as and for the purpose set forth. 2nd. The combination of the rotary gauge wheels, a shaft carrying said gauge wheels, and having bearings in adjustable end supports, and means, substantially as described, for securing said end supports in position. 3rd. The combination of a pair of rotary gauge wheels, for gauging the distance between the pickets, adjustable boxes for supporting and adjusting said gauge wheels in position relatively to the twisters, and a spring pawl for engaging said wheels and holding them in operative position, and means substantially as described, for disengaging said pawl from the gauge wheel with which it engages. 4th. A table for supporting the pickets while being wired, having wire-receiving grooves or recesses and slots, in combination with the gauge wheels, and the picket beaters or pushers arranged to operate in the slots, substantially as described. 5th. The combination of the slotted picket-support or table, the rotary gauge wheels, a shaft carrying said wheels, adjustable boxes for supporting and adjusting said gauge wheels and their shaft in position, the beater arms and mechanism, substantially as described, for releasing said gauge wheels and for actuating the beater arms, as and for the purpose set forth. 6th. The combination of a pair of rotary gauge wheels for gauging the distance between the pickets, picket beaters, and mechanism, substantially as described, for adjustably supporting and for releasing said gauge wheels and for actuating said picket beaters or pushers.

No. 26,254. Hot Air Furnace. (Calorifère à air.)

Nathaniel A. Boynton, New York, N. Y., U. S., 16th March, 1887; 5 years.

Claim.—1st. The combination, in a hot-air furnace, of an ash-chamber, a fuel-chamber, a combustion-chamber, a rear direct and indirect draft furnace-section, and lower and upper flues extending from the combustion-chamber to the rear furnace-section, the lower flue being connected to the combustion-chamber at a point immediately above the upper extremity of the fire-pot, and being of uniform capacity from end to end, and the upper flue being contracted at its point of discharge into the rear furnace-section, as described. 2nd. In a hot-air furnace, the combination, of a front section, a rear section, an upper flue which extends from the front section to the rear section, and is contracted at its rear extremity, and a lower flue which extends from the front section to the rear section and is of uniform capacity from end to end, as described. 3rd. In a hot-air furnace, an ash-chamber, a fuel-chamber above the ash-chamber, a combustion-chamber above the fuel-chamber, a supply opening in the front wall of the combustion-chamber, a rear driving flue section, and a series of flues connected to the rear wall of the combustion-chamber, at a point opposite the fuel supply opening and directly above the upper extremity of the fuel-chamber and extending to the rear driving flue section, all in combination as described. 4th. In a hot-air furnace, the combination of a fuel-chamber, a combustion-chamber which has opposite the door thereof, and immediately above the upper extremity of the fuel-chamber a series of flue openings, a series of flues extending rearwardly from the flue-openings, and a rear furnace-section which receives the rear extremity of the flues, such furnace-section being provided with a direct draft pipe, a diving-flue, a rising-flue, and an exit-opening, as described. 5th. In a hot-air furnace, an ash-chamber, a fuel-chamber, a combustion-chamber, a fuel supply opening in the front wall of the combustion-chamber, a rear furnace-section and a series of flues which are contracted at their rear extremity extending from the rear of the combustion-chamber at a point opposite the fuel-supply openings to the front of the rear furnace-section, in combination, as described. 6th. A hot-air furnace which consists essentially of a front-section which is composed of an ash-chamber, a fuel-chamber and a combustion-chamber which is provided with a door or opening in the front thereof, and with a series of flue-openings in the rear thereof directly opposite to or coincident with the door opening, a rear section embracing a front diving-flue and a rear rising-flue, and having a series of flue-openings in the front wall thereof, and an exit-opening, and a series of flues, each of which extends in line with the door or opening from the front section to the rear section of the furnace, as described. 7th. The combination, with the fuel-chamber, the combustion-chamber and the radiating-flues of a hot-air furnace, of a rear furnace-section which is provided in its front wall with a series of openings which correspond in dimensions with such radiating-flues, and which is also provided with a series of openings, the capacity of which is less than that of the radiating-flues, as described. 8th. The combination with the front fuel-chamber section, the rear direct draft and diving and rising-flue section, the intermediate flues, and the hot-air casing of the transverse partition D₁, D₂ and D₃, substantially as and for the purposes specified. 9th. The combination with a hot-air furnace, which embraces a front section, a rear section and a series of flues which connect the two sections, of a casing which incloses the sections and the flues, and which is divided by transverse partitions into several transverse air-warming compartments which, when the furnace is operated, are of unequal temperatures, as and for the purpose described.

No. 26,255. Apparatus for Producing Multiple Copies of Writings, Drawings, etc. (Appareil pour produire des Copies Multiples d'écrits, de dessins, etc.)

Otto Leim, Paris, France, 16th March, 1887; 5 years.

Claim.—1st. In an apparatus for producing multiple copies of writings, drawings, or similar work, the combination of the frames *a* and *d* with the panel *e* provided with inclined blocks *y*, the rollers *h* and the bars *b* having the slots *h*, all substantially as above described. 2nd. The rollers *h* whose ends are arranged to rest and be movable within slots or openings in fixed supports, in combination with inclined blocks *y*, substantially as and for the purpose specified. 3rd. The ink tray *k*, firmly secured to the sliding panel *ix*, in combination with the hooks *ix*, as and for the purpose above set forth.

No. 26,256. Musical Toy. (*Musique-jouet.*)

Giles J. Holbrook, Jersey, N.J., U.S., 16th March, 1887; 5 years.

Claim.—In an axially-rotating toy, the combination of musical reeds, with hoods placed in such manner as to throw the air on said reeds when the toy is revolved, substantially as and for the purpose herein set forth.

No. 26,257. Snow Roader.*(Grattoir de chemin de Neige.)*

William S. Johnstone, Hawkesbury, Ont., 16th March, 1887; 5 years.

Claim.—1st. In a machine for levelling cahots in snow roads, the combination of the frame A having or horizontal knife D, and scraper I to cut and fill, as set forth, and a sled M to press the fill compactly, as set forth. 2nd. A snow roader consisting of the sides A, A, connected by draft bar B, knife D and scrapers I, and a sled M in rear of the scraper, as set forth for the purpose described. 3rd. The combination, in a snow roader, of a frame A having a horizontal knife D and scraper L and carried upon a sled M, whereby prominences are planed off by the knife, and hollows filled by the scraper and the filling pressed by the sled, as set forth.

No. 26,258. Production of Colored Photographs. (*Production de Photographies Coloriées.*)

Louis J. H. Cellier, Asnières, France, 16th March, 1887; 5 years.

Claim.—The process of producing colored photographic pictures, by the superposition of a carbon print on or over a colored paper, all substantially as described.

No. 26,259. Contrivance for Communicating Pressure to Ensilage, etc. (*Appareil pour Presser les Silos, etc.*)

Cuthbert G. Johnson, Oakwood Croft, Eng., 16th March, 1887; 5 years.

Claim.—1st. In apparatus for compressing ensilage and other material, the pressure gear consisting of combined rack bar, pawl bearing slide and pawl bearing lever, substantially as described and shown in the drawings. 2nd. In apparatus for compressing ensilage and other material, the pressure gear consisting of combined rack drum, pawl bearing framing, and pawl bearing lever, substantially as described and shown in the drawings. 3rd. In presses for ensilage and other material, the use, in combination with rack bars and slides or rack drums, and framing constructed and arranged for use substantially as shown and described, of a detachable pawl bearing lever, in the manner and for the purpose set forth.

No. 26,260. Furnace for Cremation.*(Foyer de Crémation.)*

William Mann, Montreal, Que., 16th March, 1887; 5 years.

Claim.—The combination of the furnaces a, situated as described within the chamber l, and having the tops *n* forming the space at, as described, within the chamber l whereby an eddy is formed with chamber l having openings o and p fire-bars m, and ash-juts *n* having openings q, the whole constructed and arranged substantially as described and shown.

No. 26,261. Press for the Punching, Shearing, etc., of Metals. (*Presse pour Découper, Cisailier, etc., les Métaux.*)

Alexander Beaudry, Boston, Mass., U.S., 16th March, 1887; 5 years.

Claim.—1st. The combination, with the ram mounted in guides of the coupling slide mounted in guides in said ram, means for imparting a reciprocating motion to said slide, and means for compelling the ram to partake of the upward movement of the said slide, as set forth. 2nd. The combination, with the ram mounted in guides, of the coupling-slide mounted in said ram, means for imparting a reciprocating movement to said coupling slide, and the plate J mounted to slide in the ram and provided with shoulders, as set forth, whereby said slide may be disengaged from the ram. 3rd. The combination, with the ram mounted in guides, of the coupling-slide mounted in guides in same, means for imparting a reciprocating movement to said slide, means for compelling the ram to partake of the upward movement of said slide, and means for counterbalancing said ram and its attachment, substantially as set forth. 4th. The combination of the ram F mounted in guides in the coupling-slide I mounted in guides in the said ram, the crank and connecting-rod, the plate J constructed and mounted on the ram, as shown, and the spring L arranged to counterbalance the said ram and its attachments, substantially as set forth. 5th. The combination, with the ram mounted in guides, of the coupling-slide mounted in said ram, means for imparting a reciprocating movement to said slide, means for counterbalancing said ram and its attachments, the transverse slide K mounted in and carried by said ram, and provided with an inclined face and means for imparting an in-and-out movement to said slide K, substantially as set forth. 6th. The combination, with the ram mounted in guides, of the coupling-slide mounted in said ram, means for imparting a reciprocating movement to said slide, means for compelling the ram to partake of the upward movement of said coupling-slide, the transverse slide K mounted in and carried by said ram, and provided with an inclined face and means for imparting an in-and-out movement to slide K, substantially as set forth. 7th. The combination, with the ram and the slide K mounted therein, of the mechanism for imparting an in-and-out movement to said slide comprising the shaft m, its crank n, the pin of said crank engaging a groove or slot q in said slide, the chain or band p the treadle N con-

nected to said chain p and means for retracting said slide K, substantially as set forth. 8th. The combination, with the ram and the beveled slide K mounted therein, said ram being furnished with a rearward provision M that extends behind said slide to form a limiting stop of the horizontally mounted shaft m, its crank n, the pin of which engages a slot or groove o in said slide, the retracting spring q, the chain p¹ connecting said chain with said treadle n, all arranged to operate substantially as set forth. 9th. The combination, with the machine provided with a recessed A, of the wedge l arranged in said recess, the screw 2 for operating said wedge, the shoe 3 mounted on said wedge means for securing said shoe in its proper position when adjusted, the tool-holder mounted in a way formed in said shoe and means for securing said holder in its position when properly adjusted, substantially as set forth.

No. 26,262. Railway Car. (*Char de Chemin de Fer.*)

Mann's Boudoir Car Company, (Assignee of William D. Mann,) New York, N.Y., U.S., 16th March, 1887; 5 years.

Claim.—1st. In a boudoir or other car, a partition for separating the state-room from the corridor having one or more sliding panels in the lower portion, and rattan or other open-work above the crown-molding, as and for the purpose set forth. 2nd. In a boudoir or other car provided with state rooms and a longitudinal corridor, a partition for separating said state-rooms and corridor provided with one or more sliding panels, as and for the purpose set forth. 3rd. A boudoir sleeping-car having a side corridor adjoining boudoirs fitted with beds athwart the car, a connecting-door in the partition between the said boudoirs, and one or more movable panels in the partition between the couch portions and the side corridor for throwing the whole open for day use, as described.

No. 26,263. Harvester and Binder.*(Moissonneuse-Lieuse.)*

The Massey Manufacturing Company, Toronto, Ont., (Assignee of William N. Whiteley and William Bayley, Springfield, Ohio, U.S., 16th March, 1887; 5 years.

Claim.—1st. In a rear-cut grain-binding harvester, the combination of the main wheel, frame supported by the main driving wheel, gearing extending direct therefrom to the cutting apparatus which is supported on a frame hinged to said main wheel-frame on the line of the cutters, suitable binding mechanism rigidly connected to the frame supporting the cutting apparatus, and located in rear of the hinge and suitable gearing for driving said binding mechanism mounted upon the same frame, but located in advance of the axle of the main driving-wheel for the purpose of balancing the frame carrying the binder and grain-carrier on the hinge between said frame and the wheel-frame. 2nd. In a rear-cut grain-binding harvester, the combination of the main wheel frame supported by the main driving wheel, direct gearing therefrom located on the stubble side of and in advance of the centre of said main driving wheel, and suitable binding mechanism mounted on a separate frame located on the stubble side and in rear of said main wheel frame, and the center of the main driving-wheel for the purpose of balancing and operating the machine, as set forth. 3rd. In a grain-binding harvester, the cutting apparatus grain-carrier and binder mechanism located in rear of the main driving-wheel, and a counter-shaft driven medially by said wheel extending to a point in front thereof, in combination with suitable mechanism for driving the carrier and binder located in front of the periphery of the main wheel on its outside, and suitable means for communicating motion from the said counter shaft to binder driving mechanism located on the outer side of the wheel. 4th. In a rear cut grain binding harvester, having the frame carrying the cutting apparatus hinged to the main wheel frame on the line of cut, the combination of the binding mechanism located in rear of said hinge, and the gearing for driving the binding devices located on an extension of said frame in front of said hinge, the extension and gearing being advanced forward by the side of the main wheel to counterbalance the weight of the binding mechanism and frame upon said hinge, as set forth. 5th. In a rear cut grain binding harvester, the combination of a main wheel frame supported by the main driving wheel, a hinged tongue controlled by a lever attachment to the main wheel-frame, a frame supporting the cutting apparatus hinged to said main driving wheel frame, and supporting also the binding mechanism in rear of and outside of the plane of said main driving wheel gearing for said binder located in front of the axis of the main wheel and a controlling lever for said hinged frame supporting the cutting apparatus and the binder with segment and latch, all are arranged substantially as set forth, for the purpose of better balancing raising lowering and tilting the frame carrying the cutters and binder. 6th. In a rear cut grain binding harvester, the tongue hinged to the front end of the main wheel frame, and supporting the cutting apparatus hinged to the rear end of said main wheel frame, in combination with the gear driven by the master wheel located upon said main wheel frame on the stubble side of and in advance of the centre of said main wheel, and the binder mechanism located outside of and in rear of said wheel, and suitable means for separately controlling said binding and cutting apparatus supporting frame, for the purpose of balancing and raising lowering and tilting the machine by the driver from this seat or stand.

No. 26,264. Oil Can. (*Bidon à Huile.*)

William D. Gibson and Charles P. Parish, (Assignees of John B. Herboldshimer,) Chicago, Ill., U.S. 16th March 1887; 5 years.

Claim.—1st. The combination of an oil can, a pump located within the same and a discharge tube, a part of said discharge-tube being made of a lap of the metal of the pump-cylinder, substantially as and for the purpose set forth. 2nd. The combination of an oil-can, a pump placed within the same the cylinder thereof being of less height than the height of the can, a discharge tube formed along the side of the pump-cylinder, the side of said cylinder forming a part of the discharge tube, a piece of circular tubing soldered to said discharge

tube, and extending from the top of the pump-cylinder to the top of the can, and a slip-tube nozzle accurately fitting said tubing and adjustable within the same, substantially as and for the purpose set forth. 3rd. In an oil can, the combination of the pump-cylinder C, of a less height than the height of the can, the discharge tube I formed of thin sheet metal and lying along and in close contact with the side of the cylinder, the piece of circular tubing O soldered to said discharge tube at the top of the pump-cylinder, and extending therefrom to the top of the can, and the slip-tube L closely fitting into said tubing O, substantially as and for the purpose set forth. 4th. The combination of an oil can, a pump located within the same, the cylinder thereof being of a less height than the height of the can, a discharge tube formed for the length of the pump-cylinder of a lap metal of the cylinder, and above the cylinder of a piece of round tubing soldered upon the end of that part of the discharge-tube lying along the side of the pump cylinder, and extending thence to the top of the oil can, and a slip tube accurately fitting the upper portion of the discharge tube, substantially as and for the purpose set forth.

No. 26,265. Stamp Cancellor.

(*Timbre à maculer.*)

Daniel J. Harding, Roy McDonald and Paul Cain, Louisville, Ky., U.S., 16th March, 1887; 5 years.

Claim.—1st. In a stamp-cancellor, the combination, with the boxing having the oblique cam grooves and guide apertures, of the independent bearing head, its guide rods and springs surrounding said rods, the cutter having stem projection C engaging said cam grooves, and the stops respectively for the box bearing and the head bearing, substantially as specified. 2nd. In a stamp-cancellor, the combination, with the bearing head carrying a rotary cutter, centrally located of the adjustable annular guard, having oblique slots and the screws, whereby said annular guard is secured to the bearing head, substantially as specified.

No. 26,266. Refrigerator for Cars, etc.

(*Glacière pour chars, etc.*)

Andrew J. Chase and William B. H. Daws, Boston, Mass., U.S., 16th March, 1887; 5 years.

Claim.—1st. In a refrigerator, in combination with the ice tank, a frost sheet, substantially as described. 2nd. In a refrigerator, in combination with the ice tanks, a pickle tank, substantially as described. 3rd. In a refrigerator, a pickle tank provided with an overflow tube and a discharge orifice, substantially as described. 4th. In a refrigerator in combination, an ice tank having a perforated bottom, a pickle tank having an overflow tube and discharge orifice, and a pickle trough, substantially as described. 5th. In combination, in a refrigerator, ice tanks provided with a frost sheet and pickle tanks, substantially as described.

No. 26,267. Doffer Cleaner for Carding Machines.

(*Nettoyeur de déchargeur de cardes.*)

The Bebb Cleaner Company, (assignee of George Bebb, Indianapolis, Ind., U.S., 16th March, 1887; 5 years.

Claim.—1st. The combination of the doffer, a revolving cleaner, a revolving stripper and supports, and operating means therefor, substantially as set forth. 2nd. The combination of the doffer, a stripping roller having card clothing supports, whereby said roller may be held close to the doffer, operating means for said stripping roller, a cleaner and supports and operating means therefor, whereby said cleaner may be actuated into contact with the doffer and the stripping roller, substantially as and for the purposes specified. 3rd. In combination with the doffer of a carding machine, a stripping roller having card clothing adjustable bearings for said roller, a cleaner movable into contact with said doffer and roller and supports, and operating means for said doffer and roller and supports, and operating means for said cleaner and stripping roller, substantially as set forth. 4th. The combination, with a cleaner, of a revolving stripper, and a trough arranged adjacent to said stripper, and a dividing plate arranged between the receptacle of said trough and the revolving stripper, substantially as set forth. 5th. The combination of the standard having slots 3 and 4, the brackets B and C, bolts securing said brackets to the standard, and passed through slots 3 and 4, and the cleaner and stripper supported on said brackets B and C, substantially as set forth. 6th. The herein-described improved doffer cleaner for carding machines, consisting of the standard having slots 3 and 4, the brackets B and C having slots b and c, bolts securing the brackets to the standard and passing through the slots 3 and 4, the carriers D and E having ears d and e, bolts whereby to secure said carriers adjustable to the bracket, the boxes G and K, adjustable connections between said boxes and the ears d and e, and the cleaner and stripper journaled in such boxes, substantially as set forth. 7th. The improved doffer cleaning attachment for carding machines, comprising the standards A having slots 3, the brackets C adapted to support the stripper, the brackets B, bearings for the boxes G supported in said brackets B, bolts connecting brackets B, with the standards and passed through slots 3, whereby said brackets B may be held at different points of standards A, the boxes G, the shaft journaled in said boxes and provided with the cleaner, the stripper and connections between said stripper and bracket C, substantially as set forth. 8th. The combination of the standards A, the brackets B supported thereby, the boxes G, the shaft journaled in said boxes and carrying the cleaner, the set-screws connecting the boxes G adjustably with the bracket B, the stripper, and means for adjustably supporting said stripper, substantially as described. 9th. The combination of the standards having brackets C, provided with slots, the brackets B supported by said standards and having bearings for the shaft, the shaft journaled in said bearings, the cleaner supported and carried by said shaft, the stripper bolts whereby said stripper is supported adjustably on the brackets C, and means for operating the cleaner, substantially as set forth.

No. 26,268. Feed Water Heater.

(*Réchauffeur d'eau d'alimentation.*)

The Feed Water Heater Company, Portland, Me., (assignee of Henry Fairbanks, St. Johnsbury, Vt.), U. S., 16th March, 1887; 5 years.

Claim.—1st. The herein-described feed water heater for locomotives consisting of the case A, provided with heads B, C, forming a steam chamber, inlet-passages D, E leading to said chamber and adapted to communicate with the respective exhaust-passages of the locomotive to receive the exhaust steam, combined with a manifold F within said chamber having an inlet G leading thereto to receive the water, a series of tubes J in a horizontal plane leading from said manifold F, each tube of said series terminating at the opposite end of the chamber in return bend K, a second like series of tubes L each leading from one of the said return bends K, and substantially parallel with the first series J, said tubes L each terminating in a return bend M, a third like series of tubes N leading from said return-bends M toward the opposite end of the cylinder, and substantially parallel with the series L, the said tubes N each terminating in a return-bend O, a fourth series of tubes P leading from the said return-bends O to a second manifold R, an exit S from said manifold R, and an air chamber I in connection with the first or entrance manifold F and within the chamber, substantially as described. 2nd. The combination of the case A, its two heads B, C closing the ends of the case, and forming a steam-chamber inlets D, E to said chamber, adapted to receive the exhaust-steam from the respective exhaust-passages, the two manifolds F, R arranged within said chamber, the manifold F provided with an inlet G to receive water, and the manifold R with an exit S through which the water escapes, an air chamber I in connection with said manifold F, four parallel horizontal series of tubes, the first leading from the manifold F to return-bends into the second series, and the second series through return-bends into the third series, and the third series through return-bends into the fourth series, and the fourth series into the second manifold R, lugs b, b on the one head B arranged to set between corresponding projections a on the return-bends at that end, and the air chamber constructed with the lugs d adapted to rest between projections a, a on the return-bends of the central series at that end, substantially as described. 3rd. In a steam-heater consisting of a chamber adapted to receive steam as a heating medium, a series of water-conducting tubes within said chamber, with an inlet and an outlet therefrom for the supply and discharge of water, an air chamber in connection with the inlet-passage, and a valve arranged in said inlet-passage and between the pump and said air chambers, opening inward from the atmosphere outside and so as to admit air into said passage, substantially as described. 4th. In a steam-heater consisting of a chamber adapted to receive steam as a heating medium, a series of water-conducting tubes within said chamber, with an inlet and outlet therefrom for the supply and discharge of water, an air chamber in connection with the inlet-passage, and a valve arranged in said inlet-passage between the pump and said air chamber and opening inward from the atmosphere outside, and so as to admit air into said passage with a device, substantially such as described, to mechanically open said valve and thereby open a passage from the inlet passages to the atmosphere, substantially as described.

No. 26,269. Watch Case.

(*Boîte de montre.*)

Charles F. Morrill, Boston, Mass., U.S., 17th March, 1887; 5 years.

Claim.—1st. A watch case in which the risers or seats for the external parts are arranged in sets, each set comprising two or more risers, formed to engage simultaneously with two or more corresponding risers or snap edges on one of the external parts or covers of the case. 2nd. In a watch case, the combination of a movement-holding portion having a set or plurality of risers, arranged to engage simultaneously with a corresponding series of snap edges on a single cover or hinged portion, and a cover or hinged portion having a plurality of risers or snap edges adapted to simultaneously engage the said set or risers on the movement-holding portion, as set forth. 3rd. A movement-holding portion having a set or plurality of risers for each cover or hinged portion, combined with the covers or hinged portions formed when closed, each having a set or plurality of snap edges formed to engage simultaneously with the corresponding set of risers on the movement-holding portion. 4th. A watch case, in which the back and front covers are hinged together, and formed to entirely enclose the movement-holding portion, one or both of said covers being provided with a plurality of risers or snap edges, formed to snap onto corresponding risers on the movement-holding portion, as set forth. 5th. A watch case back, bezel, or cover having a plurality of risers or snap edges, adapted to simultaneously engage corresponding risers on a movement-holding portion, as set forth.

No. 26,270. Key Bottom for Pianos, etc.

(*Sommier de Clavier de Piano, etc.*)

Salvatore La Grassa, New York, N. Y., U. S., 17th March, 1887; 5 years.

Claim.—1st. A key-bottom for pianos or similar instruments, formed of metal and provided with stiffening ribs or flanges, substantially as herein described. 2nd. A cast-metal key-bottom for pianos or similar instruments, consisting of a plate having upon its underside longitudinal strengthening ribs, substantially as herein described. 3rd. A cast-metal key-bottom for pianos or similar instruments, consisting of a plate having upon its underside longitudinal and transverse strengthening-ribs, substantially as herein described. 4th. A cast-metal key-bottom for pianos or similar instruments, having a flat upper surface for the support of a key-frame, and having strengthening-ribs upon its underside, substantially as herein described. 5th. A cast-metal key-bottom for pianos or similar instruments, having its upper surface flat and continuous unbroken in those portions on which the key-frame is to rest, and having openings between such portions, and strengthening-ribs on its underside, substantially as herein described. 6th. The cast-metal key-bottom A, having a flat upper surface with opening a, and panels C covering the openings and having on the underside strengthening-ribs a, a, substantially as herein described.

No. 26,271. Process by which Paper may be made to Adhere to Metal. (*Procédé pour faire adhérer le papier au métal.*)

William Stone, (assignee of David Macdonald), Toronto, Ont., 17th March, 1887; 5 years.

Claim.—The within-described process consisting in making the metal plate porous, painting the surface thus prepared with a coating of fine varnish, partially drying the same, placing the sheet of paper on the prepared surface, and submitting the same to pressure, substantially in the manner and for the purposes hereinbefore described.

No. 26,272. Cloth and Loom for Weaving It. (*Tissu et Métier pour le Tisser.*)

Robert Williams and William Bowker, West Medford, Mass., U. S., 17th March, 1887; 5 years.

Claim.—1st. The new or improved article of manufacture or cloth, substantially as described, woven with a weft carried or laid in a looped form through each decussation of the warps, and held in place by a separate or selvage thread running at one edge of the fabric through the several loops of the weft, as set forth. 2nd. The combination, with a loom provided with means of laying a weft in a looped state, as described, in each decussation of the warps, of mechanism for introducing into or through each loop of the weft a separate and continuous selvage thread at one edge of the fabric, as specified. 3rd. The combination, with the loom lay provided with three races, as described, of the two shuttles having hooks and mechanism for operating them, the said shuttles, as explained, the two sets of drop boxes having mechanism for operating them, as set forth, and the selvage thread shuttle having mechanism for operating it, as specified, to cause it to lay through the series of loops of the weft at one edge of the fabric woven a binding thread separate from the weft, all being substantially as represented. 4th. The combination of the loom lay having races, and mechanism for operating it, as described, two shuttles having hooks and mechanism for driving them, the said shuttles, as explained, two sets of drop boxes having mechanism for operating them, as set forth, and the selvage thread shuttle having mechanism for operating it, as specified, to cause it to lay through the series of loops of the weft at one edge of the fabric, a binding thread separate from the weft, with the weft-thread take-up mechanism essentially and to operate as represented, such take-up mechanism consisting of the rods y and x , their support bars b , the rod a , lever c , connecting rod e , lever f and grooved cam g , the said cam being fixed on the shaft h , and all being arranged and to operate substantially as set forth. 5th. The combination of the loom lay, having races and mechanism for operating it, as described, two shuttles having hooks, and mechanism for driving such shuttles, as explained, two sets of drop boxes having mechanism for operating them, as set forth, and the selvage thread shuttle having mechanism for operating it, as explained, to cause it to introduce through the series of loops of the weft at one edge of the fabric, a binding thread separate from the weft, with the weft thread tension mechanism, substantially as described, consisting of the plate v and the presser w , and its mechanism for pressing it up to, and withdrawing it from the said plate, as stated, and consisting of the shank k , arm m , tube n , rod o , collar p , spring q , step r , lever s and cam t , all arranged and to operate as represented. 6th. The combination, with the weft thread tension mechanism, consisting of the plate v and the presser w , and its mechanism for forcing it up to, and withdrawing it from the said plate, and consisting of the shank k , arm m , tube n , rod o , collar p , spring q , step r , lever s and cam t , of the mechanism for intermittently revolving the presser to prevent it from being worn in one place only by the weft in passing across it, such mechanism consisting of the worm gear w , worm e , shaft w , ratchet wheel z , impelling pawl y , spring a and retaining pawl a applied and arranged essentially as represented. 7th. The combination of the pair of guide or auxiliary tension fingers b , substantially as described, with the weft take-up and tension mechanisms, essentially as described, and with the loom lay having races and mechanism for operating it, as explained, the two shuttles having hooks and mechanisms for impelling them, the said shuttles through the races, as set forth, two sets of drop boxes having mechanism for operating them, as specified, and the selvage thread shuttle having mechanism for operating it, as explained, to cause it to introduce through the series of loops of weft at one edge of the fabric, a bidding thread separate from the weft, all being substantially as represented. 8th. The combination of the set of jacks c , provided with mechanism for operating them, substantially as described, with the loom lay having races, and mechanism for operating it, as explained, the two shuttles provided with hooks and having mechanism for operating them, the said shuttles with respect to the said races, as set forth, two sets of drop boxes having mechanism for operating them, as specified, and the selvage thread shuttle having mechanism for operating it, as explained, to cause it to introduce through the series of loops of weft at one edge of the fabric, a binding thread separate from the weft, all being essentially as set forth. 9th. The combination of the transferrer N , provided with mechanism for operating it, as described, with the selvage thread shuttle O and its carrier p and supporter d , having mechanisms for operating them, essentially as set forth. 10th. The combination of the two shafts n and z , having arms a , a projecting from them, as explained, with the lay having races and mechanism for operating it, as set forth, the two shuttles having hooks and mechanism for impelling said shuttles through the said races, as explained, the binding thread shuttle having mechanism for operating it, as described, the two sets of drop boxes having mechanism for operating them, as explained, the arm y extending upward from the said shafts, the vertical bar d , the arm c , and spring f , all being substantially as represented.

No. 26,273. Combined Adjustable Reflector and Hood Shade for Lamps. (*Réverbère Abat-Jour de Lampe.*)

Richard M. Wanser, Hamilton, Ont., 17th March, 1887; 5 years.

Claim.—1st. In combination with a lamp, a double reflector and shade, consisting of the reflector and shade hood e , reflector g and ring d , all constructed to operate substantially as and for the purpose specified. 2nd. The combination of the hood e , reflector g , ring d and neck piece f , substantially as and for the purpose specified. 3rd. In a lamp, the combination of a reflector g and ring d , substantially as and for the purpose specified. 4th. In a lamp, the combination of a ring d and hood shade e ,

No. 26,274. Apparatus for Recording and Delineating the Direction and Gradients of a Road. (*Appareil pour Enregistrer et Tracer le Cours et les Rampes et Pentes d'un Chemin.*)

Auguste E. D. Floran de Villepique, Paris, France, 17th March, 1887; 15 years.

Claim.—1st. In an apparatus for delineating or recording the direction of a road, the combination of mechanism consisting of a rotating table S , a double sector K gearing with the axis thereof and with a fixed rack, and pivoted upon the axis, of a pinion I carried by a slide J , and in gear with worms on parallel shafts rotated independently by the two hind wheels of the vehicle, the pinion and sector receiving a movement of translation in consequence of, and proportional to the differential motion of the two worms, the said mechanism being combined and operating substantially as herein described, so that the table is caused to retain always the same position in space, for the purpose specified. 2nd. In an apparatus for delineating or recording the direction of a road, the combination of mechanism, consisting of a pencil carrier I , receiving a movement of translation from a leading screw-shaft O , the mitre and worm and chain gear, whereby the leading screw is rotated from the axis of the guiding wheel, substantially as specified. 3rd. In an apparatus for recording or delineating the gradients of a road, the combination of mechanism, consisting of a drum V receiving continuous rotary motion from the travelling wheel, as described, and a pencil carrier connected by crossed flexible bands to a drum having a float attached and immersed in mercury, the pencil carrier receiving vertical motion in consequence of the relative motion of the mercury and float, and of the casing containing the same, substantially as specified. 4th. An apparatus for recording or delineating the direction and gradients of the road, consisting in the combination with a three-wheeled vehicle and with each other, of the several mechanisms herein described, namely: the mechanism consisting of the table S , the double sector gearing therewith, and with a fixed rack, the slide carrying the double sector, and a pinion in gear with independent worms, operated by different wheels, as described, the mechanism consisting of the pencil carrier arranged with regard to the table, and operated by a screw shaft driven from the swivelling guiding wheel through the chain worm, and mitre gear, as described, and the mechanism, consisting of the drum V operated by worm gear from the screw shaft, and the pencil carrier operated by a drum and float immersed in mercury, as described, all substantially as shown in the drawings.

No. 26,275. Tennis Net. (*Rets de Jeu de Paume.*)

John P. Helfenstein, Jr., Webster Groves, Mo., U. S., 17th March, 1887; 5 years.

Claim.—1st. A tennis-net, provided at the top with a hem through which the supporting rope is passed, the net being drawn taut and secured to said rope, as described. 2nd. A tennis-net having a detachable connection, with an over-head support in addition to the connections, which serve to stretch the net endwise, substantially as described. 3rd. A tennis net detachably suspended from a strip, which, in turn, is strung loosely upon a cord or wire that is stretched upon the tennis poles, substantially as described. 4th. A tennis net suspended from a strip, which, in turn, is strung upon a cord or wire that is stretched upon the tennis-poles, substantially as described. 5th. The combination of the poles A , the net B , the cord or wire C , the strip D , the lacing E , the cords b , b and the fastenings F , F , as described.

No. 26,276. Combined Glass Cutter Frame and Square. (*Châssis Equerre de Tailleur de Verre.*)

William Boisen, Luzerne, Iowa, U.S., 17th March, 1887; 5 years.

Claim.—1st. A combined frame and square for glass-cutter's use, comprising the hinged or pivoted sections, and means for locking the sections at an angle to each other, substantially as described for the purpose set forth. 2nd. A combined frame and square, comprising the hinged or pivoted sections adjustable at an angle to one another, one section having a horizontal slot and the other a fixed ledge or abutment, arranged in substantially the same horizontal plane as the slot, as and for the purpose set forth. 3rd. A combined frame and square, comprising the sections A , having the longitudinal slots, the section B hinged to the section A , to be adjustable at varying angles thereto, and having a fixed ledge or abutment arranged to one side of the upper surface g thereof, and mechanism, substantially such as herein described, for locking the sections at an angle to each other, substantially as described for the purpose set forth. 4th. A combined frame and square, comprising the slotted section A , having the resilient cushion, the section B hinged to a section A , and having the fixed abutment and the resilient cushions arranged to one side of and beneath the abutment, and mechanism for locking the sections at an angle to each other, substantially as described for the purpose set forth. 5th. A combined frame and square, comprising the hinged or pivoted sections, adapted to be folded upon one another, and a locking device for detachably connecting the sections together when in their folded position, substantially as described for the purpose set forth. 6th. A combined frame and square, comprising the section A , having the longitudinal slot and the fixed eyes or staples arranged beneath the plane of the slot, the section B hinged to the section A and having the fixed abutment and the hook

connected at one end to the section B, and adapted to take into one of the fixed eyes on the section A, substantially as described for the purpose set forth. 7th. A combined frame and square, comprising the slotted section A, having a lining or cushion of resilient material arranged within the slot, and the section B provided with the abutment and the cushion arranged in substantially the same plane as the cushion of the fellow-section A, as and for the purpose set forth.

No. 26,277. Underground Conduit for Electric Conductors. (*Conduit Souterrain pour Conducteurs d'Electricité.*)

James F. Munsie, Chicago, Ill., U.S., 17th March, 1887; 5 years.

Claim.—1st. In a conduit system for electric conductors, a distributing station or well B provided with an inner chamber or sub-well b_3 , the interior of which forms a continuation or extension through said station, of the duct or ducts composing the conduit to which it is connected, and an outer compartment B_1 forming one or more ducts b_1 , which extend to or about the point or points of connection with said station, of the diverging or distributing branches C of the conduit, said duct or ducts b_1 being connected with the duct or ducts formed by or interior of the chamber or sub-well b_3 , each by a suitable opening b_4 formed through the floor of said chamber, all arranged and adapted to be operated substantially as and for the purposes described. 2nd. In a conduit system for electric conductors, a distributing station or well B, provided with an inner chamber or sub-well b_3 , and a compartment B_1 contiguous thereto, provided with a suitable number of distributing ducts b_1 , which are connected with the interior of said chamber or sub-well b_3 , each by an opening or passage b_4 formed through the floor of said chamber or sub-well, the whole being so constructed and arranged that wires or cables passing through the conduit to which said station or well is connected may be entered into said chamber or sub-well b_3 , and thence into and through a distributing duct or ducts b_1 , into a diverging or distributing branch or branches of the system, substantially as described. 3rd. In a conduit system for electric conductors, the transversely located electric light wire ducts B_2 , constructed, arranged and adapted to form part of the stations or wells B, or of the conduit intermediate, said stations or wells, or both, and to be connected with auxiliary electric light wire conduits or service-pipes, substantially as and for the purpose described. 4th. In a conduit system for electric conductors, the combination, with the conduit and the cable, of a removable cable bed for facilitating the insertion and removal of the cable, substantially as described. 5th. In a conduit system for electric conductors, the combination, with the hauling cable provided with means for connecting the electric cable therewith, of a removable roller-bed, substantially as described. 6th. In a conduit system for electric conductors, the combination, with the hauling cable provided with means for connecting the electric cable therewith, of a removable roller-bed and a trailing-rope, substantially as described. 7th. In a conduit system for electric conductors, the combination, with a hauling cable, of a removable roller bed having carrier wheel and independently revolving intermediate spools, substantially as described. 8th. In a conduit system for electric conductors, the combination of a trailing rope Z , electric cable B and removable roller-bed D, of the piece C and hauling cable A , substantially as described. 9th. An underground conduit, provided with a longitudinal chamber E, communicating therewith by an opening of lesser width than the diameter of the cable contained in the conduit, and a rope located within said chamber E, substantially as described. 10th. An underground conduit for electric conductors, having an interior envelope composed of a layer of paper of wire gauze and of asphalt, substantially as described. 11th. In a conduit system for electric wires or cables, the distributing station B having a series of passages a , separated from each other throughout their entire length, and each communicating with, and forming a continuation of a separate electric conduit, separate vertical passages C intersecting said horizontal passages, and each located in a different transverse plane with respect thereto, and transverse conduits leading from the passages C, substantially as and for the purposes set forth. 12th. In a conduit system for electric conductors, the combination, with a conduit A, of a hauling cable located in its upper portion, and a support at the conduit end for maintaining the conductor at the upper portion of the conduit during the hauling operation, substantially as and for the purposes set forth. 13th. In a conduit system for electric conductors, the combination, with the conduit A having the longitudinal chamber a , provided with a continuous longitudinal slot, of a hauling cable located within the chamber a , and provided at its ends with ferrules having eyes for attaching a following rope, and downward projections for attaching the electric conductor, substantially as and for the purposes set forth. 14th. In a conduit system for electric conductors, the combination, with the conduit A having a longitudinal chamber a , provided with a continuous slot, of a hauling cable located within the chamber a , and provided at its opposite ends with ferrules, the friction rollers G, and removable rollers G_2 , substantially as and for the purposes set forth. 15th. An underground provided with a series of ducts or compartments, separated from each other by vertical partitions, a cover resting upon said partitions, and an open space above the cover for the reception of a travelling carriage, substantially as described. 16th. An underground conduit consisting of an outer casing, an interior trough having a series of ducts or compartments provided with a lining of insulating material, a layer of asphalt intermediate between the trough and conduit, and a cover resting upon the partitions, substantially as described. 17th. In an underground conduit provided with a series of ducts or compartments separated from each other by vertical partitions, and a cover resting upon said partitions, said cover being centrally depressed, substantially as described. 18th. An underground conduit provided with a series of ducts or compartments, separated from each other by vertical partitions, and a trackway on opposite sides of said ducts or compartments for the reception of a travelling carriage, substantially as described. 19th. A carriage provided with a pressing roller for forcing the cables within the ducts, substantially as described. 20th. A carriage provided with a pressing roller for forcing the cable within the ducts, and means for varying the degree of pressure, substantially as described.

21st. A carriage provided with a pressing roller for forcing the cable within the ducts, and vertically adjustable with respect to the carriage body, substantially as described. 22nd. A carriage provided with a pressing roller for forcing the cables within the ducts, and with adjustable guide rollers, substantially as described. 23rd. A carriage, provided with an under-running roller, substantially as described. 24th. A carriage provided with spring friction rollers, adapted to bear against the sides of the conduit and prevent abrasion, substantially as described. 25th. A carriage provided with a pressing roller L , guide rollers g , g_1 , k , k_1 , the pressing roller and guide rollers being all adjustable transversely with respect to the carriage, substantially as described.

No. 26,278. Manufacture of Fur Trimmings.

(*Fabrication des garnitures de fourrures.*)

George Coxon, Toronto, Ont., 17th March, 1887; 5 years.

Claim.—The manufacture of fur-trimmings, consisting of strips fur woven with two warps, and divided by a short course of web, substantially as shown and for the purpose specified.

No. 26,279. Washing Machine.

(*Machine à laver.*)

Delphis Coutr, Montreal, Que., 17th March, 1887; 5 years.

Réclame.—Dans une machine à laver, la tige helicoidale I, muni d'un volant S et d'un agitateur T, et une par la plaque P à pointes g , g_1 , au moyen du système de leviers E, F, H, K applique directement au bourrelet perforé M, auquel est fixé la dite plaque P, le tout en combinaison avec la cuve A B C D et la lame resort U, tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 26,280. Journal Bearing for Shafts of Heavy Machines. (*Coussinet de tourillon pour arbres de couche.*)

Charles A. Streeter, Franklin Falls, N.H., U.S., 18th March, 1887; 5 years.

Claim.—1st. The combination, with the separable upper and lower sections C and B of the journal bearing, of the gland sections secured between the sections of the bearing, the said gland sections having the water chambers formed therein for the purpose set forth, substantially as described. 2nd. The combination of the separable sections of the journal bearing, with the gland sections adapted to fit between the bearing sections and be covered thereby, the said gland sections having the projecting flanges P at their sides and ends, and thereby forming water chambers between the opposing sides of the gland sections, and the bearing sections, substantially as described. 3rd. The gland sections, for the purposes set forth, having the projecting flanges P at their sides and ends, the transverse flange R extending nearly from one side to the other, thus leaving an opening S between the ends of the gland at one side thereof, and the openings near the ends of the gland sections on the side opposite the opening S for the attachment of water pipes, substantially as described. 4th. The combination, with a journal bearing, of the gland formed of two semi-cylindrical sections having the flanges on their sides and ends, to fit against the inner sides of the journal box, and thereby form water chambers between the glands and the journal box, for the purpose set forth substantially as described. 5th. The combination of the upper and lower separable sections of the journal bearing, the former being provided with the opening G for lubricating oil, with the gland sections secured between the sections of the journal bearing, and in which the shaft is adapted to turn, the said gland sections having water chambers formed between them and the opposing sides of the journal bearing, one of the said gland sections having an offset R in which an opening P₁ is made to communicate with the opening G and convey oil from the latter to the shaft, substantially as described.

No. 26,281. Motor for Elevating Water from Wells. (*Moteur pour élever l'eau des puits.*)

James K. Sample, Los Angeles, Cal., U.S., 18th March, 1887; 5 years.

Claim.—1st. The combination of the water wheel having the crank handle F, the pump having the pipe to discharge water on the wheel, the shaft geared to the wheel and having the crank M, the pump rod having the rack teeth, the shaft S having the pinion meshing with the rack teeth of the pump rod, and the rod Z attached to crank M, and having the rack teeth Z_1 , and the shaft X geared to shaft S and having the pinion with which the toothed rod Z engages, whereby the pump rod will reciprocate when the water wheel is rotated, substantially as described. 2nd. The combination of the water wheel having the crank handle F, the pump having the pipe to discharge water on the wheel, the shaft geared to the latter and having the crank M, the pump rod, the shaft I connected thereto to reciprocate the rod, the shaft X geared to the shaft S and having the pinion X_1 , and the rod Z attached to the crank M, and having the rack teeth meshing with pinion X_2 , substantially as described. 3rd. The combination of the water wheel having the crank handle F, the pump having the pipe to discharge water on to the wheel, the pump rod, the rack shaft S connected thereto to operate the pump rod, the shaft X geared to shaft S, and having the pendulum and the rod Z connecting the water wheel with the shaft X to impart motion from the former to the latter, substantially as described. 4th. The combination of the water wheel having the crank handle F, the pump having the pipe to discharge water on to the wheel, and shaft geared to the latter and having the crank M, the shaft S, the pump rod geared thereto and actuated thereby, the shaft X geared to shaft S and having the pinion X_1 , the drum X_3 , the weighted cord attached to the drum, and the weighted pendulum and the rod Z connected to crank M and having the rack teeth meshing with the pinion X_1 , as described.

No. 26,282. Pumping Apparatus.*(Machine d'épuisement.)*

Peter P. Findlay and Angus McInnes, Donald, B. C., 18th March, 1887; 5 years.

Claim.—1st. In a machine for pumping, the cog-wheels F and G connected together by ring *g* and hook-shaped lugs *h, h*, the circular discs A and T with notches C, C₁ formed to engage with the drivers E and M, which drivers have lips *f* and *k* formed to move on side plates *p* and *q*, said cog-wheels and circular discs being placed on the shaft D, in combination with the racks R, R₁ in the slides S working in proper bearings, said slide having also formed thereon the inclined planes *x* and *y*, in the manner and for the purpose specified. 2nd. In a machine for pumping, the cog wheels F and G connected together by ring *g* and hood-shaped lugs *h, h*, the circular discs A and T, with notches C, C₁ formed thereon to engage with the drivers E and M, which drivers have lips *f* and *k* formed to move on the side plates *p* and *q*, as described, said cog-wheels and circular discs being placed on the shaft D having ratchet wheel N and pawl *n*, in combination with the racks R, R₁ in the slide S working in suitable bearings, said slide having also formed thereon the inclined planes *x* and *y*, for the purpose of throwing said cog-wheels into and out of gear with said circular discs, as specified. 3rd. In a machine for pumping, where the slide only runs half way returning in its motion at the half circumference of the cog-wheel, the cog-wheels F and G connected together by ring *g* and hook-shaped lugs *h, h*, the circular discs A and T with notches C, C₁ formed to engage with the shaft D with or without the ratchet wheel N, and pawl *n*, in combination with the racks R, R₁ in the slide S which works in suitable bearings, having inclined plane *x* and inclined plane W, the latter being formed at the middle of the side as indicated and for the purposes specified. 4th. In a machine for pumping, the combination of two cog-wheels connected together and adapted to revolve in opposite directions around a central shaft, when the machine is operating which shaft has a ratchet wheel and pawl to prevent reflex action, and to which shaft is also rigidly connected two circular discs with notches therein to engage with drivers formed on said cog wheels, said drivers having lips at their ends which engage with the side plates, the teeth in said cog-wheels meshing with the teeth on racks set on different planes in the slide which gives motion to a piston, the said cog-wheels being thrown into and out of gear with the said circular discs at the proper times by means of certain inclined planes formed on said slides in suitable positions, as specified, whereby the drivers on the cog-wheels are enabled to engage and disengage with the notches formed in circular discs, and thus give motion and power alternately to the cog-wheel which drives the slide forward as well as to the cog-wheel which drives the slide on its return stroke, substantially as described.

No. 26,283. Coffin. (Cercueil.)

Charles J. Norden, DeKalb, 18th March, 1887; 5 years.

Claim.—1st. The combination, with a coffin, of downward extensions from the bottom legs, mounted on an axle arbores in said extensions said axle being rectangular and of greater width in one direction than the other, a spring fastened to the bottom of the coffin and provided at each end with rectangular recess of a size to receive the short side of the axle, whereby the legs will be firmly held in their extended position by the shoulders of the recess, and also retained when folded against the bottom of the coffin by the pressure of the springs upon the broad side of the axles, substantially as described and shown. 2nd. The combination, with legs upon an axle arbores in shape, of a spring attached to the bottom of the coffin and having at its end a rectangular recess adapted to receive one side of the said axle, and brace it with the legs in extended position, whereby the legs are held as aforesaid in their extended position or are retained in their unfolded position against the bottom of the coffin by the pressure of the spring upon one of the flat sides of the axle, substantially as described and shown. 3rd. The combination of a coffin having its sides projecting down below the bottom legs, mounted upon axles arbores in said projections, and means for bracing said legs in an extended position, and holding them in their position when folded against the bottom of the coffin, said sides being extended below the plane of the mechanism, when the legs are in their folded position guarding it at such times from injury, substantially as described and shown.

No. 26,284. Steam Generator.*(Générateur de Vapeur.)*

Robert G. Ferguson, Saratoga, N. Y., U.S., 18th March, 1887; 5 years.

Claim.—1st. The combination, with a tubular boiler having one or more series of water circulating pipes arranged exterior to the shell and communicating with the interior of the same, of a horizontal flue chamber, an exterior wall inclosing vertical flue chambers containing said series of pipes, partitions separating said vertical flue chambers and provided with openings at their lower ends, an exit opening to the chimney or smoke pipe, substantially as and for the purposes set forth. 2nd. The combination, with a boiler having a water leg concentric with the fire-chamber, and provided with tubes leading from side fire chamber to a horizontal flue located wholly exterior to the boiler, of one or more series of water circulating pipes which are arranged exterior to the shell of the boiler, and communicate from the water leg to the upper portion of the boiler chamber, and are contained within vertical flues which are between the shell of the boiler and on outer casing and lead from the horizontal flue to an exit, as set forth.

No. 26,285. Mower and Reaper Guard.*(Garde de Faucheuse-Moissonneuse.)*

James H. Tollitt, Port Clinton, Ohio, U.S., 15th March, 1887; 5 years.

Claim.—1st. A guard or finger for a reaper or mower, consisting of

a triangular body having the acute angle projecting forward, and having a rearwardly extending upper guard plate formed with side edge bevelled or rounded from the upper side, and with rearwardly pointing serrations extending over the bevelled or rounded edges to the upper side of the plate, as and for the purpose shown and set forth. 2nd. A guard or finger for a reaper or mower, consisting of a triangular body having the acute angle projecting forward, and having the underside of the body bevelled toward the side edges, which are formed into serrated cutting edges, and provided with a rearwardly extending guard plate formed with side edges bevelled or rounded from the upper side, and formed with serrations pointing rearward and extending over the bevelled or rounded edges to the top of the guard plate, as and for the purpose shown and set forth.

No. 26,286. Desk for Telephone use.*(Pupitre à l'usage des Téléphones.)*

Charles A. Patterson and John E. Patterson, Detroit, Mich., U.S., 19th March, 1887; 5 years.

Claim.—1st. In combination with the brackets E, E, the hinged arms D, D, the lugs L, rod F, desk top B, and memorandum sheet C, the guide wire W with a spring *d*, as and for the purposes herein set forth. 2nd. In combination, with the brackets E, E and top B, the arms D, D with the spur *i*, and the socket *f* and rod H and lug L, substantially as and for the purposes herein set forth.

No. 26,287. Railway Snow Plow.*(Charrue à Neige de Chemin de fer.)*

Charles M. Culbertson, Sr., Newnam, and Robert Bines, Chicago, Ill., U.S., 19th March, 1887; 5 years.

Claim.—1st. The combination, with the car A provided with a suitable supporting block removably mounted thereon, of the scraper mounted in suitable bearings on the supporting block, substantially as and for the purposes specified. 2nd. The combination of the car A provided with removable posts F, of the supporting block E held in position by the said post, and the scraper mounted in suitable bearings on the supporting block, substantially as and for the purposes specified. 3rd. The combination, with the car A of the supporting block E, the scraper C attached to a shaft mounted in suitable bearings therein, and the lever G detachably connected to the said shaft, to permit the scraper to be turned back on the car, as described, substantially as and for the purposes specified.

No. 26,288. Pulp Beating Engine.*(Cylindre Broyeur de Papeterie.)*

Frank J. Marshall, Turner's Falls, Mass., U.S., 19th March, 1887; 15 years.

Claim.—1st. The combination of revolving and stationary disks or plates, for grinding paper pulp, constructed and arranged substantially as described. 2nd. The fixed and revolving disks for grinding paper pulp, in combination with the conical shaped engine in common use, constructed and arranged substantially as described. 3rd. The worm and gear in combination with the screw threaded collars, for moving the bed-plate back and forth, substantially as constructed and described. 4th. The fixed and revolving disks, in combination with gear and worm for advancing or with drawing the fixed disk or bed-plate in its action with the revolving disk constructed as described. 5th. The combination of the circular fixed and revolving disks secured as described, with the worm gear and conical shaped engine, constructed as described.

No. 26,289. Railway Switch.*(Aiguille de Chemin de Fer.)*

Charles E. Laroque and George Winter, Olga, D.T., U.S., 19th March, 1887; 5 years.

Claim.—1st. The frogs C having the two rail points *f* and *f*, arranged as shown and pivoted to the bed flanges *e*, which are formed on or attached to the switch rails, as shown and for the purpose set forth. 2nd. The guard rail B, provided with the sloping flange *a*, as shown and for the purpose set forth. 3rd. The combination of the bed flange *e* having the frog C, pivoted to it with tie-rod *g* arm *i* and shunting-bar D, substantially as shown and for the purpose set forth.

No. 26,290. Tooth Brush. (Brosse à Dents.)

George F. Hoosey, Utica, N. Y., and Edward H. Horsey, Chicago, Ill., U.S., 19th March, 1887; 5 years.

Claim.—1st. A tooth brush consisting of a handle A, receptacle B, ring C and pad D inserted removably in the receptacle, as set forth. 2nd. A tooth brush pad-holder consisting of a receptacle B, and handle A, substantially as set forth. 3rd. A tooth brush consisting of a handle A, secured to a pad-holding receptacle B and a, pad D inserted in the receptacle, as set forth. 4th. A tooth brush having a removable brushing pad D of india rubber, felt, or other elastic, or other elastic, or pliable material, the rubbing surface serrated or roughened, as set forth. 5th. A tooth brush pad composed of a shaped block of india rubber, felt, or other elastic, or pliable material, having the rubbing surface serrated or roughened, as set forth.

No. 26,291. Soap. (Savon.)

Albert A. Walker, Jamestown, N. Y., (Assignee of Margaret E. Walker, Sandy Lake, Penn.) U.S., 19th March, 1887; 5 years.

Claim.—The compound herein described consisting of beef-tallow, water, rosin, potash sal-soda, pearline, borax, sulphate of soda, salts of tartar, camphre ammonia, benzine, turpentine and oil of sassafras, substantially as specified.

No. 26,292. Process and Apparatus for Obtaining Spelter and other Products by the Treatment of Zinc Ores. (*Procédé et Appareil pour Obtenir les Produits de Zinc et autres par le Traitement des Minerais de Zinc.*)

Paget Higgs, London, Eng., 21st March, 1887; 5 years.

Claim.—1st. The process herein described, consisting in the electro metallurgical reduction of zinc ore, and the utilization of the resulting chlorine for the manufacture of bleaching compounds, substantially as described. 2nd. The process herein set forth for the reduction of zinc ore, consisting in subjecting said ore mingled with retort coke, and a solution of salt to electrical action in a chamber having a conducting false bottom, said chamber being separated from an anode chamber containing metallic plates by a porous diaphragm passing the resulting chloride into a tower and dropping finely divided lime through the ascending current of gas, substantially as described. 3rd. The apparatus described for the reduction of zinc ore, consisting of the anode and cathode chambers separated by a porous diaphragm, metallic plates arranged in the former, a false bottom of triangular carbon bars in the latter, and a hood upon each other, that on the cathode chamber being connected to a chlorinating tower, substantially as described. 4th. The chlorinating tower having a reciprocating sieve at top, and a tube connected to a chlorine reservoir and entering the tower between top and bottom, whereby the lime may be showered down through the calcined body of gas flowing into the tower, substantially as described. 5th. The chlorinating chamber or tray having parallel plates of metal, in connection with the opposite poles of a battery of high tension, and an entrance and exit for a current of chlorine gas, substantially as described. 6th. The combination, with an electrolysis apparatus for the electrolysis of zinc chlorides in solution, with a chlorinating apparatus directly connected to the anode chamber of the electrolytic apparatus, and means for introducing finely divided lime into the chlorinating chamber, substantially as described.

No. 26,293. Medical Compound for the Cure or Mitigation of all Diseases of the Skin. (*Composition Médicinale pour les Maladies Cutanées.*)

William B. Ferguson, Rochester, N.Y., U.S., 27th March, 1887; 5 years.

Claim.—The fluid or solid compound composed of thistle root, cranberry root, elderberry root, wild turnip, leaves of the thorne apple, and buds of the balm of gilead, as described for the the purposes herein set forth.

No. 26,294. Steeping Flax and other Textile Matters. (*Rouissage du lin et autres Matières Textiles.*)

Paul Parsy, Lille, France, 21st March, 1887; 5 years.

Claim.—In the treatment of flax and other textile matters, the process of steeping the matter in hot water for a short time, and subsequently replacing the water with steam at 150 degrees centigrade or thereabouts, and leaving this steam in contact with the matter for about one hour.

No. 26,295. Square Hole Boring Machine. (*Machine à Mortaiser.*)

Abraham E. Lake and John C. Lake, Big Prairie, Ohio, U.S., 21st March, 1887; 5 years.

Claim.—1st. The combination, with a mortising cutter head having journaled bearings or longitudinal axle, provided with a cutting device having parallel side cutting edges and parallel end cutters, of the operating device consisting of opposite reciprocating bars a connected with a cutter head to oscillate the same upon said journaled bearings or axle, substantially as and for the purpose specified. 2nd. The combination, with a mortising cutter head having journal bearings or longitudinal axle device, consisting of two independent blades set in opposite sides of the cutter head to cut upwardly, only said blades provided with end cutters to cut across the grain, substantially as set forth. 3rd. In combination, with a stock A and oscillating cutter head B, the shaving catchers R connected with bars d_{11} having an up and down movement along the stock above the cutters, corresponding with the swing of the cutter head, substantially as and for the purpose specified. 4th. In combination, with a stock A and oscillating cutter head B, the sliding bars d_{11} provided with a series of catches d , having an up and down movement along the stock above the cutters, substantially as and for the purpose specified. 5th. In combination, with a sliding frame O, gear wheel W having teeth or lugs J, hinged rack H having worm gear j_{11} of the feed wheel L, provided with bevelled and oblique gear j on its upper surface, and worm threads j_1 upon its rim, said gear and thread fitted to co-act with the lugs J and worm gear j_{11} respectively, substantially as and for the purpose specified. 6th. The combination, in a square hole boring machine, with the slide stock J, of a feed wheel I pivoted in the frame O and having a worm thread upon its periphery, and bevelled cogs upon its upper surfaces standing obliquely to the diameter thereof, a rack H hinged to the stationary frame F and measuring with said worm wheel, a wheel W mounted upon the main shaft having upon its rim at intervals teeth or lugs to mesh with the bevelled cogs upon the pivoted feed wheel, whereby an intermittent movement is communicated to said sliding frame, substantially as set forth.

No. 26,296. Chill for Casting Car Wheels, etc. (*Coquille pour couler les roues des chars, etc.*)

John B. Whitney, Radnor, Penn., U.S., 21st March, 1887; 5 years.

Claim.—1st. A chill consisting of a hollow ring having one or more uninterrupted annular chambers, substantially as described. 2nd. A chill consisting of a hollow ring, formed in one continuous casting with its chilling surface divided into section, substantially as set forth. 3rd. A chill consisting of a hollow ring formed by circular upper and lower plates, connected with each other by an inner ring and an outer ring, substantially as set forth. 4th. A chill consisting of an upper and circular plate, and a lower circular plate connected with each other by an inner ring forming the chilling surface, and by an outer series of columns or webs, substantially as set forth. 5th. A chill consisting of an upper and lower plate, either or both perforated at intervals, and connected with each other by an inner ring forming the chilling surface, and by an outer ring or by a series of supports or columns, substantially as set forth. 6th. A chill consisting of a hollow ring formed in one continuous casting, with its inner ring or chilling surface divided into sections, and the outer ring projecting beyond the upper and lower faces of the chill, substantially as set forth. 7th. A chill consisting of an upper circular continuous plate, and a lower circular continuous plate, connected with each other by an inner ring forming the chilling surface, and by an outer series of columns or webs forming open air spaces, substantially as set forth. 8th. A chill consisting of an upper and lower plate perforated at intervals, and connected with each other by a continuous inner ring forming the chilling surface, and by an outer support, substantially as set forth.

No. 26,297. Forced Draft Lamp.

(*Lampe à courant forcé.*)

Robert Hitchcock, Watertown, N.Y., U.S., 21st March, 1887; 5 years.

Claim.—1st. The combination of the vase, the jacketed works for producing a forced draft permanently secured in the bottom thereof, the reservoir and its cover forming between them an air-passage, said reservoir and cover being supported removably at the top of said vase, substantially as described. 2nd. The combination, with the vase inclosing the works for producing a forced draft, and provided near the top with an internal shoulder of the oil reservoir, and cover supported by said shoulder in such position that the top of said vase projects slightly above the edge of said cover, substantially as described. 3rd. The combination of the vase, the jacketed or inclosed movement for producing a forced draft permanently set in the vase, the bottom of the vase having openings communicating with the air-passages within the jacket, the latter being of less diameter than the vase, so as to form a cavity between the two, and the oil reservoir independently supported at the top of said vase, substantially as described. 4th. The combination of the vase, the works and fan-blower for producing a forced draft, the jacket inclosing said fan and blower and also the air-passage leading to the latter, said jacket being of less diameter than the vase so as to form a cavity for dust and refuse between the two, and the oil reservoir having a flat or concave bottom, substantially as described. 5th. In a forced draft lamp, the combination, with the fan or blower, of a wind collar or ring placed below the same, and adapted to regulate the supply of air and render the same uniform and steady, substantially as described. 6th. The combination, with the blower and band encircling the same, of the wind collar supported by said band, and adapted to render uniform the supply of air to the burner, substantially as described. 7th. The combination of the outer shell or casing, the oil reservoir supported therein, the wick tubes, the wick spindle passing through the same, and a notched disk fixed on said spindle between the casing reservoir, substantially as and for the purpose set forth.

No. 26,298. Mould for the Manufacture of Box Traps for Plumbing Purposes. (*Moule pour faire les valves d'égout pour plombiers.*)

Joseph McAfee, St. John, N.B., 21st March, 1887; 5 years.

Claim.—1st. The outer mould consisting of parts A, A₁, and the mode of fastening those parts together by means of the lugs M, M₁ and levers G, G₁ as given in the annexed drawings, and substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the nozzle H, and the core K, and the securing of the core, substantially as and for the purpose hereinbefore set forth. 3rd. The separable core composed of the base B, the column D with the cap E and grooves R, R₁, S, S₁ and T, T₁, and the segments C, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the base B, the column D with the cap E and grooves R, R₁, S, S₁ and T, T₁, and the segments C, substantially as and for the purpose hereinbefore set forth. 5th. The combination of outer mould, the separable core and the shoulder V on the segments by means of which the threaded wick is united with the box-trap, as above described. 6th. The combination of the outer mould and fastenings, the nozzle and core for the nozzle, the securing of the core in the nozzle, the base with the grooves S, S₁ and T, T₁, the column D with the cap E and groove R, R₁, and the segments C, substantially as described in the annexed drawings and as and for the purposes hereinbefore set forth.

No. 26,299. Frame for Portable Structures.

(*Charpente pour construction portative.*)

Emma K. Tourgie, (assignee of Albion W. Tourgie), Mayville, N.Y., U.S., 22nd March, 1887; 5 years.

Claim.—1st. A frame for tents, portable houses and other structures, composed of a series of hollow metallic bars having screw-threaded ends, tent pins having screw-threaded sockets, screw-threaded unions adapted to receive and connect the adjacent screw-threaded ends of the frame bars, horizontal beams adapted to brace the lower portion of the frame, and curved braces adapted to grip the hollow bars, and cups or thimbles connected to said hollow bars for the purpose of securing said braces in position, substantially as and for the purpose set forth. 2nd. In a frame for tents for portable houses and other structures, the combination, with tubular upright bars forming the body portion, and having screw-threaded lower

ends, of a tent pin having at its upper portion a screw-threaded socket, and a circumferential ring or flange end, bracing beams having hook-shaped ends to permit of their engaging the uprights, and side-bracing bars or beams having hook-shaped ends adapted to hook over the end-bracing beams, substantially as set forth. 3rd. A frame for portable structures having tubular bars provided with perforations or holes to receive the cover-securing devices, and threaded ends, threaded couplings for securing said bars together, a series of braces adapted to gripe said bars and thimbles adapted to hold said braces in position, substantially as set forth. 4th. In a frame for portable structures, the combination of a series of round bars, unions for coupling the same together, and curved flanged braces adapted to gripe and brace said bars in position, substantially as set forth. 5th. A frame for portable structures composed of a series of hollow metallic bars or rods, tent pins adapted to receive the lower ends of said bars, union adapted to receive and connect the adjacent ends of the bars constituting the upper portion of the frame, semi-cylindrical curved bracing bars to engage and partly embrace the frame bars, thimbles adapted to slide along said frame bars and clamp the braces in position, and suitable side and end bracing bars connecting with and bracing the lower portion of the structure, substantially as set forth. 6th. A frame for portable structures, constructed substantially as described, and having flanged sills, and flanged sleeper to support the flooring, substantially as set forth. 7th. A frame for portable structures having a series of semi-cylindrical bars, unions or couplings for coupling the ends of the respective sections and securing the same together, a series of braces adapted to gripe said bars, and thimbles adapted to hold said braces in position, substantially as set forth. 8th. In a frame for portable structures, the semi-tubular bars herein described, in combination with suitable irons or couplings for coupling the respective sections of said bars together, substantially as set forth. 9th. In a frame for portable structures, the combination, with the tubular or semi-tubular bars having holes formed therein to permit of the securing of the frame-covering thereto, as herein described, of a suitable covering and a series of eyelet-hooks, each composed of a rear eyelet-shaped portion adapted to be attached to the frame-covering, and a front hook-shaped portion adapted to engage either with the holes in the frame bars or with the eyelet-shaped portion of an adjacent eyelet-hook, substantially as and for the purpose set forth.

No. 26,300. Vibrating Electrical Apparatus.

(Appareil électrique oscillant.)

Alexander Anderson, (assignee of Isaac T. Richardson), Toronto, Ont., 22nd March, 1887; 5 years.

Claim.—1st. An electro-magnet, in combination with an armature so placed that when the armature is drawn towards the core of the electro-magnet it at the same time comes in contact with a contact piece, thus closing a circuit connecting with the main circuit and cutting out the circuit through the electro-magnet, as and for the purpose specified. 2nd. An electro-magnet, in combination with an armature carrying an adjustable screw so placed that when the armature is drawn towards the core of the electro-magnet it at the same time closes a circuit through the wires, and contact piece, and thence on to the main circuit thus opening and closing different resistances without breaking the current, as and for the purpose specified.

No. 26,301. Telegraphy. (Télégraphie.)

Charles Selden, William T. Barnard, Baltimore, Md., U. S., and François Van Rysselberghe, Brussels, Belgium, 22nd March, 1887; 5 years.

Claim.—1st. The combination, with a telegraph line composed in part of multiple arc circuits, of current gradulators arranged in said arc circuits, substantially as described. 2nd. The combination, with a telegraph line, of current gradulators arranged in branch or multiple arc circuits, substantially as described. 3rd. The combination, with a telegraph line having branch or multiple arc circuits, and current gradulators arranged therein, of an induced current circuit connected therewith by separators, substantially as described. 4th. The combination, with a telegraph line, having branch or multiple arc circuits, and current gradulators arranged therein, of an induced current circuit connected thereto by means of inductoriums acting as separators, substantially as described. 5th. The combination of two telegraph circuits, each having branch or multiple arc circuits containing gradulators, and portions or branches of said lines arranged in inductive relations to each other, of induced current instruments connected to said portions or branches, whereby the two lines form a complete metallic circuit for said induced current instruments, substantially as described. 6th. The combination, with a telegraph line composed in part of branch or multiple arc circuits, and having current gradulators in said branch or arc circuits, of an induced current circuit connected to one of said branch or arc circuits by means of separators, substantially as described. 7th. The combination, with a telegraph line composed in part of branch or multiple arc circuits, of current gradulators arranged in each of said branch circuits, the said gradulators consisting of two or more separate resistances, substantially as described. 8th. The combination, with a telegraph line composed in part of branch or multiple arc circuits, and having two separate current gradulators in each branch, of an induced current circuit connected to one of the branch circuits between the gradulators, substantially as described.

No. 26,302. Timber Structure for Mines.

(Trousee en bois pour mines.)

George J. Goodhue, Stevens' Point, and Harvey M. Wadleigh, Hatley, Wis., U. S., 22nd March, 1887; 5 years.

Claim.—1st. In a timber structure for mines, the combination, with suitable legs, of caps having their respective ends cut away to form upper and lower shoulders and bevelled tongues, substantially as and for the purposes set forth. 2nd. In a timber structure for mines, the combination, with suitable legs having gudgeons at their extremities, of caps having their respective ends cut away to form upper

and lower shoulders and bevelled tongues, the latter having their ends suitably recessed to fit said gudgeons, substantially as and for the purpose set forth. 3rd. In a timber structure for mines, the combination, with round legs having circular gudgeons at their extremities, of caps cut away at their respective ends to form upper and lower shoulders and bevelled tongues, the latter having concave recesses in their ends to fit said gudgeons, substantially as and for the purpose set forth. 4th. In a timber structure for mines, the combination, with legs having their extremities cut away to form shoulders, of caps having their respective ends cut away to form upper and lower shoulders and bevelled tongues, substantially as and for the purpose set forth.

No. 26,303. Reversing Mechanism for Steam Engines. (Mécanisme de Relevage pour Machines à vapeur.)

John Carter, Medora (assignee of Lorin C. Forwood, Shipman, Ill., U. S., 23rd March, 1887; 5 years.

Claim.—1st. The tubular hub B, having diametrically opposite slots parallel with its axis, and collars E, E₁ provided with parallel guiding edges, in combination with the eccentric F between the collars and guided by the said edges, the wedges G, G₁ oppositely arranged with respect to each other, and working in the slots in the hub against the inner edges of the eccentric, and the sliding collar A to which the wedges are joined, substantially as set forth. 2nd. The combination, with the shaft A and the tubular hub B secured thereon to revolve therewith, and having the diametrically opposite slots parallel with the axis, and the collars E, E₁ having parallel guiding edges b, of the eccentric F formed in two parts a, a₁, secured together between the collars E, E₁, and with an opening having parallel sides sliding on the guides b, b, the oppositely-arranged wedges G, G, working in the slots in the hub against the inner edges of the eccentric opposite those engaging the edges b and having stems c, c, and a collar H, substantially as set forth.

No. 26,304. Nut Lock. (Arrête-Ecrou.)

Franklin P. Beisel and Jacob Barer, Pottstown, Penn., U. S., 23rd March, 1887; 5 years.

Claim.—1st. An improved nut-locking device, an annular shell E, having lugs E₃ at its inner interior surface, and in its outer end an aperture E₂, conforming with and adapted to receive the nut C₃ of the bolt C, in combination with a body washer D, with collar D₁, recesses D₄ and keeper hooks D₅, adapted by perforation D₃ to slip over said bolt, and a spring F, all arranged and adapted to be operated together, substantially as shown, described, and for the purpose specified. 2nd. In combination with a nut-locking device, consisting of a perforated body washer D, with passages D₄ and keeper hooks D₅ formed upon or within the same, and an annular shell E having a nut aperture E₂ and lugs E₃, adapted to move within the passages D₄, and lock beneath the keepers D₅, as described, an outer open case, its inner end perforated for the bolt C, said case adapted to receive the collar D₁ of the washer D, and to conceal and protect the spring F and contacting parts of washer and shell, in the manner shown and for the purpose set forth.

No. 26,305. Dinner Pail for Workmen.

(Potager d'Ouvrier.)

John Robinson, Coal Valley, W. V., U. S., 23rd March, 1887; 5 years.

Claim.—1st. In a dinner-pail, the combination of the lower section and the upper sections hinged together above the lower section, and adapted to close over the same and the heating tube extending through the lower section and between the upper sections, substantially as described. 2nd. The combination, in a dinner-pail, of the lower section, the upper sections hinged together on the upper side of the lower section and adapted to close over the same, a rod projecting from one side of the lower section and on which the upper sections are hinged, a rod on the opposite side of the lower section, and the bail connected to the said rods, substantially as described. 3rd. In a dinner-pail, the combination of the lower section, the hinged sections above said lower section and adapted to close over the same, the heating tube extending above the lower section, and the doors for the inner sides of the hinged sections, and having recesses to receive the heating-tube when the hinged sections are closed, substantially as described. 4th. In a dinner-pail, the combination of the lower section with the hinged sections above the same, and separate doors on the inner sides of the hinged sections, substantially as described. 5th. In a dinner-pail, the combination of the lower section with the upper sections, having flanges on their lower sides to catch on the inner side of the lower section, as set forth.

No. 26,306. Pen Holder. (Porte-Plume.)

Samuel S. Rogers, Lewiston, I. T., U. S., 23rd March, 1887; 5 years.

Claim.—1st. In a pen holder, the combination, with a central spindle, of surrounding tubes, one having an end or projection resting against the under side of the outer portion of the pen, and the other tubes adapted to receive between them the inner end of the pen, substantially as and for the purpose set forth. 2nd. The combination, with the pen-holder, of the spindle having an arm formed to extend about parallel with said spindle, substantially as and for the purpose set forth. 3rd. The combination, with the pen-holder having a notched tube, and a spindle having an arm bent upon or parallel with itself, of the finger receiver or clasp provided with a cushion on one end, a tubular portion and a loop, the wire of which latter is extended into an arm provided with a curved upwardly extended portion, substantially as and for the purpose specified. 4th. The combination, with the pen-holder having a notched tube, and the spindle having an arm bent upon or parallel with itself, of the finger clasp or receiver, provided with a cushion at one end, a tubular portion, a loop and an arm having curved upwardly-projecting portions provided with cushion at one end. 5th. In a pen-holder, the combination of a central spindle, the tube D adapted to slide thereon

and provided with the end *f*, the collar *E*, the tube *G* forming the fountain *g*, and having the small hole *g*² therein, and the rubber tube *H* for holding the pen, substantially as described and shown and for the purpose set forth. 6th. In a pen-holder, the combination of the tube *D* adapted to slide back and forth upon a central spindle, and provided with the end *f*, the tube *G* forming the fountain *g* and having the small hole *g*² therein, the rubber tube *H* for holding the pen and the lever *I*, the end *i* of which forms a short plunger, substantially as shown and described. 7th. In a pen-holder, the combination of the device, substantially as described, for the connection of the pen-holder to the finger, the pen-holder having a sliding or extensible connection with said device, whereby the holder and finger are adapted to have the required relative movements in the operation of writing, substantially as set forth. 8th. In a pen-holder, the combination of a central spindle having spring ends *k*, *k*, and sloping portions *k*₁, *k*₁, the tube *D* adapted to slide back and forth upon the said central spindle, and provided with the end of the collar *E*, the tube *G*, forming the fountain *g*, and having the small hole *g*² therein, and the rubber tube *H* for holding the pen, substantially as shown and described. 9th. In a pen-holder, the combination of a central spindle, the tube *D* having notches and adapted to slide back and forth upon the said central spindle, the said tube *D* provided with the end *f* and the finger-clasp, the tube *G* forming the fountain *g* and having the small hole *g*² therein, and the rubber tube *H* for holding the pen, substantially as shown and described.

No. 26,307. Button. (*Bouton*.)

Augustine J. Wilson, New York, N. Y., U. S., 23rd March, 1887; 5 years.

Claim.—1st. The button herein described, having a flattened post *A*, which is of greatest width, of the head, and tapered in within in a direction away from the head, and also having an arm *C* extending from the narrow end of the post in a direction transverse to the plane of the post, substantially as herein set forth. 2nd. A button, having at one end of the post a head or shoe, and at the other end an arm or horn extending transversely to the post, and joined by a globular enlargement *a* to the post, substantially as herein described.

No. 26,308. Machine for Cleaning Intestines. (*Machine à Blanchir les Boyaux*.)

James Cuning, Indianapolis, Ind., U. S., 23rd March, 1887; 5 years.

Claim.—1st. In a machine for cleaning intestines, the combination, with a scraper and a support for holding the intestines in contact with the scraper, of a pipe for conducting water into the interior of the scraper cylinder, substantially as set forth. 2nd. In a machine for cleaning intestines, the combination, with a rotary cylinder provided with scrapers on its periphery, and table for holding the intestine in contact with the scraper, of a water-pipe extending through the end of the cylinder, to throw water from within the cylinder onto the scrapers, for the purpose substantially as set forth. 3rd. The combination, with the rotary cylinder provided with adjustable scrapers on its periphery, of an adjustable table for holding the intestine in engagement with the scrapers, substantially as set forth. 4th. In a machine for cleaning intestines, the combination, with a rotary drum or cylinder, of a series of yielding scrapers secured to its periphery, substantially as set forth. 5th. In a machine for cleaning intestines, a yielding scraper secured to a stiffening plate, or between stiffening plates, substantially as set forth. 6th. In a machine for cleaning intestines, the combination, with a rotary drum or cylinder, provided with a series of longitudinal ribs or flanges on its periphery, of a series of flexible scrapers secured to the ribs or flanges, substantially as set forth. 7th. The combination, with the rotary scraper and the table for supporting the intestine in engagement therewith, of a water pipe for discharging water onto the exterior of the scraper-cylinder, and the two rollers for grasping the intestine and drawing it beneath the scraper and suitable driving gear, substantially as set forth. 8th. In an intestine scraping machine, the combination, with a scraping cylinder, of a pair of gripping rollers, and means for imparting motion from said cylinder to the rollers, one of the rollers being provided with a safety device for stopping the motion thereof, when a great resistance is offered to the rotation of the rollers, as set forth. 9th. The combination, with the gripping rollers and the smooth roller *b*, of an automatically adjusting friction wheel to transmit motion from the gripping rollers to the rollers *b*, as described. 10th. The gripping rollers *I* and *I*, the shaft of one of which is provided with a safety device for stopping the rollers when extraordinarily great resistance is offered to their movement, and the other being movable and held against its fellow with a yielding pressure to give and allow small resistances to pass between them, as set forth.

No. 26,309. Battery Zinc, and Process of Manufacturing the Same. (*Zinc de Batterie et Procédé pour le Fabriquer*.)

John Beattie, Jr., Westport, Mass., U. S., 23rd March, 1887; 5 years.

Claim.—1st. The process of making amalgamated zinc for galvanic batteries, which consists in melting a quantity of zinc, and adding thereto an amalgam of any metal except zinc, substantially as described. 2nd. The process of making amalgamated zincs for galvanic batteries, which consists in uniting mercury and any metal, except zinc, by heat, adding arsenic and carbonate of sodium, allowing the mass to cool, and afterwards dissolving it in molten zinc, whereby an amalgam is first formed and afterwards an amalgam combined with the zinc, substantially as set forth. 3rd. An electrode for galvanic batteries, consisting of the combination, substantially as described, of zinc, and an amalgam of any metal, except zinc.

No. 26,310. Animal Trap. (*Ratière*.)

Alphonso Becker, Waterford, Penn., U. S., 23rd March, 1887; 5 years.

Claim.—1st. In a trap, the combination of the base having an edge-

like rib, and provided alongside of and below said rib with a bearing for the bail, the spring actuated bail movable alongside of said rib, and to and against the bearing and trip mechanism, substantially as set forth. 2nd. In a trap, the combination, with a base having studs projected inwardly toward each other, of the arch-like bail, the ends of which are coiled on the said stud, and have an outward tension, all being arranged, substantially as described, whereby the said bail will be self-retaining on its supporting studs, substantially as set forth. 3rd. The combination, with the base having a cross-bar and trip mechanism, of the standard formed of wire, having its arms bent around the cross-bar, and having the extremities or ends of said arms bent and extended laterally along the cross-bar, substantially as set forth. 4th. The improved trap, substantially as herein described, consisting of the base having an edge-like rib, and provided with a cross-bar, and with extensions in rear of such cross-bar, having lateral studs, the bail having its ends wound on said studs, the standard formed of wire and having its arms bent around the cross-bar and their extremities extended laterally, the trigger pivoted to the cross-bar and the trip-lever pivoted to the standard, substantially as set forth.

No. 26,311. Process for Hardening and Preserving Plaster of Paris Casts and Moulds. (*Procédé pour Durcir et Conserver les Pièces Moulées et les Moules en Plâtre*.)

Emma T. L. Clark, London, Eng., 24th March, 1887; 5 years.

Claim.—1st. The method of hardening, strengthening and preserving plaster of Paris casts, and moulds by treating them with borax, in solution, substantially as described. 2nd. The treatment of plaster of Paris casts, or moulds, after immersion in solution of borax with white or paraffin wax, substantially as described. 3rd. Also the use of ordinary soft soap for the purpose of polishing and cleaning the surface of plaster of Paris casts, or moulds, which have been treated with solution of borax and white or paraffin wax, substantially as described.

No. 26,312. Chart for Drafting Garments. (*Patron pour Tracer les Vêtements*.)

Elizabeth Gartland, Philadelphia, Penn., U. S., 24th March, 1887; 5 years.

Claim.—1st. The system herein described, of making a chart for patterns of garments, consisting in plotting thereon by means of a circle, whose circumference is the proper arm-measurement of the garment to be patterned, and a waist line distant from said circle, the proper under-arm measurement slanting diameters of said circle drawn at angles, substantially as described, and other lines connected with said circle waist-line and slanting diameters, all of the various body measurements, as set forth. 2nd. An improved chart for making patterns of garments, consisting of a chart, having thereon as the basis for drawing the outlines a circle whose circumference is the proper arm-measure of the garment to be patterned, and a waist line distant from the circle, the proper under-arm measurement and a series of slanting diameters, as described, and lines of the lengths of the various body measurements, all substantially as described. 3rd. A chart for drafting the outlines of patterns, having thereon a circle with slanting diameters, substantially as described and shown, and lines tangential to said circle, and other lines parallel to said tangential lines, said circle having a circumference equal to the proper arm measurement of the garment to be patterned, all substantially as and for the purpose set forth.

No. 26,313. Process of Producing Shades, Tints, Characters, Designs, etc., upon Surfaces. (*Procédé pour Produire des Ombres, Teintes, Figures, Dessins, etc.*)

Caryl Coleman, New York, N. Y., U. S., 24th March, 1887; 5 years.

Claim.—1st. The process of producing shades, tints, characters, designs, etc., in color upon surfaces, which consists in heating the substance to be treated, and then while it remains in the heated condition applying colors to the surface until the desired degree of penetration is attained, substantially as described. 2nd. The process of producing shades, tints, characters, designs, etc., in color upon surfaces, which consists in heating the substance to be treated, and then while it remains in the heated condition applying hot colors to the surface until the desired degree of penetration is attained, substantially as described. 3rd. The process of producing characters, designs, etc., in color upon surfaces, which consists in, first, tracing the outline of the representation upon the surface of the substance treated, then subjected said substance to the action of heat, and then while it remains in the heated condition applying the filling-in colors to the surface until the desired degree of penetration is attained, substantially as described. 4th. The process of finishing or re-touching shades, tints, characters, designs, etc., in color upon surfaces either before or after polishing, which consists in reheating the substance treated and applying the finishing colors to the original representation until the desired alteration is effected, substantially as described.

No. 26,314. Screen, Door or Window Frame (Insect Screen.) (*Châssis d'écran, de Porte et de Fenêtre*) (*Moustiquaire*.)

John W. Boughton, Philadelphia, Penn., U. S., 24th March, 1887; 5 years.

Claim.—1st. A knockdown door or frame, having rails formed with tenons and kerfs extending into the rails from the inner terminations of the tenons, thereby forming tongues, substantially as and for the purpose set forth. 2nd. In a knockdown door or frame, rails having

tenons H and kerfs J forming tongues K, in combination with the side stile having mortises therein, all substantially as described. 3rd. In a knockdown door or frame, two or more rails, each having on one end thereof the tenon G and on the other end the tenon H and kerfs J forming the tongues K, in combination with stiles E, F, said stiles having extended vertical mortises, all as described, whereby the said frame may be readily adjusted both in width and height, as described. 4th. The combination, with the door screen or frame of the blocks L, substantially as described.

No. 26,315. Car Wheel. (*Roue de Char.*)

Richard N. Allen, Cleveland, Ohio, U.S., 24th March, 1887; 15 years.

Claim.—1st. A car-wheel center or body cast in a single piece, and provided with continuous or unbroken sides joined by cross webs or ribs extending from the rim to the hub, and dividing the interior into a series of radial chambers, substantially as and for the purpose described. 2nd. A car-wheel composed of a body or central part cast in a single piece and a tire, the body being provided with continuous or unbroken sides joined by cross webs or ribs extending from the rim to the hubs, and dividing the interior into a series of radial chambers, each having apertures extending through the rim and the tire being fitted upon the rim of the body to cover its apertures and form a continuous metal tread, substantially as set forth. 3rd. The herein described method of casting car-wheel bodies or centers, having continuous or unbroken sides, joined by cross webs or ribs extending from the rim to the hub and dividing the interior into a series of radial chambers, which consists in arranging in the casting molds cores corresponding with the radial chambers of the body, and holding such cores in position during the casting by means of radial projections or core-prints, supported at one end of the core in the axle space and at the other end beyond the rim space of the mold, whereby the body is cast in one piece and the apertures for the removal of the cores from the cast body are provided through the rim and the hub and the sides of the body are made continuous or unbroken.

No. 26,316. Tricycle. (*Tricycle.*)

Charles C. Anderson, Morgan, La., U.S., 24th March, 1887; 5 years.

Claim.—1st. In a tricycle or similar vehicle, constructed with side bars B having cross bars, and a main crank shaft A journaled in said side bars, in combination with the grooved wheels F keyed to a treaded crank shaft E journaled in the brace bases G, adapted to operate the crank shaft of the main shaft A by the pivoted sliding blocks F and pitman H, substantially as shown and described and for the purpose herein set forth. 2nd. In a tricycle, the combination, with the frame thereof consisting of side bars B and cross piece C, of a guide bar L having two U shaped arms M, adapted to straddle the guide wheel A, and form a bearing for its axle, the said guide bar L pivoted to the intersecting side bars B by the pivot pin O upon the arm M, and adapted to slide upon a guide rod D connected with the said frame by means of the eye E formed in its end, substantially as shown and described and for the purpose herein set forth.

No. 26,317. Foot Rest. (*Tabouret.*)

Albert H. Ordway, Melrose, Mass., U.S., 24th March, 1887; 5 years.

Claim.—1st. The herein described foot rest consisting of the top A, and a pair of legs or supports, each composed of two bent wood pieces b, b, secured together and to the top A, and the bent wood base c secured to the lower portion of the parts b, b, as and for the purpose set forth. 2nd. The top A and the legs composed of the three bent wood pieces b, b, c, combined with the braces B, C secured respectively to the upright b, b, and base parts c, c, as and for the purpose set forth. 3rd. A foot rest having legs or supports, each composed of the three bent wood pieces b, b, c, combined with the braces B, C secured respectively to the parts b, b, and c, c, and having secured to them the pedals or lower rests d, d, as and for the purpose set forth and described.

No. 26,318. Mold for Casting. (*Moule de Fonderie.*)

Alexander E. Outerbridge, Jr., Philadelphia, Penn., U.S., 24th March, 1887; 5 years.

Claim.—1st. A mold or the face of a mold, consisting wholly or partly of refractorily carbonized material, retaining the shape and outlines or the design of the original object, substantially as described. 2nd. The process of forming a refractory material for a mold or the face of a mold, consisting in first slowly heating the objects packed in a suitable receptacle, whereby the distillation of the volatile elements is effected, and second in heating to a high temperature the receptacle and inclosed carbonized object, substantially as described whereby a non-combustible material is obtained as stated.

No. 26,319. Machine for Making Tongue and Groove Flooring. (*Machine à bouveret.*)

Greenleaf Johnson, jr., Baltimore, Maryland, U.S., 24th March, 1887; 5 years.

Claim.—1st. In a machine for making tongue and groove flooring, the combination, with the frame thereof, suitable feed rolls to carry the plank to be operated on longitudinally of the said frame, rotary shafts carrying surface dressing cutters, rotary shafts with cutters adapted to groove the planks longitudinally thereof arranged above and below the said plank, rotary shafts carrying circular saws arranged to rip the plank at the channels into boards, grasping devices to engage with the boards and separate them laterally and parallelly, vertical rotary shafts provided with cutters arranged to groove the edges of the separated boards, which are not furnished with tongues, all the said elements being located in consecutive order as described, and means to effect their joint operation, substantially as specified. 2nd. In a machine for making tongue and groove flooring, the combination, with the frame thereof and suitable feed rolls to carry the

plank to be operated on longitudinally of the said frame, rotary shafts carrying surface dressing cutters, rotary shafts with cutters adapted to groove the plank longitudinally thereof arranged above and below the said plank, rotary shafts carrying circular saws arranged to rip the plank at the channels into boards, grasping devices to engage with the boards and separate them laterally and parallelly, vertical rotary shafts provided with cutters arranged to groove the edges of the separated boards which are not furnished with tongues, vertical revoluble shafts fitted with cutters against which the said boards are forced by means of rolls to bevel the edges of the boards and round the tongues, all the said elements being located in consecutive order as described, and means to effect their joint operation, substantially as specified. 3rd. In a machine for making tongue and groove flooring, the combination, with the frame thereof, and suitable feed rolls to carry the plank to be operated on longitudinally of the said frame, circular saws to rip the said plank into boards, and devices to receive and laterally and parallelly separate the boards, which consist substantially of a series of diagonal bars pivoted together and attached to a stationary part of the machine, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping fingers and means to effect the extension and contraction of the diagonal pivoted bars, substantially as specified. 4th. In a machine for making tongue and groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edges, which consist of a series of diagonal bars pivoted together and attached to a stationary part of the machine to which the boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the engaging fingers, and means to effect the extension and contraction of the said pivoted bars all combined, substantially as specified. 5th. In a machine for making tongue and groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edge, which consists in the combination of diagonal bars pivoted together and attached to a stationary part of the machine to which the boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping devices, a revoluble crank disk having a crank pin, and a rod which connects the said pin with the said pivoted diagonal bars, whereby the same are alternately distended and contracted, substantially as and for the purpose specified. 6th. In a machine for making tongue and groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edge, which consists of the combination of diagonal bars pivoted together and attached to a stationary part of the machine to which boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping devices, means to effect the alternate extension and contraction of the said pivoted diagonal bars, and a roller situated near the said diagonal bars and transversely of the path of the moving boards with suitable mechanism to alternately raise and lower the same to release and hold the boards and to co-act with the distensible diagonal pivoted bars, substantially as and for the purpose specified. 7th. A means to effect the relation of the shaft M for the purpose described from the boards while the same are moving longitudinally of the machine, the continuously rotating shaft C having the gear n, loose gear wheel n on the shaft M in engagement with the one n¹, the clutch n¹ fastened to the gear n, the sliding clutch m¹ on the shaft M, a roller suspended over the path of the boards and slightly below their upper surface, and suitable levers and rods to connect the said roller with the clutch m¹, whereby in the elevation of the said roller the clutch m¹ is forced to engage with the one m¹, all combined substantially as specified. 8th. As means to force and hold the clutches m¹ and M¹ in full engagement after the one m¹ has been brought in contact with the other M¹ through the agency of the roller L and its connections, the combination, with the shaft M and clutch m¹, of the cam R keyed to the said shaft and in engagement with the collar and its mechanism, whereby the clutch m¹ is moved toward the one M¹, substantially as specified.

No. 26,320. Repeating Fire-Arm.

(*Arme à feu à répétition.*)

Frank Rees, South Orange, N.J., U.S., 26th March, 1887; 5 years.

Claim.—1st. The combination, with the magazine for cartridges and a carrier for conveying the cartridges from the magazine to the barrel in a fire-arm, of a spring barrel capable of being wound up, and a chain belt from such barrel and gearing acted upon by the chain to revolve the carrier progressively, substantially as set forth. 2nd. The combination, with the barrel and magazine in a fire-arm, of a carrier to convey the cartridges from the magazine to the barrel, a spring barrel capable of being wound up, chain wheels and a chain from such barrel and gearing for revolving the carrier, a reciprocating breech bolt for conveying the cartridge from the carrier to the barrel, a crank and connecting rod receiving motion from the spring barrel chain, and wheels for giving a back ward and forward motion to the reciprocating breech bolt, substantially as specified. 3rd. The combination, with the barrel and reciprocating breech bolt and its actuating mechanism, of a revolving carrier for bringing the cartridge up to the breech of the barrel, and having two openings for the cartridge and longitudinal slots, for the connection between the reciprocating breech bolt and its actuating mechanism, and a shaft and gearing for revolving the carrier, substantially as specified. 4th. The combination, with the barrel and magazine, of a spring barrel capable of being wound up, chain wheels, a chain, a revolving cartridge carrier, a shaft for the same, a pinion upon the said shaft, sectional gearing acted upon by the chain for turning the pinion and the stops for holding the pinion and carrier, substantially as set forth. 5th. The combination, in a magazine fire-arm, of a revolving carrier at the rear of the breech, a reciprocating breech bolt, a spring barrel chain, and chain wheels, and sectional gearing for rotating the carrier and its shaft, and a tumbler crank pin and connecting rod for moving the reciprocating breech bolt and forcing the cartridge from the carrier into the barrel, substantially as set forth. 6th. The combination, with the barrel and magazine, of a revolving carrier to convey the cartridges from the magazine to the barrel, a

reciprocating breech bolt, toggle links at the rear end of such breech bolt, a spring capable of being wound up, a chain and chain wheels, a shaft and gearing acted upon by such chain to rotate the carrier, a cam revolved with the gearing to act upon the toggle links and move them beyond the centre, a spring to give the return motion to the toggles, a crank pin and connecting rod to reciprocate the breech bolt, substantially as set forth. 7th. The combination, with the magazine for the cartridges, the barrel, the carrier behind and upon an axis parallel with the barrel, and gearing for revolving the carrier, of a spring barrel adapted to being wound up, a chain connecting the barrel, and the carrier operating mechanism and chain wheels, a hinged lever and bearings for the shaft of the spring barrel, a pivot upon the frame of the butt, and a screw for tightening the chain, substantially as set forth. 8th. The combination, with the magazine and barrel in a fire-arm, of a carrier for conveying the cartridges from the magazine to the barrel, and gearing for revolving the same, of a spring barrel in the stock of the gun, a chain, chain wheels and a guide pulley for directing the chain in its passage through the stock of the gun, substantially as set forth. 9th. The combination, in a fire-arm, with the magazine for cartridges, the barrel and a revolving carrier to transfer the cartridges from the magazine to the breech, of a spring capable of being wound up, chain wheels and chain from the same, and sectional gearing for revolving the carrier, a tumbler revolved by the chain, a trigger and sear for arresting the motion of the tumbler, a breech-bolt for moving the cartridge into the barrel, a firing pin, a spring and a sear for holding the firing pin, substantially as specified, whereby the sear of the trigger discharges the firing pin before allowing the tumbler to revolve, substantially as set forth. 10th. The combination, in a fire-arm, with the revolving tumbler K for operating the lock mechanism of the gun, of the trigger F, the trigger sear S, latch S₁, hook F₁, the springs for the respective parts, and the spring barrel capable of being wound up, and the chain and chain wheels for giving motion to the tumbler, substantially as specified. 11th. The combination, in a fire-arm, with the spring barrel capable of being wound up, and the chain and chain wheels, of the tumbler K for operating the lock mechanism of the gun having a notch H, the trigger F and the sear S, the firing pin and its sear and the arm n₃ upon the sear, and the hook f₃ upon the trigger, substantially as and for the purposes set forth. 12th. In combination with the trigger F and its sear S, of the firing pin n, sear n₂ for the firing pin, the arm n₃ connected with the sear n₂, joint 27, sear spring and arm 14, for holding the sear n₂ and the cartridge carrier G and its axle, and sectional gearing for revolving the same, whereby the sear n₂ and firing pin are locked and held while the trigger and sear are being moved for allowing the cartridge carrier to be revolved, substantially as set forth. 13th. The finger piece z, vertical shaft t₂ supported in the housing, and safety lock k upon the shaft t₂ to lock the parts, in combination with the revolving tumbler K, the trigger and trigger sear between the tumbler and the safety lock, the spring barrel capable of being wound up, and the chain wheels and chain for revolving the tumbler K, substantially as set forth. 14th. The combination, with the fire-arm barrel, the magazine for cartridges, and the revolving carrier behind the barrel, for conveying the cartridges successively from the magazine to the barrel, of the stationary lock frame l₂ for supporting the operating mechanism of the gun, having a filling and ejecting chamber M in line with the magazine, a swinging door to the same an ejector within the chamber, and the crank arm 30 upon the axis of the swinging door, spring 31, cam arm r and revolving cam z₂, and operating mechanism for actuating the ejector, substantially as specified. 15th. The combination, with the magazine barrel and revolving carrier upon an axis in line with the barrel, of the filling and ejecting chamber in the lock frame and in line with the magazine, the gate g at the front end of the ejecting chamber, the shaft q₁ and finger l₅, the shaft r₁ in line with the shaft q₁, the finger l₄ and cam arm r upon the same, and the revolving cam z₂ for moving the cam r, chain and actuating spring for moving the parts and swinging the gate at the end of the filling and ejecting chamber, substantially as set forth. 16th. The combination, with the barrel and magazine in a fire-arm of a revolving carrier, an axis for the same parallel with the barrel, the stationary lock frame having a filling and ejecting chamber in line with the magazine, a hinged door for said chamber, and a spring for closing the same, a gate g at the front end of the ejecting chamber, a thumb-piece q₃ acted upon by the door of the ejecting chamber and moving the gate, and an ejector within the chamber and mechanism, substantially as specified, for giving motion to the respective parts, as set forth. 17th. The combination, with the reciprocating breech-bolt and the firing-pin, of the sear n₂ to hold the firing-pin, the set back o pivoted within the breech-bolt and having a cam end to act upon the firing-pin, the stationary projection o₄ with which an inclined face on the set-back comes into contact as the breech-bolt is drawn back and the spring acting directly upon the set-back to return it to its normal position, substantially as set forth. 18th. The combination, with the tumbler K and the lock mechanism of the fire-arm operated by the tumbler and the spring, of a chain made of short links introduced between longer links, and the chain wheels having projecting teeth that pass in between the pairs of longer links and act against the shorter links, substantially as specified. 19th. The combination, in a repeating fire-arm, of a revolving tumbler and the parts actuated by the same, chain wheels and a chain, a helical expansive spring, a tube containing the same, a fusee barrel and a chain extending from the same to the follower of the helical spring, substantially as set forth. 20th. The combination, with the stationary lock frame having the filling and ejecting chamber M, of the hinged door m for said chamber, the axis l₂ for the hinge of the door, the crank-arm at the end of the same, and the spring 31 for closing said door, substantially as set forth. 21st. The door m of the ejecting chamber hinged at the top and having a finger piece m₂, with a mortise in the same, in combination with the spring latch m₃, and the side plate E_x that encloses the breech mechanism and to which the spring is attached, substantially as set forth. 22nd. The combination, with the revolving tumbler K, the trigger F and trigger sear S, of the arm n₃ upon the end of the firing-pin sear, the sear end n₅ below the arm n₃ and the latch n₈, both hinged to the sear arm n₃, the shaft t₂ adjacent to the sear end, finger piece t₃ and blocking piece t₄ upon such shaft t₂, substantially as set forth. 23rd. The combination, with the trigger

F₁ and its hook, revolving tumbler K, reciprocating breech-bolt, toggle arms L₃ and L₄, and pin 14, of the blocking piece f₅ extending out from the rear of the trigger hook, with its end adjacent to the teeth 7 upon the tumbler K, substantially as and for the purposes set forth. 24th. The combination, with the magazine below the barrel, the follower c₁ within the magazine, stop c₂ for the said follower, and finger-piece c₃ outside the magazine, of the gravity latch c₆ connected to the stop, substantially as and for the purposes set forth. 25th. The combination, with the revolving carrier behind the barrel, and the magazine tube below the barrel, of the follower c₁ within the magazine tube, the stop below the follower, the finger-piece outside the magazine for moving the stop and follower, and the screw c₇ passing in from outside the housing for clamping the follower, as and for the purposes set forth. 26th. The combination, with the magazine tube, of a removable extension magazine tube adapted to set over the magazine tube, and an additional spring within the same, and a fastening device for securing the extension magazine in place, substantially as set forth.

No. 26,321. Paper-Weight. (*Serre-papier.*)

Fenton P. F. Mullins, Philadelphia, Penn., U. S., 26th March, 1887; 5 years.

Claim.—A weight composed of a metal block having a covering or pellicle consisting of two thicknesses of leather fastened thereto by adhesive material, substantially as set forth.

No. 26,322. Pyrotechnic Display.

(*Art Pyrotechnique.*)

Charles H. Thayer, Boston, Mass., U. S., 28th March, 1887; 5 years.

Claim.—1st. In a pyrotechnic display, the railroad track A, one or more dummy vessels, or other portable objects B, C, D, mounted on the respective trucks b, c, d, and having interior hollow spaces, as described, adapted to contain the operators by which the dummies are propelled along the said track, and having means, as described, for discharging fire-works from the interiors of said portable objects, as and for the purpose set forth. 2nd. In a pyrotechnic display, the railroad track A, one or more dummy vessels or other portable objects B, C, D, mounted on their respective trucks b, c, d, and having the interior hollow spaces, as described, and cylinders or imitation ordnance projecting from such interiors, combined with one or more stationary forts E, or other stationary objects, as and for the purpose set forth.

No. 26,323. Window Curtain Exhibitor.

(*Montre à Rideaux de Fenêtres.*)

William P. Yeoman, Waukegan, Ill., U. S., 26th March, 1887; 5 years.

Claim.—1st. The combination of two iron wheels A, A, pierced near their periphery, one with oblong holes, the other with corresponding round holes, having screw threads cut therein, to receive respectively an oblong pin in one end of a curtain-roller, and a hollow screw Fig. 5, which receives a journal in the other end of a curtain roller, the wheels being fixed on a wooden shaft L, L, which revolves in the eyes of brackets H, H, screwed to a board I, I, and having a washer P fastened over one end of said shaft by a screw P₁ driven into the shaft, substantially as and for the purpose hereinbefore set forth. 2nd. The two iron wheels A, A, with corresponding holes parallel with their axes near their borders, in one, the hole made oblong, in the other round, and prepared for the reception of screws to allow respectively the insertion of the rectangular pin of a curtain roller and a hollow screw, Fig. 5, in which is placed the journal in the other end of the curtain-roller, and in which said journal revolve, said wheels being in combination and so fixed as to revolve with a wooden shaft L, L, passing through their centres and through the eyes of brackets H, H, one end of said shaft by a screw P₁ driven into the shaft, substantially as and for the purpose hereinbefore set forth.

No. 26,324. Machinery for Sewing Books.

(*Machine à Brocher les Livres.*)

John R. Ragnolds, Hartford, Conn., U. S., 26th March, 1887; 5 years.

Claim.—1st. The combination, in a book sewing machine, of a range of semi-circular needles, all standing in the same direction and moving simultaneously to carry the threads through the signatures, loopers to hold the threads as the needles draw back and to present the loops to the same needles from which the threads were drawn, after such needles have passed through the next signature, thereby uniting the signatures by the ranges of interlooped threads, substantially as set forth. 2nd. The combination, in a book-sewing machine, of semicircular needles, shafts for holding and oscillating such needles, loopers for taking loops from the needles as the points emerge from the signatures, and presenting them to the same needles at the next stitch, and loop tighteners and mechanism for moving the same and drawing up the respective stitches, substantially as set forth. 3rd. The combination, with the loopers and looper shaft, of a sleeve with inclined slots, a cross-pin, a spring between the sleeve and the looper shaft, and stops to limit the end movement given to the looper-shaft, whereby the looper-shaft is turned and the loopers swung by a continuation of the end movement given to the sleeve, substantially as set forth. 4th. The combination, with the semicircular needles and the shafts for the same, of the loopers and the notched plate 20, against which the fold of the signature rests while the sewing is performed, substantially as set forth. 5th. The combination, in a book-sewing machine, of the semicircular needles and their shafts, the loopers and looper-shaft, the arms for holding the signature while being sewed, the notched plate 20 against which the signature is held, and the bar for pushing the signature back, and the loop-tighteners that pass in between the sewed signature and the signature that is presented for sewing, substantially as set forth. 6th. The combination, with the semicircular needles, grooved on

their outer edges for the thread, of stationary guides through which the needles pass, substantially as set forth. 7th. The semicircular, or nearly semicircular needle, having a groove upon its periphery extending from the shank to the point, and an eye through the needle, near the point and opening into the groove, substantially as set forth. 8th. The combination, with the arm upon which the folded signatures lay in a book sewing machine, of a range of perforators or lances within such arm, and mechanism for projecting and withdrawing such lances to perforate the signatures for the passage of the sewing needles, substantially as set forth. 9th. The arm *e*, slotted vertically, the perforators received within such slots, the connecting bar to which the perforators are attached, the plates 64 at the sides of the arm, the reciprocating bar having cam slots, and the screws passing through the plates 64 and cam slots substantially as set forth. 10th. The combination, with the arm *e* and plates, 64, of the perforators passing through mortises in the arms, the connecting bars 66 to which the perforators are attached, the reciprocating bar 70 and the plates 72 for connecting the bar 66 and reciprocating bar 70, substantially as set forth.

No. 26,325. Fastening for Dental Flask.

(*Serre-Châssis de Moulage Dentaire.*)

Frank G. Hughes, Galt, Ont., 26th March, 1887; 5 years.

Claim.—1st. The cramp C, for holding the parts of a dental flask together, having the hooks *d*, shoulders *e* and slot *f*, in combination with the key E, substantially as and for the purposes shown and described. 2nd. The combination, in a dental flask, of the lower box A provided with the lugs *a* and *b*, the upper box B having the pins *c* and holes *b*, and the cover D having notches *i*, lugs *g* and dowels *a*, with the cramps C having the hook *d*, shoulders *e* and slot *f*, and the keys E, substantially as and for the purposes set forth and described.

No. 26,326. Hat Protector. (*Bourrelet de Chapeau.*)

Mary E. C. Hopkirk, Agency, Iowa, U.S., 26th March, 1887; 5 years.

Claim.—1st. A hat-protector made with an imperforate body portion formed from flexible water-proof fabric, and with draw-strings applied around the crown of the protector upon its inner face, substantially herein set forth. 2nd. A hat-protector made with an imperforate body portion formed from flexible water-proof fabric, and with draw-strings applied around the crown of the protector and with casings secured upon the inner face of the protector, substantially as and for the purposes herein set forth. 3rd. A hat-protector made with an imperforate body formed from flexible water-proof fabric and provided with marginal rings to receive a fastening draw-string, substantially as herein set forth. 4th. A hat-protector made with a body portion A formed from flexible water-proof fabric and provided with draw-strings, as at C, around the crown and with marginal rings, as at D, to receive a fastening draw-string, substantially as herein set forth. 5th. A hat-protector made with a body portion A, having a series of rings E within its margin, and with an extension piece G provided with rings H, I at opposite edges, a draw-string J uniting rings E, H and a fastening draw-string, as at F, passed through rings I, substantially as herein set forth. 6th. A hat-protector made with an imperforate body portion A formed from flexible water-proof fabric and provided with crown draw-strings C and two series of marginal rings D, E and with an extension piece G provided with rings H, I at opposite edges, a draw-string J, uniting rings E, H, and a fastening draw string, as at F, passed through the rings I, substantially as and for the purposes herein set forth.

No. 26,327. Process for Treating Magnetic Oxide of Iron Ores and Sands for the Production, directly therefrom, of Malleable or Wrought Iron or Steel. (*Procédé de traitement de l'Oxide Magnétique des Minerais et Sables de Fer pour en produire directement des Barres de Fer ou d'Acier Malleable ou Forgeable.*)

Dexter Reynolds, Albany, N.Y., U.S., 26th March, 1887; 5 years.

Claim.—1st. The process above described of obtaining malleable, or wrought iron, or steel, direct from magnetic oxide of iron ores and sands, in a single furnace, solely by the surface action of a carbonaceous vapor or gas burned with suitably adjusted measures of air, to produce the character and intensity of flame desired and without the use of charcoal, coal or coke, or any solid carbonaceous material, and without the use of any flux for removal of foreign substances or reduction, except to the slight extent they may not have been previously mechanically removed, conducted in the manner and with the manipulation and order of manipulation substantially as described.

No. 26,328. Apparatus for Regulating, Controlling or Measuring the Supply of Liquids for Water-Closets. (*Appareil pour Régler, Contrôler et Mesurer la quantité d'eau pour Latrines, etc.*)

William Davis, Liverpool, Eng., and Joseph E. Hannah, Winnipeg, Man., 26th March, 1887; 5 years.

Claim.—1st. The combination of the piston A, the chamber B and the valve H, in the working of which a syphon is created between the outlet or stand pipe and the cistern or tank to be emptied.

No. 26,329. Electric Arc Lamp.

(*Lamp électrique à arc.*)

Howard L. Pyle, Akron, Ohio, U.S., 26th March, 1887; 15 years.

Claim.—1st. In an electric arc lamp, the combination, with gravi-

tating carbons and positively actuated feeding mechanism adapted to be released when the main circuit is interrupted or broken, of a lifting magnet of low resistance permanently in the main circuit and arranged to act on the carbon feeding mechanism at starting the lamp, to produce the initial separation between the carbons and establish the arc, an electric motor arranged to operate the carbon feeding mechanism after the arc has been established and having armature and field magnet coils of relatively high resistance both permanently connected in a derivation spanning the arc, and together constituting a shunt carbon regulating circuit therefor, substantially as set forth. 2nd. In an electric arc lamp, the combination, with the carbon feeding devices, of an electric motor having its armature shaft connected to operate said feeding devices, and its armature coils and field magnet coils permanently connected in series and together constituting a shunt around the arc of relatively high resistance as compared with that of the arc, the entire resistance of said shunt being either included in the armature and field magnet coils thereof, or divided between the same and an extra resistance coil or coils, all permanently in the said shunt circuit essentially, as set forth. 3rd. In an electric arc lamp of the class described, the combination, with the carbon feeding devices, of an electric motor, the armature and field magnet coils of which are permanently connected and together constitute a shunt of high resistance around the arc and having its armature shaft arranged for connection with said feeding devices, a lifting magnet permanently included in the main circuit and arranged to produce the initial separation between the carbons and establish a connection between the motor shaft and feeding devices, whereby the motor will be adapted to control the feed, essentially as set forth. 4th. In an electric arc lamp of the kind described, the combination, with the carbon feeding gear train adapted to be actuated by the weight of the upper carbon rod, to allow the carbons to come together by gravity, when the main circuit is interrupted or broken, a lifting magnet of low resistance permanently connected in the main circuit and having its armature connected to the gear train so that, when the lamp is started up, said armature will be raised, the initial separation produced between the carbons and the parts suspended thereby, during the operation of the lamp, and an electric motor arranged to operate the carbon feeding mechanism having armature and field magnet coils of relatively high resistance, both permanently connected and together constituting the shunt across the arc, whereby its action and the feed of the carbons is regulated, as set forth. 5th. The combination, with the tubular guides having slots in their sides, of the carbon rods arranged in said guides and provided with racks, the horizontal shaft provided with pinions of different sizes engaging said racks through the slots in the guides, and the electric motor connected with said shaft through intermediate gearing and included in a shunt, substantially as described and for the purpose set forth. 6th. The combination, with the suitably supported tubular guides having opening in their sides, and the carbon carrying rods arranged in said guides, of the horizontal shaft carrying the pinions of different sizes engaging with racks, and said carbon rods of the electric motor having its vertical shaft arranged for connection with said horizontal shaft, and the lifting magnets having its armature arranged to lift the horizontal shaft for separating the carbons and for making connection through intermediate gearing between the motor shaft and said horizontal shaft, substantially as described. 7th. In an electric arc lamp of the kind described, a supporting frame consisting essentially of a vertically adjustable portion having tubular guides secured thereto, and upper and lower carbon controlling rods moving within the tubular guides and carrying the carbon-holders, substantially as described.

No. 26,330. Electric Arc Lamp.

(*Lampe électrique à arc.*)

Howard L. Pyle, Akron, Ohio, U.S., 26th March, 1887; 5 years.

Claim.—1st. In an electric arc lamp, the combination, with carbon separating or lifting magnets permanently in the main circuit, the armature whereof is provided with a depending arm having a bearing at its free end, in which is mounted the free end of the feed actuating shaft, and a hook within which the carbon feeding and separating shaft is lifted into working position and there supported in pitch relation to the gear on the actuating shaft, of an electro-magnet of high resistance in a shunt spanning the arc, a vibrating armature in the field of the shunt and carrying a movable contact, whereby the shunt circuit is intermittently magnetized during the continuance of abnormal resistance to the arc, and a carbon feeding motor device connected to, and arranged to be operated by the vibrations of the said armature, as set forth. 2nd. In an electric arc lamp, the combination, with carbon feeding, separating or lifting magnets permanently in the main circuit, and carbon holding and feeding devices therefor, substantially as shown and described, of an arm depending from the armature of the said lifting magnets and having a bearing at its free end in which is mounted the free end of the feed actuating shaft, and a hook within which the carbon feeding and separating shaft is lifted into working position, and there supported in pitch relation to the gear on the actuating shaft, a vibrating armature connected to and controlling the carbon feeding mechanism, and an electro-magnet of high resistance spanning the arc and constituting the shunt circuit therefor, and operating when energized by the abnormal resistance of the arc to vibrate said armature and actuate the carbon feeding mechanism, substantially as described. 3rd. In an electric arc lamp, the combination of suitable carbon holding devices, and mechanism substantially as described, for feeding the carbons towards each other, a pair of lifting magnets permanently in the main circuit, the armature whereof is provided with an arm connected to the carbon feeding mechanism, whereby, on establishing the current, said mechanism is raised into working position and there supported during its continuance, an electro-magnet of high resistance located in a shunt around the arc, and provided with a vibrating armature carrying a movable contact, whereby the shunt circuit is intermittently magnetized during the continuance of abnormal resistance at the arc, and a carbon feeding motor device connected to, and arranged to be operated by the vibrations of the said armature, as set forth. 4th. In an electric arc lamp, the combination, with suitable carbon feeding mechanism, of

a carbon separating or lifting magnet J, having pole pieces formed with sloping sides K¹ and an armature J¹ therefor, formed with up-turned ends J², lapping the sloping portions of said poles, thereby extending the field of force of said magnet, as described. 5th. In an electric arc lamp of the kind described, the combination, with the carbon-holding devices, of a pair of lifting magnets J, having pole pieces K, sloped at their outer sides and provided with the pins L, an armature J¹ therefor, formed with up-turned ends J², lapping said poles and supported upon the pins L, feeding devices arranged to be supported by said armature, a positively actuated motor device for rotating the feed mechanism, and an electro-magnet of high resistance located in a sheet around the arc, and provided with a vibrating armature, and means connected to said armature and to the carbon-feeding mechanism, whereby the armature is vibrated and the carbon caused to approach whenever the resistance of the main circuit exceeds a pre-determined point, substantially as shown and described. 6th. The combination in an electric arc lamp of the kind described, of a stationary base, a post moving transversely thereon, a lever for adjusting the post transversely, and a set-screw, whereby the post is secured in its adjusted position, as set forth. 7th. In an electric arc lamp of the kind described, the combination of a hollow post or support provided with a screw-threaded rotatable nut secured within its upper portion, a table or frame adapted to support the working parts of the lamp, and formed with a stem extending through the nut and into the post, and suitably screw threaded, whereby it is rendered vertically adjustable therein, substantially as described. 8th. In an electric arc lamp of the kind described, the combination, with a hollow post or support having a screw-threaded rotatable nut secured at its upper portion, a table or frame adapted to support the working parts of the lamp, and formed with a stem extending through the nut, whereby it is rendered vertically adjustable, and having a key way at one side of the said stem, a stop registering with said key and secured to the post, and a set-screw also registering with said key way and secured to the post, as set forth. 9th. In an electric arc lamp of the kind described, the combination of carbon holders formed with racks on one of their sides, a tilting shaft having pinions engaging the racks and arranged to move the carbon rods in opposite directions simultaneously, a worm wheel at its tilting end and a fixed support therefor, a second tilting shaft having at its fixed end a motor device, and at its tilting end a worm gear, a lifting magnet in the main circuit, the armature whereof is provided with a depending arm having a bearing at its free end in which is mounted, the free end of the motor shaft and a hook within which the carbon separating and feeding shaft is lifted from its fixed support into working position, and there supported in pitch relation to the worm on the outer shaft, substantially as described.

No. 26,331. Reed Organ. (*Orgue harmonium*.)

James B. Hamilton, Worcester, Mass., U. S., 28th March, 1887; 5 years.

Claim.—1st. The valve arranged to turn down aside of its actuating wire or bar, and having its operative arm or lever applied thereto, so as to admit of it, while being turned down, of being moved out of engagement with the said wire or bar, all being essentially and for the purpose as specified. 2nd. The reed provided with the gate extending from it, as represented, to aid in closing the reed entrance part of the reed receiving socket. 3rd. The reed air induction passage or cell, provided with the reed entrance port, and the bridge or bearing A for the reed gate and valve to rest against, such bearing being at one end of such passage, and all being substantially as represented. 4th. The combination of the reed induction passage or cell, and the two reeds arranged in its upper and lower parts and having gates to them, as set forth, with a single valve applied to such passage at one end thereof, and with bridges or bearings for the gates and the valve near its upper and lower ends to rest against. 5th. The combination, with the reed induction passage or cell, provided with a reed port, and a valve bearing in the upper as well as in the lower part of its mouth, with two reeds having gates to rest against such valve bearings and aid in closing the reed socket parts, and with a single valve to rest against such bearing and having an aperture or passage through it, for extraction or insertion of one of the reeds through it the said valve, all being substantially as set forth. 6th. The combination of the slide or cut-off E, arranged between the induction and suction chambers with them, their reed and the valve applied to the induction chamber, all being substantially as set forth. 7th. The slide or "cut off" cell formed as described, and provided with the closing strip *n* fastened in place by screws arranged in the front of the reed cells. 8th. The combination of the knee lever and its operative spring with the valve, all being substantially as set forth. 9th. The combination of the valve, and an arm or knee lever projecting therefrom with the actuating spring of the latter, and with the valve operative rod or bar provided with the button or shoulder, arranged so as to admit of said valve, and arm or knee lever being turned down in a manner to carry the latter out of engagement with the rod or bar and the valve down to or nearly to a horizontal position, and to cause said valve to be supported or held therein by the spring, such spring on the valve being raised to its seat serving to press it closely thereon.

No. 26,332. Reed Organ. (*Orgue harmonium*.)

James B. Hamilton, Worcester, Mass., U. S., 28th March, 1887; 5 years.

Claim.—1st. The combination of the lower reed chamber valve and its operation lever, with the upper reed chamber valve, and a pivoted arm projecting down therefrom and applied to the said operative lever, by means to enable it when moved to force its valve off its seat, and to cause the arm to be simultaneously moved to force its valve off its seat, such lever and arm being provided with spring for imparting reverse movements to them to close their valves upon their seats, as explained. 2nd. The combination, with the two reed valves and their operative lever, and arm arranged as represented, of the turn button pivoted to the said arm and extending down in front of the upper arm of the lever, as set forth. 3rd. The combination of the valve and its furcated knee lever, with the actuating spring of the said lever, and with the valve operative rod provided

with the two buttons *m* and *n*, and having below the lower one a guide or means for it the said lever button to rest on when the knee lever is turned down, all being substantially as set forth. 4th. The combination, with the reed chamber and its reed and register, of the reed tongue vibrating chamber and its throat or duct arranged with such reed and register, substantially as set forth. 5th. The combination of the reed valve lever actuating wire provided with the three buttons arranged on it as represented, with the lever applied to the wire over its lowest button, the wire guide or guides and the furcated knee lever and its valve and spring, all being substantially and to operate as set forth. 6th. The register or cut off D, as composed of the two layers or strata of wood, and the interposed layer or stratum of cloth glued or cemented together.

No. 26,333. Train Signalling Apparatus.

(*Appareil à Signaux de chemin de fer.*)

Joseph P. A. Hanlon, John F. Hanlon and George O. Hanlon, Boston, Mass., U. S., 28th March, 1887; 5 years.

Claim.—1st. The improved coupling composed of two members, each having two conducting wires, provided with segmental metallic terminals, a pivoted coupling hook centrally located in each member circuit closing devices, substantially as described, which are made in operative by the connection of said members, and operated automatically when said members are disconnected, a casing entirely surrounding the mechanism in each member, said casing being provided with segmental flanges at their forward ends, said flanges of the casing of each member being supported by spacers adapted to receive the flanges of the other member, and thereby serving as guides connecting the members, as set forth. 2nd. The improved coupling composed of two members 2, 3, each having two conducting wires *a*, *a*¹, provided with segmental metallic terminals *b*, *b*¹, a pivoted coupling hook centrally located in each member, circuit closing devices consisting of a spring impelled slide provided with the metallic ring *f* on its rear portion, and the two metallic plates *g*, *g*¹ in electrical contact respectively with the wires *a* and *a*¹, which circuit closing devices are made inoperative by the connection of said members and operative automatically when said members are disconnected, and a casing entirely surrounding the mechanism in each member, as set forth. 3rd. The combination, with the casings, of the two members provided with the wires *a*, *a*¹ having the metallic terminals *b*, *b*¹, the slides *c*, *c*¹, rods *d*, *d*¹, fingers *h*, *h*¹, coupling hooks *j*, *j*¹ pivoted in the forward ends of the slides, the metallic rings *f*, *f*¹ and metallic plates *g*, *g*¹, as set forth.

No. 26,334. Automatically Adjusted Locomotive Head Light. (*Lanterne de locomotive posée automatiquement*)

Howard L. Pyle, Akron, Ohio, U. S., 28th March, 1887; 5 years.

Claim.—1st. The combination, with a pivoted reflector and source of light, of an arm weighted at one end and pivoted at or near its other, and carried by the locomotive, the said reflector being pivoted at or near its front, and positively connected with the weighted arm, whereby the light is directed in a direction opposite to the movement of the weighted arm, substantially as set forth. 2nd. The combination, with a fixed reflector and suitable source of light, of a pivoted auxiliary reflector in front of the burner, whereby the beam of light can be directed away from the stationary plane of projection, substantially as shown and described. 3rd. The combination, with a reflector and a suitable source of light, of an auxiliary reflector pivotally mounted within said reflector, whereby the light can be directed away from the stationary plane of projection, substantially as shown and described. 4th. The combination, with the locomotive, of a head-light provided with a suitable parabolic reflector and a source of light, an auxiliary reflector pivoted within the reflector, and an arm weighted at one end, and pivoted at or near its other, and carried by the locomotive, the pivoted reflector being connected in the rear of its pivot with the weighted arm, whereby said auxiliary reflector will be swayed from one side to the other in accordance with the swing or lean of the locomotive when moving upon a curve, substantially as shown and described. 5th. The combination, with the moving vehicle, of a parabolic reflector and a suitable source of light, an auxiliary reflector pivoted near the front end of the reflector, the pivots of said auxiliary reflector provided with a laterally extending arm, a longitudinal shaft, a weight depending from said shaft, a crank arm extending upward therefrom and engaging the arm of the pivot of the auxiliary reflector, whereby the position of said auxiliary reflectors caused to respond to that of the swinging weight, substantially as set forth.

No. 26,335. Method of Operating Electric Brakes for Railways. (*Mode d'Actionner les freins électriques de chemins de fer.*)

Elias E. Ries, Baltimore, Maryland, U. S., 28th March, 1887; 5 years.

Claim.—1st. The herein described method of controlling the application of an electric current from a source of electricity to one or more translating devices, which consists in first sending a portion of the said current to such translating devices, and in them causing the current thus transmitted, or a portion thereof, to gradually increase the amount of current flowing to such devices from the said source of electricity, until the said current has reached the desired strength, substantially as set forth. 2nd. The herein described method of controlling the application of an electric current from a source of electricity to one or more translating devices, which consists in first limiting the amount or strength of current to be transmitted to said devices during the act of closing the circuit thereof, and then causing a portion of the current thus made to flow through the circuit, to automatically and gradually increase the amount of current transmitted until it has reached the desired strength, substantially as set forth. 3rd. The herein described method of transmitting an electric current from a source of electricity to one or more translating devices, which consists in first sending a portion of

the current to such translating devices by primarily closing the circuit in which the said translating devices are located, and then utilizing the transmitted current, or a portion thereof, to further control the supply of current to the translating devices by causing it to operate, or set in motion a suitable current regulating or transmitting apparatus, substantially as set forth. 4th. The herein described method of transmitting a current of electricity to one or more translating devices, which consists in primarily closing the circuit from a source of electricity through a suitable regulating or transmitting apparatus located in a shunt or branch of the circuit containing the translating devices, and then causing said apparatus, under the influences of the current thus transmitted, to automatically and gradually increase the amount or strength of current flowing through the circuit containing the translating devices, substantially as described. 5th. The herein described method of operating electric brakes for railways, which consists in first sending but a small portion of the entire available brake current to the electro-magnet brake devices, and then causing a portion of the transmitted current to automatically and gradually increase the flow of additional current to the brake magnets until they have reached their maximum strength. 6. The herein described method of operating electric brakes for railways, which consists in first sending but a small portion of the entire available brake current to the electro-magnet brake devices, and in their automatically increasing the amount of current transmitted, so that the brake devices will be brought up to their maximum or desired strength within a predetermined interval of time. 7th. The herein described method of operating electric brakes for railways, which consists in first sending but a small portion of the entire available brake current to the electro-magnet brake devices, and in simultaneously therewith setting in motion a suitable current transmitting and speed regulating device, to gradually and automatically apply the remaining portion of the current to the said brake devices within a uniform period of time. 8th. The herein described method of operating electric brakes for railways, which consists in first determining and limiting the amount of current to be transmitted to the electro-magnetic brake devices, at the moment when the circuit to said devices is first closed, and in automatically and uniformly increasing the flow of current to the brake devices until it has reached the predetermined or limited strength, substantially as set forth. 9th. The herein described method of operating electric railway brakes by means of an electrical current from a suitable source of electricity, which consists in primarily sending a portion of the current to the electro-magnetic brake devices for partially emerging the same, and in then automatically and gradually increasing, to any desired extent, the amount or strength of current transmitted to the said devices, by means of mechanism operated by a portion of the transmitted current itself. 10th. The herein described method of operating railway brakes by means of an electrical current from a suitable source of electricity, which consists in first passing a portion of said current to the brake circuit through a suitable current regulating or transmitting device, and then causing the current so transmitted, or a portion thereof, to operate the said device, to increase the working strength of the current flowing to the brake apparatus, substantially as set forth. 11th. The herein described method of transmitting a current of electricity to one or more translating devices, which consists in primarily closing the circuit from a source of electricity through a series of resistances in the circuit with said translating devices, and then through the instrumentality of the current thus caused to traverse the circuit, operating a suitable device for gradually and uniformly throwing out or reducing the resistance of the first-named circuit. 12th. The herein described method of transmitting a current of electricity from a normally closed working circuit to a normally open derived working circuit, which consists in first closing the last-named circuit through an artificial resistance, so as to divert only a small amount of current into the circuit, and then causing said diverted current, or a portion thereof, to gradually diminish or eliminate the resistance from the said circuit, and thereby increase the amount of current flowing therein from the first-mentioned circuit.

No. 26,336. Steam Boiler. (*Chaudière à Vapeur.*)

Karl A. Klose, Des Plaines, Ill., U.S., 23th March, 1887; 5 years.

Claim.—1st. The combination, with a steam boiler, substantially as described, and provided with the blow-off and hand holes, of the water gauge connected with the said boiler adjacent to the head thereof, and the gauge glass arranged about in line with the said hand holes, substantially as specified.

No. 26,337. Car-Coupling. (*Attelage de chars.*)

Sylvester A. Kilmer and Edgar J. Crandall, Binghampton, N.Y., U.S., 29th March, 1887; 5 years.

Claim.—1st. A draw-head for coupling links having a transverse throat, and in rear thereof an opening having a rearwardly and upwardly curved guide floor, and a slot in its upper wall, in combination with a laterally flattened claw-shaped key resting on said guide floor, and adapted to rise on said guide floor when pushed by the entering link, substantially as specified. 2nd. The combination, with a claw-head, having a narrow key-slot formed with an offset on its lower front portion, as at *a*, of the laterally flattened key having the taper wall, the shoulder *b*, and the lower rounded claw recessed in rear, substantially as specified. 3rd. The combination, with the draw-head having a key-slot, and the key having a shoulder in rear, of a top lug formed with an eye opening from front to rear of a hand-lever, and a chain connecting said hand-lever with the key, substantially as specified.

No. 26,338. Socket for Punches.

(*Douille pour découpoirs.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. The combination of a punch-holder having a chamber provided with a contracted punch-seat, and a punch provided with a

shank generally smaller than the mouth of said chamber, but having an enlargement near its end, and adapted to reach into said chamber beyond said seat, and to be retained in said holder by said seat and said enlargement, as and for the purpose specified. 2nd. The combination of a punch-holder having a chamber provided with a contracted punch-seat, and a punch provided with a shank generally smaller than the mouth of said chamber, but having an enlargement near its end, and adapted to reach into said chamber beyond said seat, and to be retained in said holder by said seat and said enlargement, a spring pressing said enlargement, a pressing said enlargement into said seat in said holder, as and for the purpose specified. 3rd. The combination of a punch-holder having a chamber provided with a contracted punch-seat, a punch provided with a shank generally smaller than the mouth of said chamber, but having an enlargement near its end, and adapted to reach into said chamber beyond said seat, and to be retained in said holder by said seat and said enlargement, a vertical screw turning in said holder above said punch and thrusting against a spring interposed between the upper end of said punch and said vertical screw, as and for the purpose specified. 4th. The combination of a punch-holder having a chamber provided with a contracted punch-seat, and a punch provided with a shank generally smaller than the mouth of said chamber, but having an enlargement near its upper end, and adapted to reach into said chamber beyond said seat, and to be retained in said holder by said seat and said enlargement, and two or more screws passing radially through the lower part of said chamber and thrusting against said shank, as and for the purpose specified. 5th. The combination of a punch-socket, a punch adapted to move laterally in said socket, and screws passing radially through the lower part of said socket, and thrusting against the shank of said punch, as and for the purpose specified.

No. 26,339. Socket for Punches.

(*Douille pour découpoirs.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. The combination of a holder having at its lower end a chamber, a cylindrical plug secured in said chamber, said plug having a central opening and a hemispherical cavity in its top, a ball having a central conical opening, a punch having a conical head adapted to be received into said conical opening, and a punch, substantially as described. 2nd. The combination of a holder having at its lower end a chamber, a cylindrical plug secured in said chamber, said plug having a central opening and a hemispherical cavity in its top, a ball having a conical central opening, a punch having a conical head adapted to be received into said opening, two or more screws turning in screw-threaded holes in the lower part of said plug radially to the punch, and a punch, substantially as described. 3rd. The combination of a holder having at its lower end a chamber, a cylindrical plug secured in said chamber, said plug having a central opening and a hemispherical cavity in its top, a ball having a central conical opening, a punch having a conical head adapted to be received into said conical opening, a punch, a spring and a screw passing through the top of said holder, and adapted to compress said spring between said screw and the upper end of the conical head of said punch, substantially as shown and described. 4th. The combination of the head, the holder, or sleeve provided, at its ends with external screw-threads, and having in its lower end a chamber, the lower end of said chamber being provided with an internal screw-thread to a cylindrical plug, having an external screw-thread to engage with the threads of said chamber, and having a central vertical opening, and in the top a hemispherical cavity, a ball having a central conical opening, a conical plug adapted to fill said conical opening, and having a central orifice to receive the upper end of a punch, and a punch, substantially as shown and described.

No. 26,340. Die for Drawing Metal Blanks.

(*Laminoir-dégrossisseur.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. A die provided with one or more grooves in the walls of the die-opening, as and for the purpose specified. 2nd. A die having its inner wall recessed in one or more parts of the die-opening, whereby the blank expanding into said recess may be stripped from the punch, substantially as shown and described.

No. 26,341. Device for Regulating the Movement of Oscillating Shafts. (*Appareil pour Régler le Mouvement des Arbres oscillants.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. The combination of an oscillating carrier-shaft, provided with projections thereon, and the swing stops, substantially as shown and described. 2nd. The combination of the oscillating carrier-shafts, provided with projections, and the swing-arms provided with adjustable stops, as and for the purpose specified. 3rd. An oscillating carrier-shaft, provided with projections which strike against one end of a swing-arm, the other end of said arm being provided with screw-threaded bolts, whereby the movement of said arm may be limited by said bolts striking against a surface on either side of said swing-arm, substantially as shown and described. 4th. The combination of an oscillating carrier-shaft, provided with projections which strike against one end of a swing-arm, the other end of said arm being provided with screw-threaded bolts, whereby the movement of said swing-arm may be limited by said bolts striking against a surface on either side of said swing-arm, and springs attached to said swing-arm, and projecting therefrom and striking against said surfaces, as and for the purpose specified. 5th. The combination of a series of carrier-shafts provided with gears, each of said gears engaging with a separate rack, each of said racks being adjusted independently of all the other racks of such series, substantially as shown and described.

No. 26,342, Punch and Die for Cleaning Shells. (*Déconpoir et Matrice pour Nettoyer les Coquilles.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. The combination of a die and a punch, said punch being provided at a distance from its end, as great as the thickness of said die, with a downwardly tapering enlargement, as and for the purpose specified. 2nd. The combination of a die and a punch, said punch being provided at a distance from its end, as great as the thickness of said die, with a downwardly tapering conical enlargement, as and for the purpose stated. 3rd. The combination of a die, a punch, said punch being provided at a distance from its end, as great as the thickness of said die, with a downwardly tapering enlargement and the die-rail, as and for the purpose specified. 4th. The combination of the trimming-die provided with an annular cutting-edge, and a punch adapted to press the upper end of a shell outward against said cutting-edge to trim said shell, as and for the purpose specified. 5th. The combination of the die, provided with an annular cutting-edge around its die-opening, a tube tapered at its lower end, a rod sliding in said tube, and a spring compressed between said rod and the end of said tube, as and for the purpose specified. 6th. The combination of the die provided with an annular cutting-edge around its die-opening a cylindrical tube larger than said die opening and tapered at its lower end, and provided with one or more slots in its wells, a cylindrical rod adapted to slide freely in said tube a spring arranged to crowd said rod endwise out of said tube, a pin driven into said rod and projecting outward into said slot or slots, as and for the purpose specified. 7th. The combination of the punch, provided with longitudinal knives, and a die, as and for the purpose specified.

No. 26,343. Machine for Drawing Cartridge Shells. (*Machine pour tirer les étuis des Cartouches.*)

Rollin White, Lowell, Mass., U.S., 29th March, 1887; 5 years.

Claim.—1st. The combination and arrangement of a series of dies and a series of punches in zigzag lines, whereby any die with its corresponding punch may be adjusted independently of the other dies and punches of the series, and one or more carriers for conveying the partially drawn blanks from die to die, substantially as shown and described. 2nd. The combination and arrangement of a series of dies, and a series of punches in zigzag lines, whereby any die and its corresponding punch may be adjusted independently of the other dies and punches of the series, and carriers adapted to convey blanks from die to die of such series, substantially as shown and described. 3rd. The combination of a series of stationary die-plates containing dies, said dies being arranged in zigzag lines, and carriers having one or more perforations for the purpose of conveying the partially drawn blanks from one stationary die to another, as and for the purpose specified. 4th. The combination of the intermittently moving carrier, its shaft and the journal-box adjustable laterally, substantially as shown and described. 5th. In an automatic machine for drawing-planks, two or more carriers provided with shafts, said shafts turning in boxes having a lateral adjustment, in combination with a series of dies, and a series of punches arranged in zigzag lines, as and for the purpose specified. 6th. The combination of a series of punches and a series of dies, one or more carriers supported on shafts provided with gears, a rack engaging with said gears secured to a bar having a reciprocating motion, and said bar, said rack being so secured to said bar that it may be moved to adjust it to the required motion of the carriers, substantially as described. 7th. The combination of a series of punches and a series of dies, the carriers supported on carrier shafts, said shafts provided with gears, and a rack adapted to engage with said gears, and having an intermittent vibratory motion imparted to it whereby the carriers are oscillated to and fro, substantially as shown and described. 8th. The combination of a series of punches and a series of dies arranged in zigzag lines, carriers adapted to convey the partially-drawn blanks from die to die, said carriers being supported on carrier-shafts having an intermittent oscillating motion communicated to them through an intermittently-moving rack which engages with gears secured to said shafts the rack the carrier shafts and their gear and a cam etc., and a cam adapted to move said rack only when the punches are raised out of the dies, substantially as shown and described.

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

830. G. DEE, 2nd 5 years of No. 14,325, from the 6th day of March, 1887. Improvements on Stove Carriers, 2nd March, 1887.
831. G. B. DOWSWELL, 2nd 5 years of No. 14,388, from the 8th day of March, 1887. Improvements on Washing Machines, 2nd March, 1887.
832. J. A. AWALT, 2nd 5 years of No. 14,337, from the 6th day of March, 1887. Improvements on Regulators for Watches, 5th March, 1887.
833. M. HURLY, 2nd 5 years of No. 14,702, from the 29th day of April, 1887. Apparatus for Heating Railway Cars, 5th March, 1887.
834. T. GUENIN, 3rd 5 years of No. 7,646, from the 16th day of July, 1887. Improvements in Sewer Traps, 5th March, 1887.
835. J. A. CHADWICK, 3rd 5 years of No. 7,181, from the 8th day of March, 1887. Improvements on a Machine for Threading and Flanging Metal Caps for Fruit Jars, 7th March, 1887.
836. J. HENDERSON, 2nd 5 years of No. 14,391, from the 11th day of March, 1887. Improvements on Candy Boxes, 9th March, 1887.
837. W. F. COOK, 2nd 5 years of No. 14,402, from the 13th day of March, 1887. Improvements on Door Knob Alarms, 9th March, 1887.
838. G. W. FREEMAN, 2nd 5 years of No. 14,615, from the 19th day of April, 1887. Improvements on Machines for Reaping, Mowing, etc., 9th March, 1887.
839. J. B. STONE, 2nd and 3rd 5 years of No. 25,939, from the 7th day of February, 1892. Improvements in the Manufacture of Wire Ropes and Cables, 9th March, 1887.
840. W. CHAPLIN, 2nd 5 years of No. 14,377, from the 10th day of March, 1887. Improvements in Garden Rakes, 9th March, 1887.
841. T. MCCOSH, 2nd 5 years of No. 14,642, from the 21st day of April, 1887. Improvement on Barbs and Barb Wire Fences, 11th March, 1887.
842. J. DRAPER, 2nd 5 years of No. 14,736, from the 6th day of May, 1887. Improvements on Walking Sticks, 11th March, 1887.
843. E. MILLER, J. H. ELLIS, and ALFRED B. ATHERTON, 3rd 5 years of No. 7,274, from the 29th day of March, 1887. Improvements on Carriage Canopy Tops, 11th March, 1887.
844. E. LUCK, 2nd 5 years of No. 14,412, from the 15th day of March, 1887. Improved Apparatus for Acetifying Alcoholic Wash and Maturing Spirits, 14th March, 1887.
845. E. LUCK, 2nd 5 years of No. 14,430, from the 17th day of March, 1887. Improvements on Apparatus for the Gelatinization or Conversion of Unmalted Grain, 14th March, 1887.
846. F. S. BARFF and G. BOWER, 2nd 5 years of No. 14,442, from the 18th day of March, 1887. Improvements on Furnaces Employed in the Protection of Iron and Steel Surfaces, 14th March, 1887.
847. THE BERLIN MACHINE WORKS, 2nd 5 years of No. 14,581, from the 11th day of April, 1887. Improvements on Wood Polishing Machines, 5th March, 1887.
848. R. L. WALKER and A. HALL, 3rd 5 years of No. 7,278, from the 29th day of March, 1887. Improvements on Furnaces for the Combustion of Fuel, 17th March, 1887.
849. J. B. BOWES, 2nd 5 years of No. 14,455, from the 21st day of March, 1887. Improvements on Artificial Hands, 17th March, 1887.
850. THE FORD JOHNSON CO (assignee), 2nd 5 years of No. 14,558, from the 21st day of March, 1887. Improvements in Machinery for Weaving Cane, 17th March, 1887.
851. S. COXON, 3rd 5 years of No. 7,287, from the 21st day of March, 1887. Improvements on Signal Lamps, 19th March, 1887.
852. LA SOCIETE ANONYME LA PLANCLASTITE (assignee) from the 20th day of April, 1887. Explosive Compound, 22nd March, 1887.
853. F. W. BARFF (executor), 2nd 5 years of No. 14,503, from the 29th day of March, 1887. Compound in the Preservation of Organic Substances, 22nd March, 1887.
854. R. ROSCHMAN, 2nd 5 years of No. 18,301, from the 14th day of December, 1882. Improvements in Buttons, 22nd March, 1887.
855. G. WALKER and E. WILKES, 2nd 5 years of No. 14,533, from the 3rd day of April, 1887. Improvements on the manufacture of Compressed Fuel from Saw-Dust, 23th March, 1887.
856. P. ARMINGTON, 2nd 5 years of No. 14,667, from the 26th day April, 1887. Improvements on Steam Engine Governors, 28th March, 1887.
857. P. ARMINGTON, 2nd 5 years of No. 14,701, from the 29th day of April, 1887. Improvements on Valves for Steam Engines, 28th March, 1887.
858. J. H. HATTON, 3rd 5 years of No. 7,296, from the 21st day of March, 1887. Improvement on Life Boats, etc., 29th March, 1887.

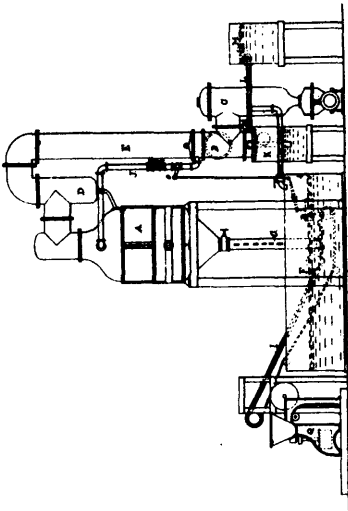
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

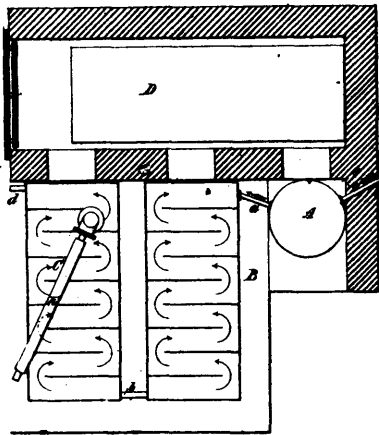
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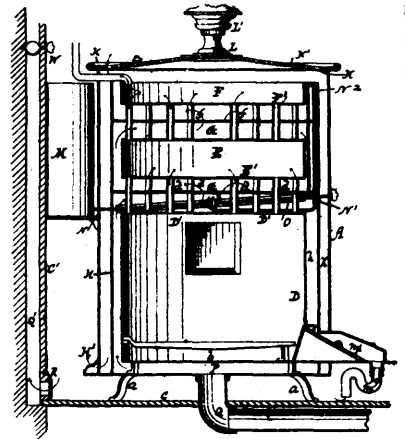
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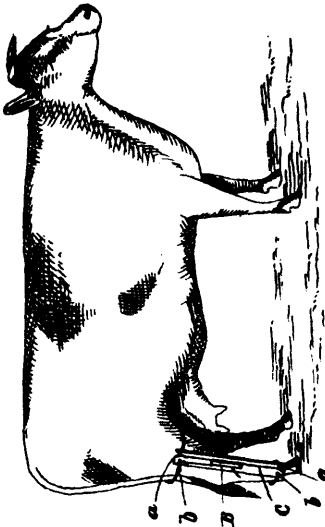
26118 Peters' Evaporating Apparatus.



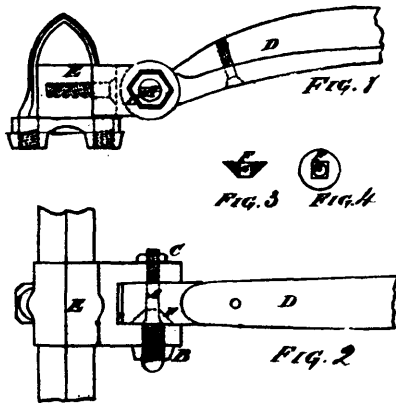
26119 Herreshoff's Machine for making Sulphuric Acid.



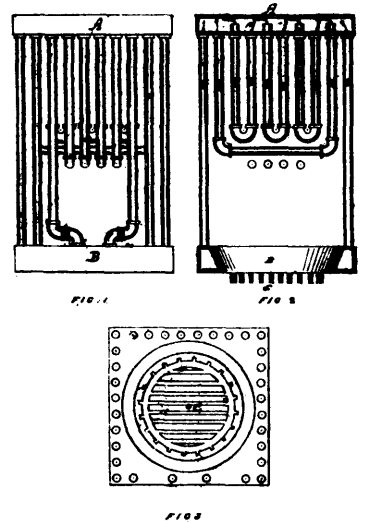
26120 Kew's Heating and Ventilating Apparatus.



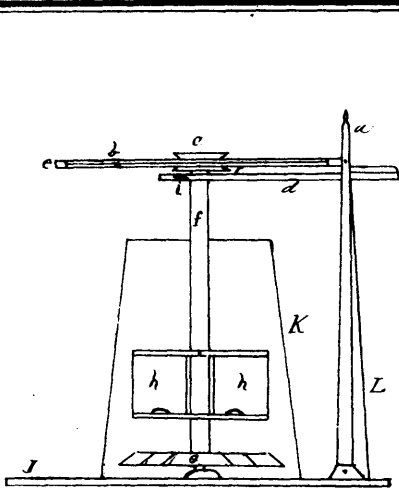
26121 Stokes' Hopples and Tail Holder.



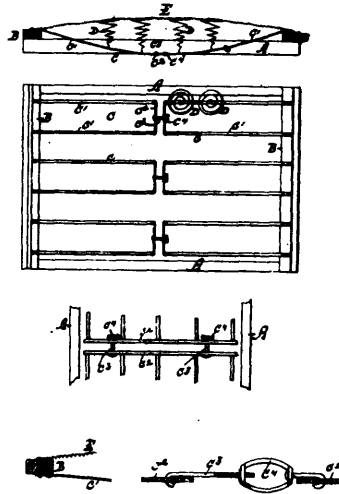
26122 Martineau's Carriage Pin.



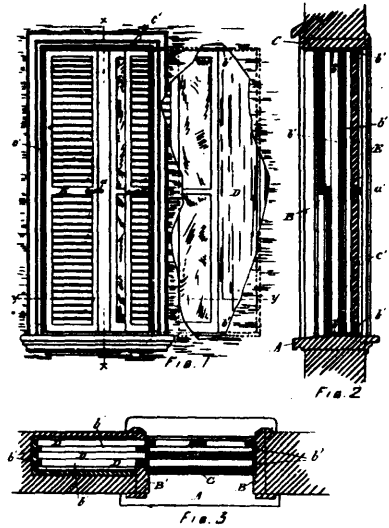
26123 McAndrew & Noble's Heating Boiler.



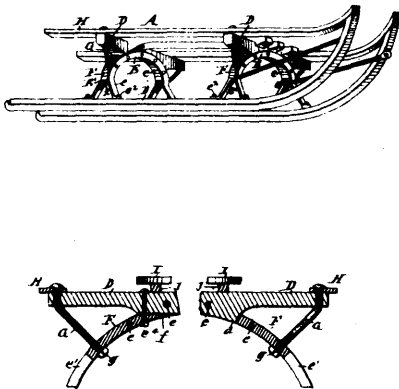
26124 Seger's Churn.



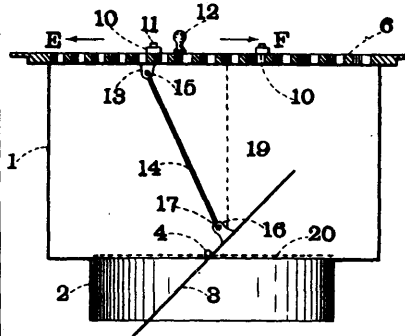
26126 Ames' Bed Bottom.



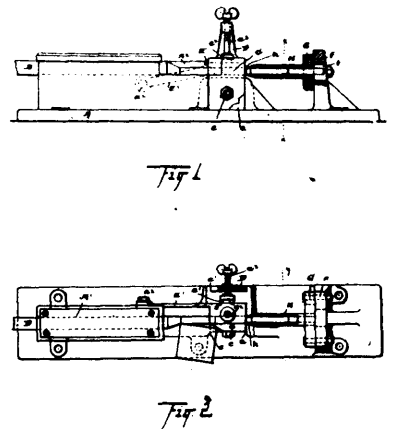
26126 Thibault's Casing for Windows, etc.



26127 Fisher's Bob Sled and Sleigh.



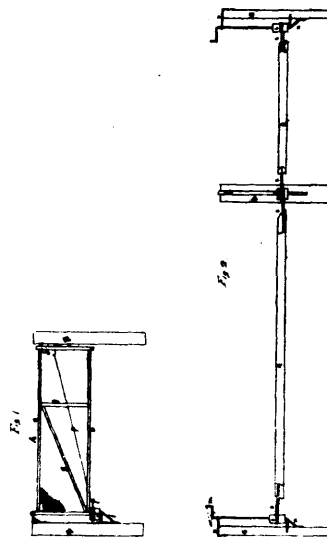
26128 Tallmage's Hot Air Register, Border and Box.



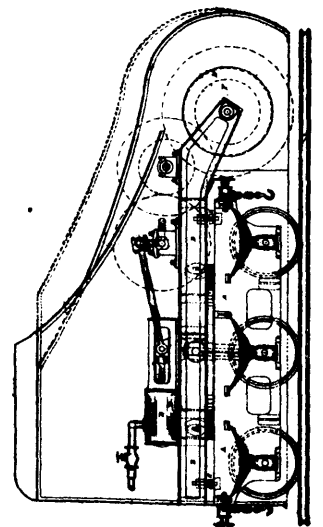
26129 Stewart's Machine for Making Dowel Pins.



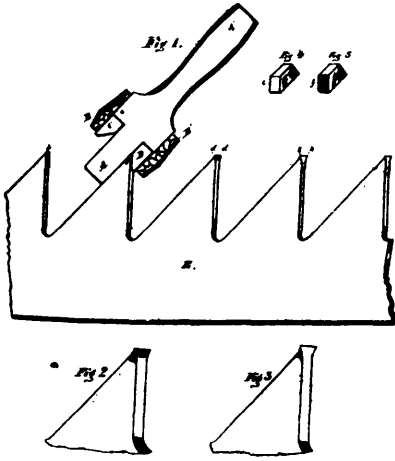
26130 Taylor's Bustle.



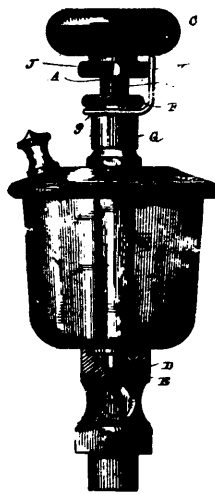
26131 Mennie's Farm Gate.



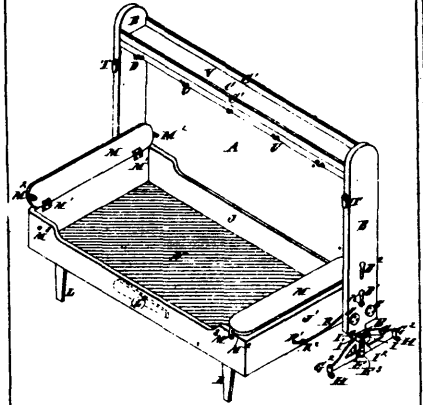
26132 Plenderleith's Snow Plough and Excavator.



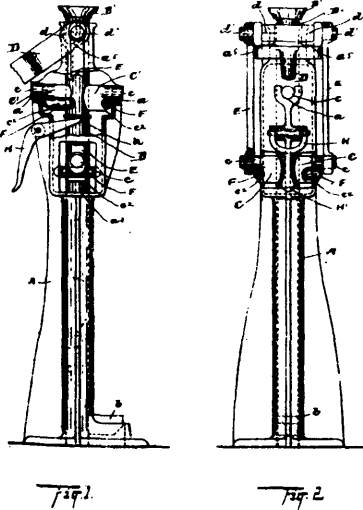
26133 Quinlan's Saw Swage.



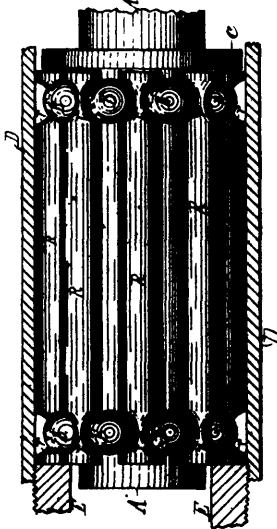
26134 Hall's Valve Governor.



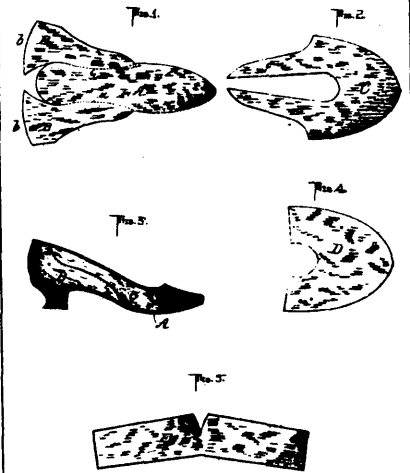
26135 Peace's Knockdown Folding Bedstead.



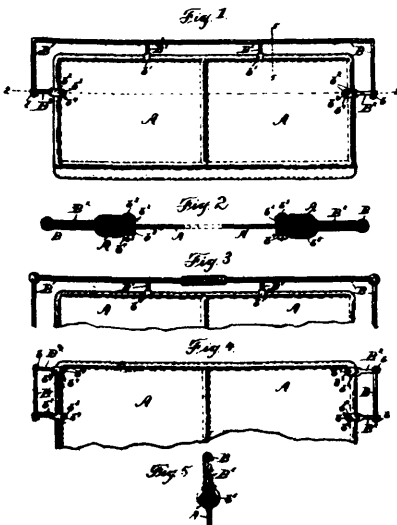
26136 Hawkins' Lifting Jack.



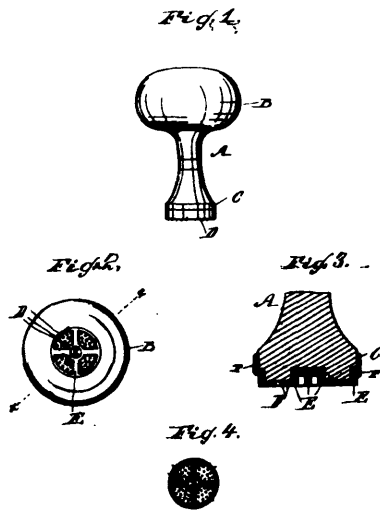
26137 Gibbon's Roller Bearing.



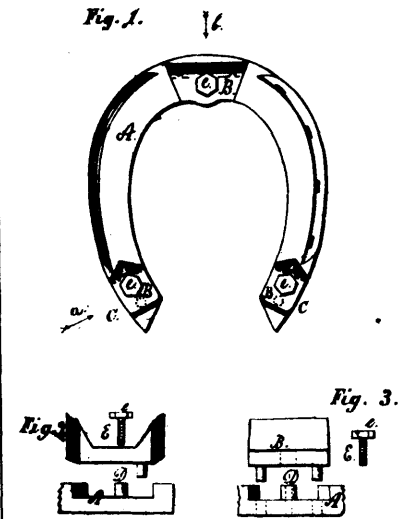
26138 Cosart's Shoe.



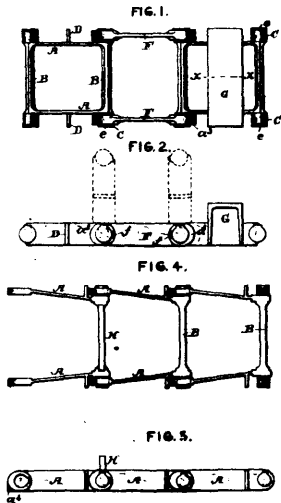
26139 Logan's Ball for Dash Boards.



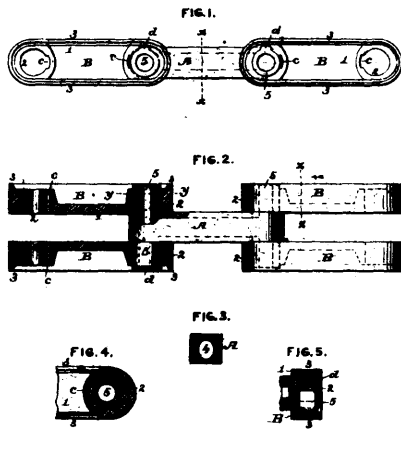
26140 Lusenberg & Sachs' Stamp Cancellor.



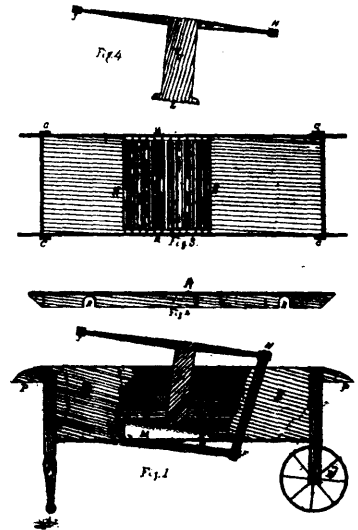
26141 Phillips, Bouchard & Charbonneau's Horse Shoe.



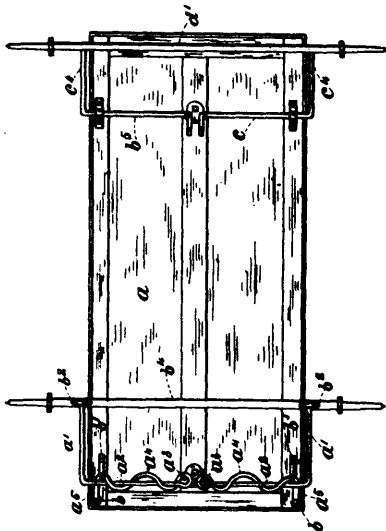
26142 Garland's Chain Conveyor.



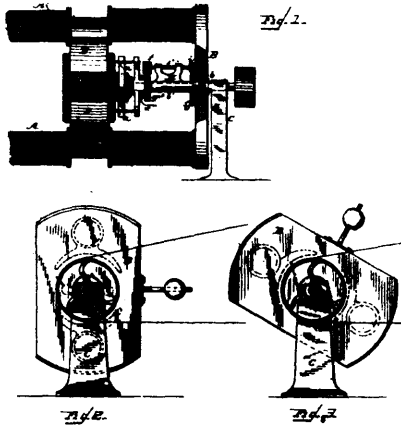
26143 Garland's Carrier and Drive Chain.



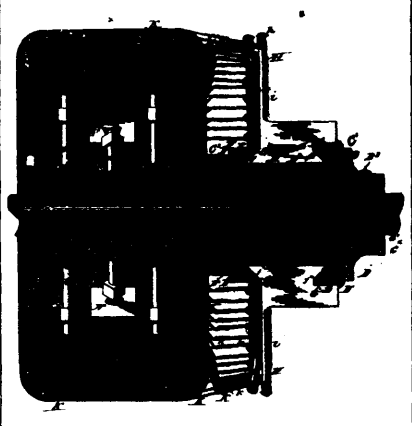
26144 Wallace's Washing Machine.



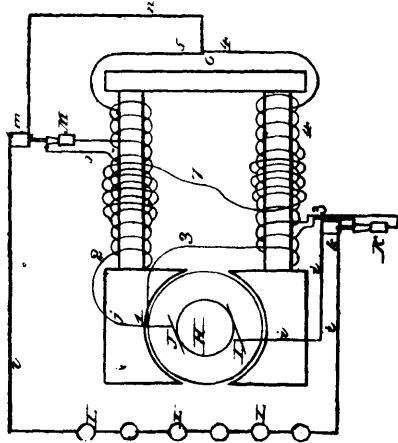
26145 Mulholland's Vehicle Spring.



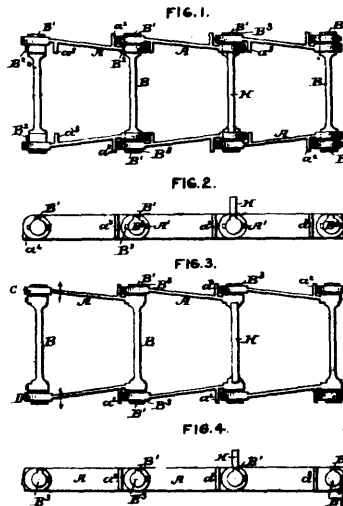
26146 Ball's Dynamo-Electric Machine.



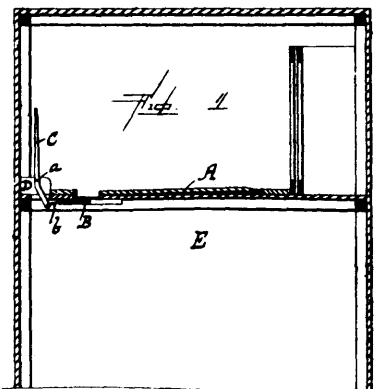
26147 Ball's Dynamo-Electric Machine.



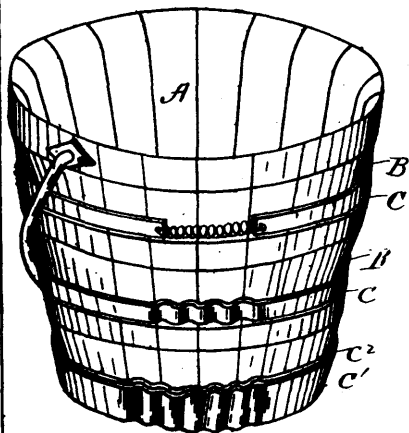
26148 Ball's Regulator for Dynamo-Electric Machines.



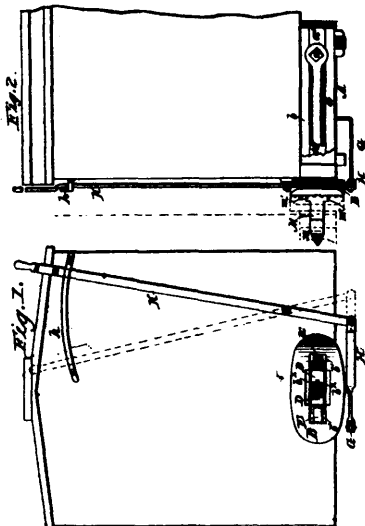
26149 Garland's Chain Conveyor.



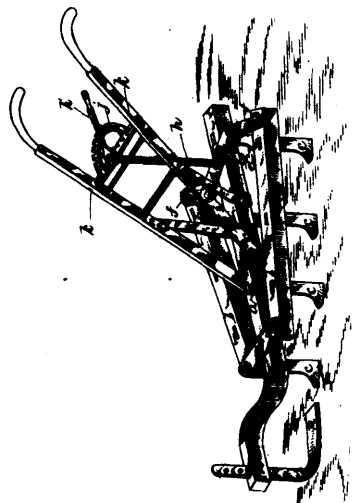
26150 St. German's Stable Floor.



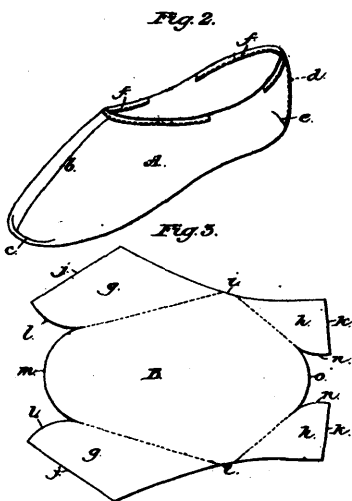
26151 Rice's Staves for Pails, Barrels, etc., and Method of Fastening the Same.



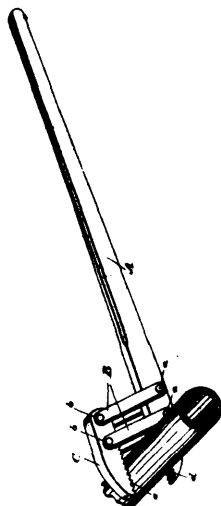
26152 Ketteringham's Car-Coupling.



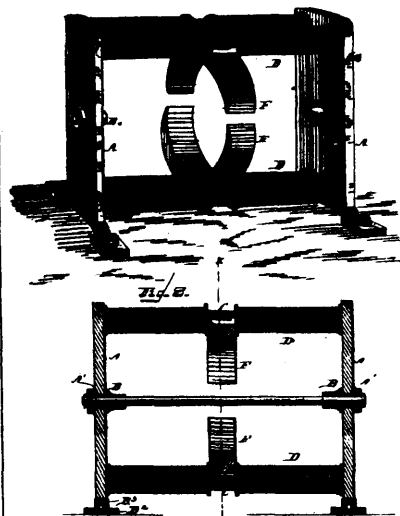
26153 Mellett's Cultivator.



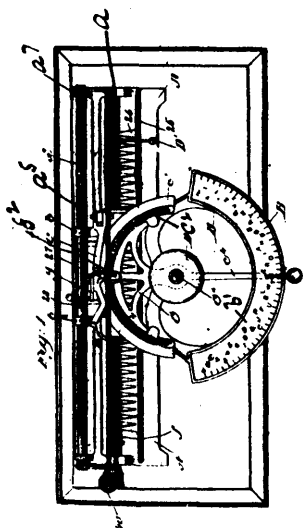
26154 Shaw's Stocking-Protector.



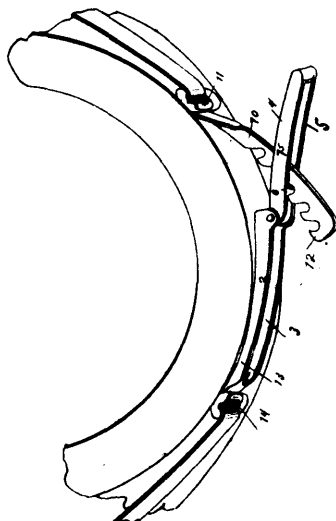
26155 Phillips' Wrench.



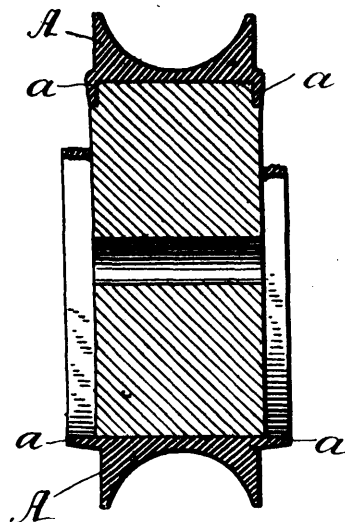
26156 Ball's Dynamo Electric Machine.



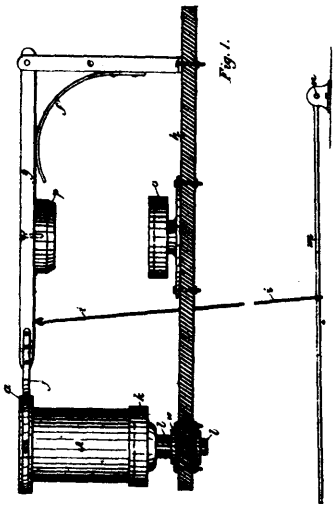
26157 Becker's Type Writer.



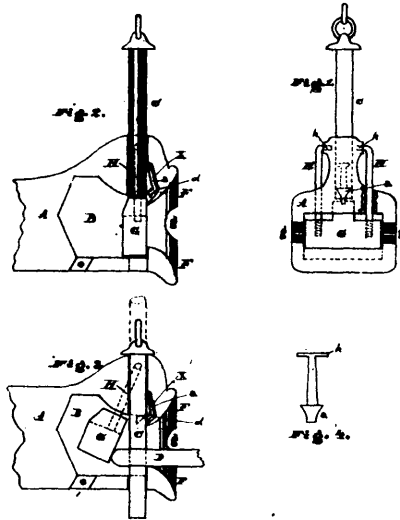
26158 Baker's Hame Fastener.



26159 Torrey's Pulley Sheave.



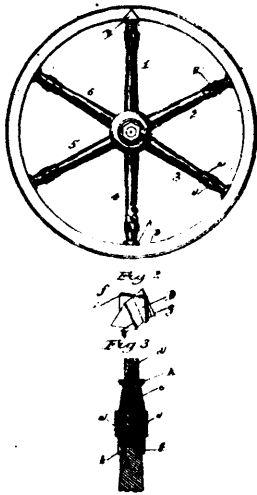
26160 Lang's Soldering Tool.



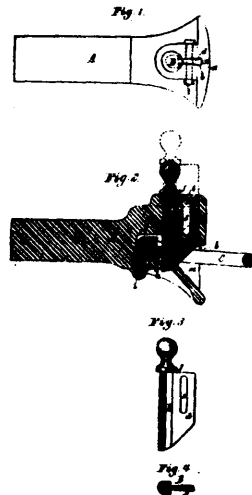
26161 McEntree & Richter's Car-Coupling.



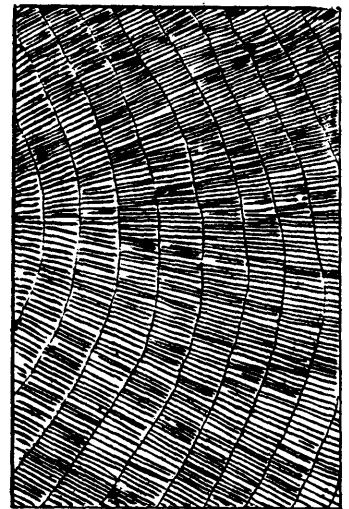
26163 Ouellet's Porpoise Weir.



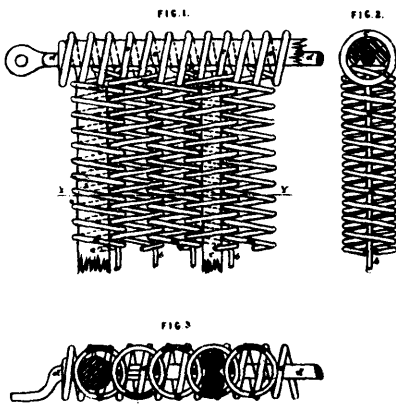
26164 Gray's Vehicle Wheel.



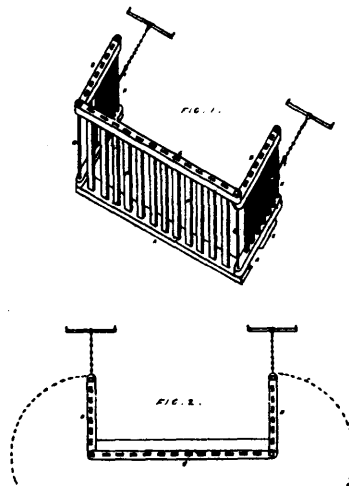
26165 Atwood's Car-Coupler.



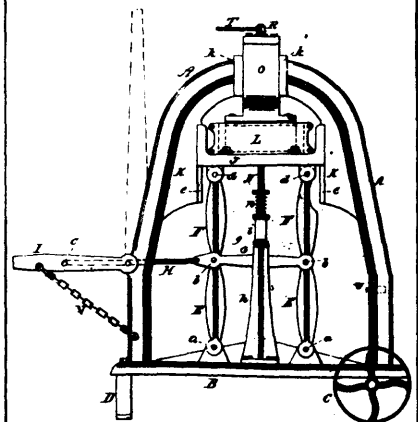
26166 Hough's wooden Business and Fancy Cards.



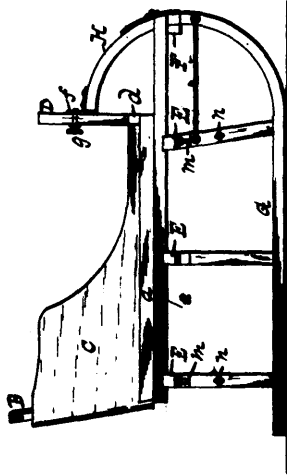
26167 Gilleaume's Wire Mat.



26188 Hodgson's Harvesting Machine.



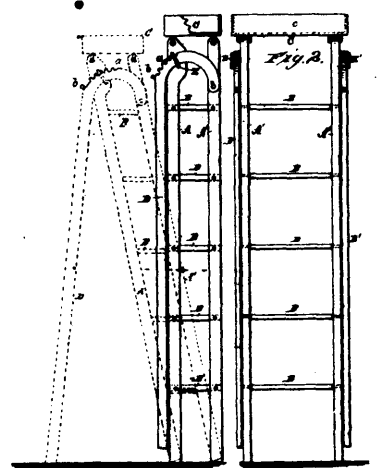
26189 Raymond's Brick Machine.



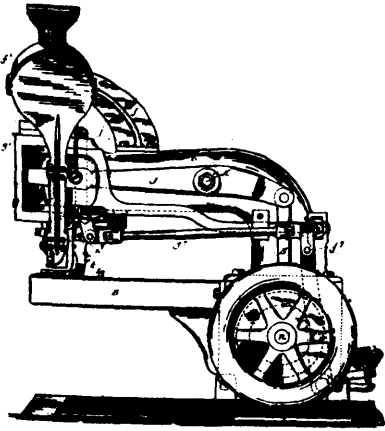
26170 Hewitt's Sleigh.



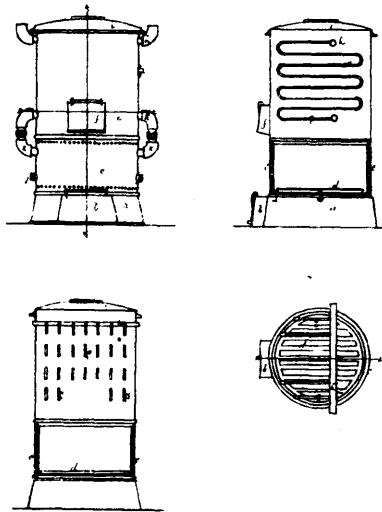
26171 Bernd's Snap Hook, Halter Ring, etc.



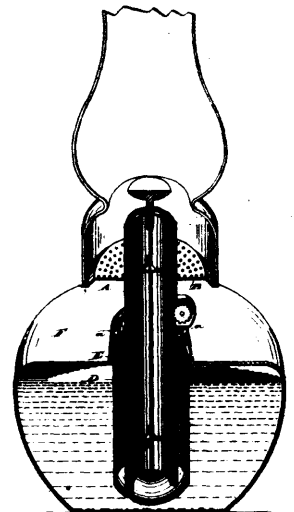
26172 Macnider's Step Ladder.



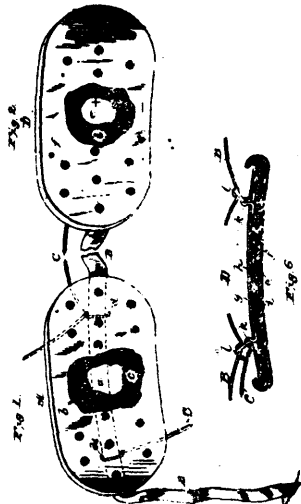
26173 Mathison's Machine for Sewing on Buttons.



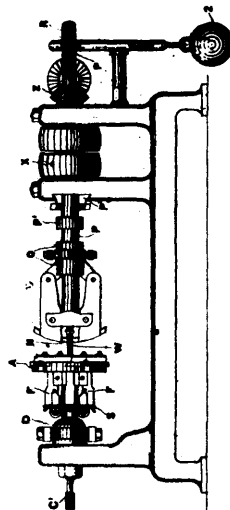
26174 Britton & Brunet's Hot Water Heater.



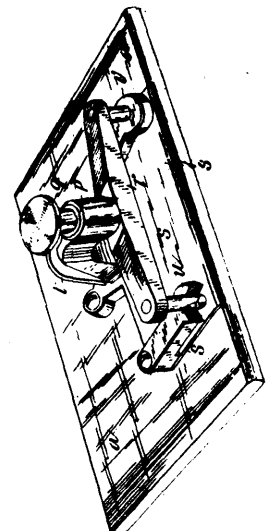
26175 Harvey's Lamp Burner for Circular Wicks.



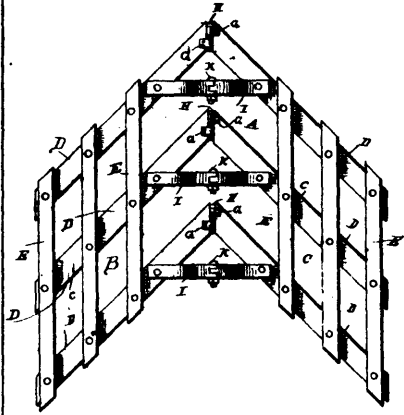
26176 Charles' Electrical Appliance for Body Wear.



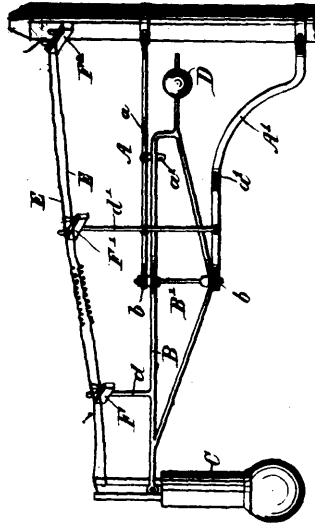
26177 Smith's Screw-Cutting Machine.



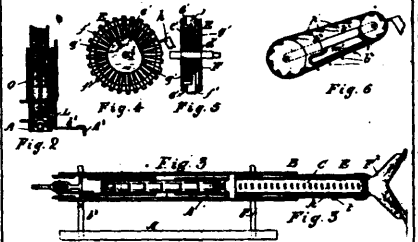
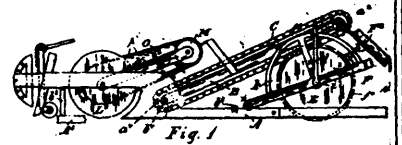
26178 Fish's Paper Punch.



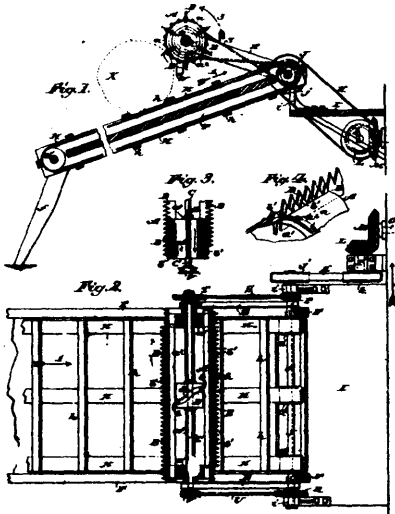
26179 Alshouse's Harrow.



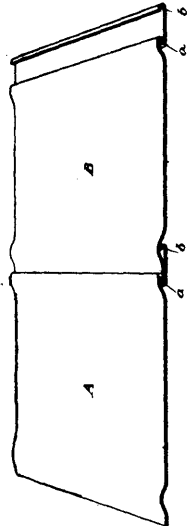
26180 Thomson's Hanger for Electric Lamps.



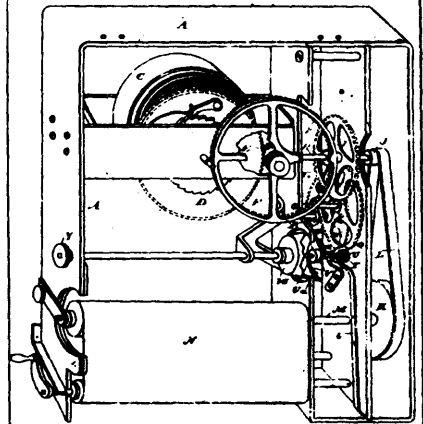
26181 Mason's Elevator Draining Plough.



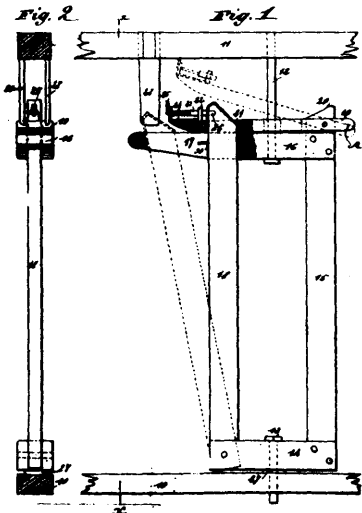
26182 Ardoch's Band Cutter for Threshing Machines.



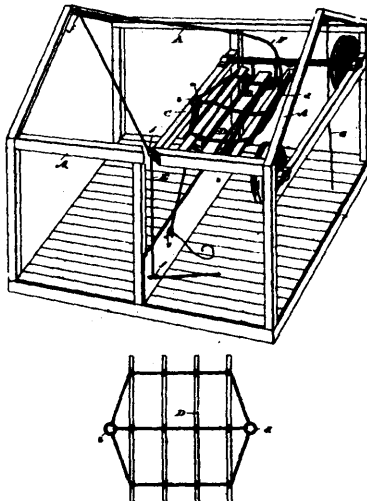
26183 Montross' Metal Shingle.



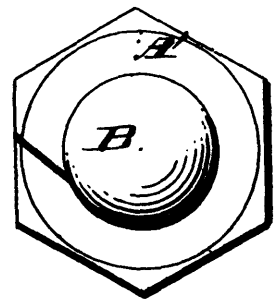
26184 Hunter's Mechanism for operating a Roll of Paper having Printed or Written on its Surface the Subject Matter of any Lecture, etc.



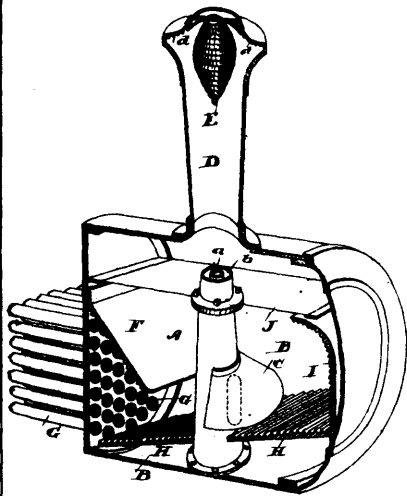
26185 Priest's Cattle Stanchion.



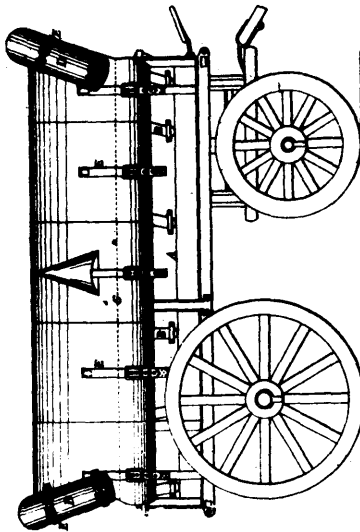
26186 Smerk's Dumper for Load Lifters.



26187 Burdick's Nut.



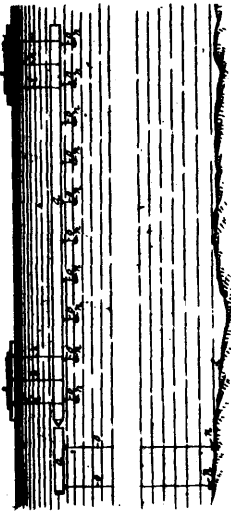
26188 Reed's Spark Arrester.



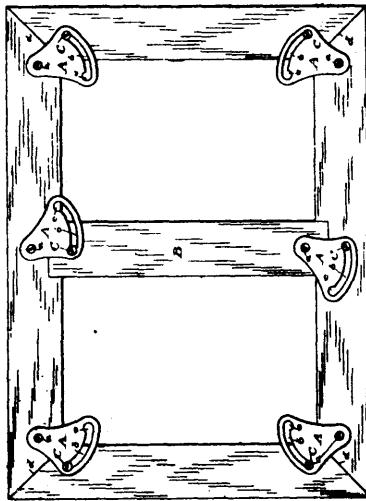
26190 Tomkin's Tent and Waggon.



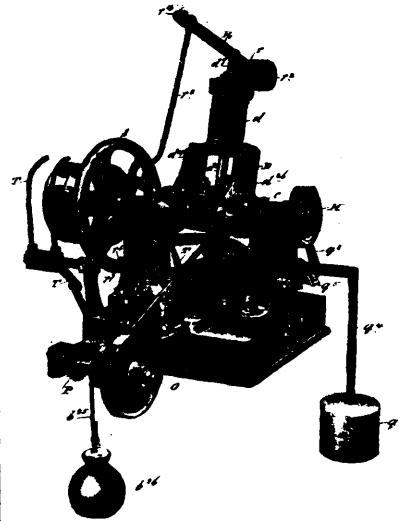
26191 Gumpel's Appliance for holding Carriage Windows, etc.



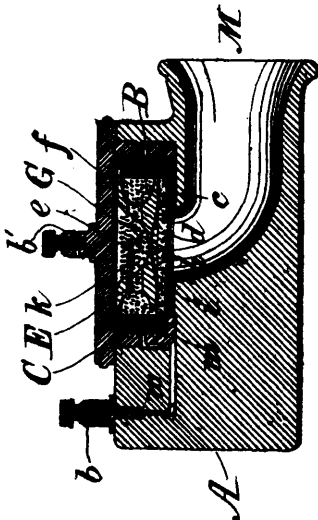
26192 Reed's System of connecting Railways which are separated by Straits, etc., with Structures and apparatus for effecting the same.



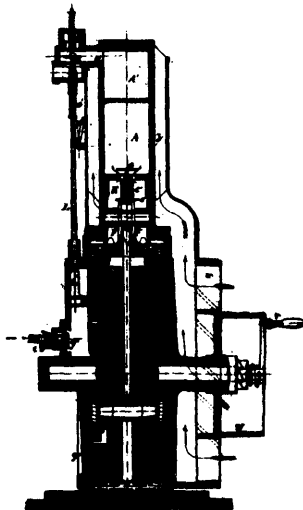
26193 Cutts' Fastener for Frame Joints.



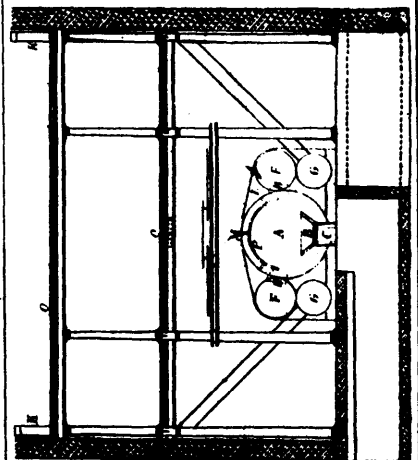
26194 Denison's File-Cutting Machine.



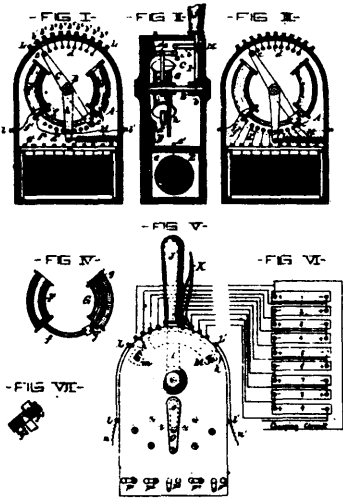
26195 Keller & Lyon's Telephone Transmitter.



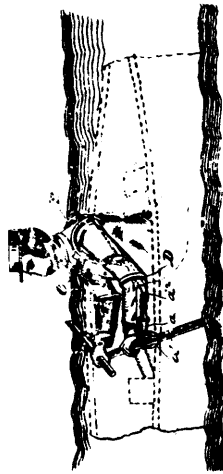
26196 Dalmier's Motor Engine worked by Combustible Gas, etc.



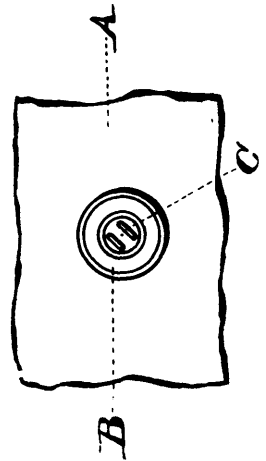
26197 Tomkins & Cracknall's Apparatus for heating kilns for Drying or Carbonising Malt, etc.



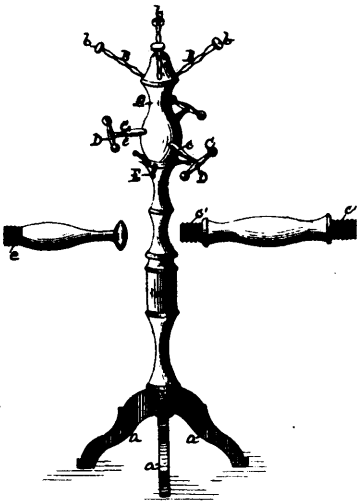
26198 Ries' Circuit Closing Apparatus Brake and other Circuits.



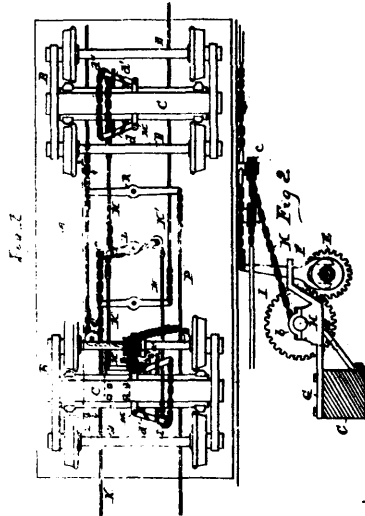
26199 Martin's Oarsman's Harness.



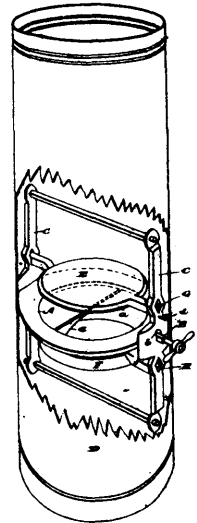
26200 Powell's Fastening for Attaching Buttons to Garments.



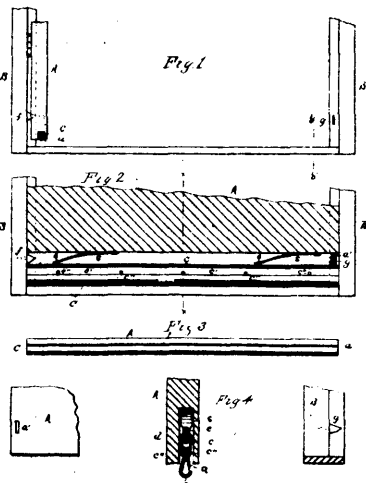
26201 Lavaggi's Hat, Bonnet and Apparel Rack or Stand.



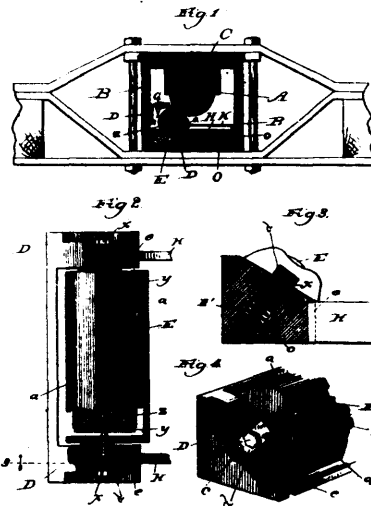
26203 Brown's Railway Car System for Car Brakes.



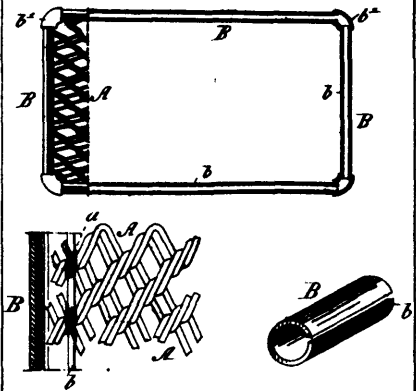
26204 Hunter's Smoke and Hot Air Pipe Damper.



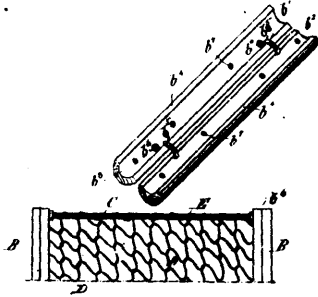
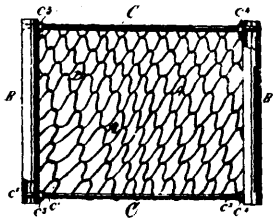
26205 Hull & Kirk's Weather Strip.



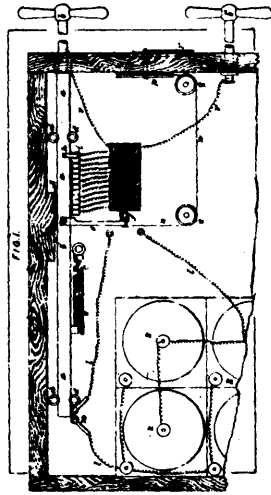
26206 Faas' Device for Lubricating Journals for Car Axles.



26207 Tye's Wire Mat.



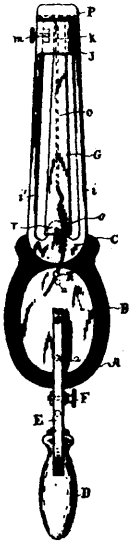
26208 Tye's Wire Mat.



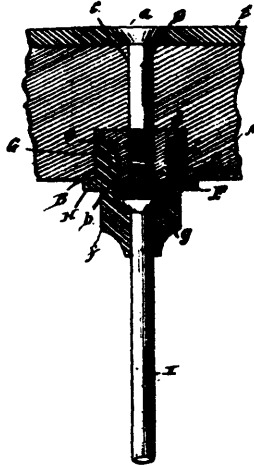
26209 Oliver's Method of Administering Faradic or Galvanic Electricity.



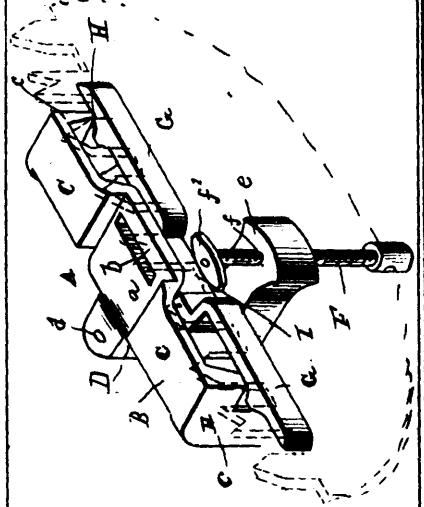
26210 Culp's Electrical Brush.



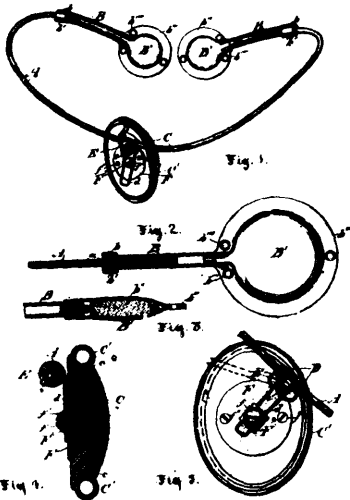
26211 Culp's Electrical Torch for Lighting Gas.



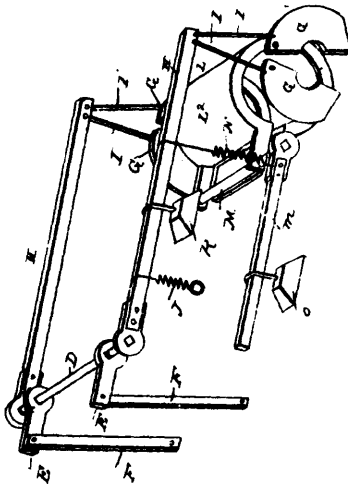
26212 Schadt's Vehicle Wheel, etc.



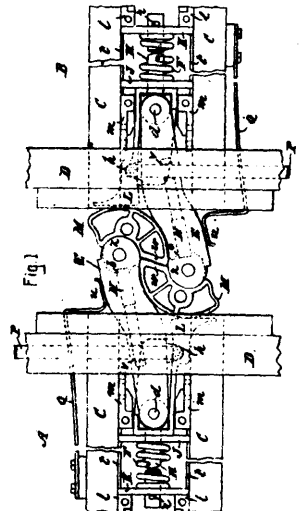
26213 Plater's Device for Jointing Saw Teeth.



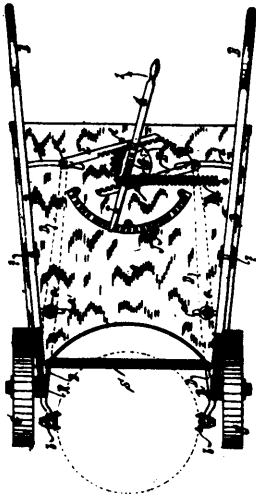
26214 Armstrong's Truss.



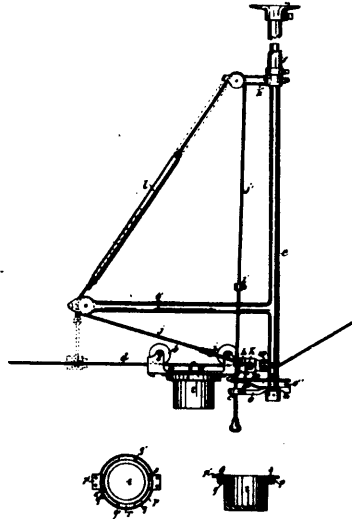
26215 Scott's Wind Regulator for Thrashing and Clover Hauling Machines.



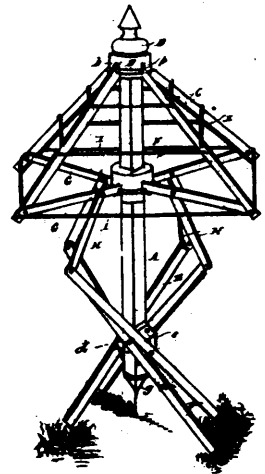
26216 Marden & Littlefield's Car-Coupler.



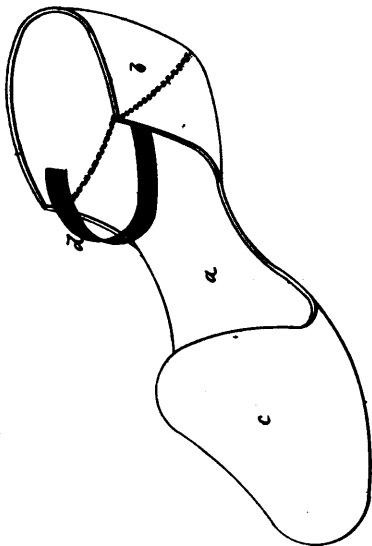
26217 Wing's Truck for Carrying Boxes, Barrels, etc.



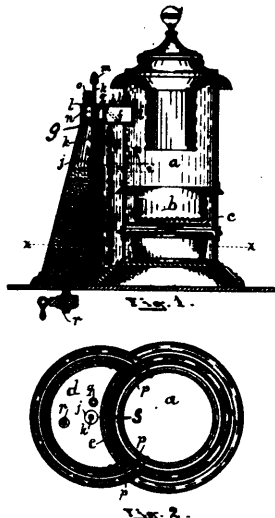
26218 Hazard's Cash Carrier.



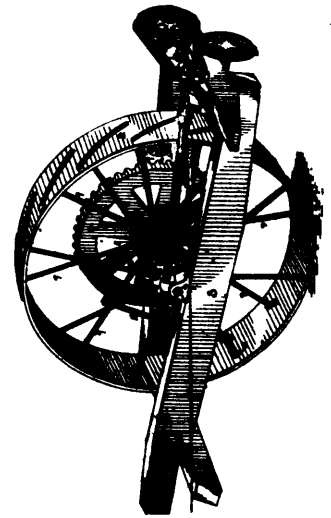
26219 Gordon's Clothes Rack.



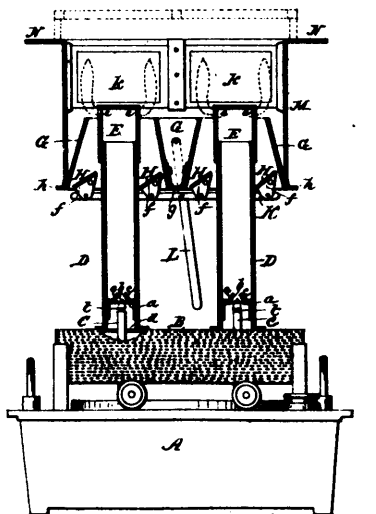
26220 Jones' Heel and Toe Protector.



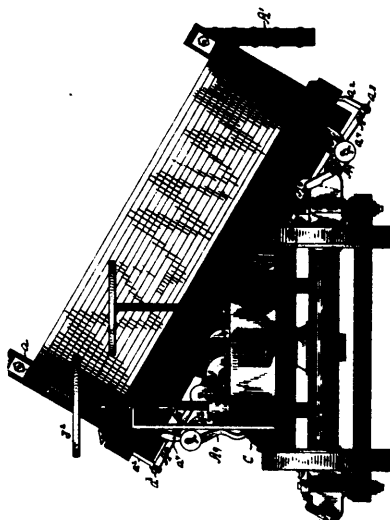
26221 O'Loughlin's Device for Extinguishing Fire in Stoves



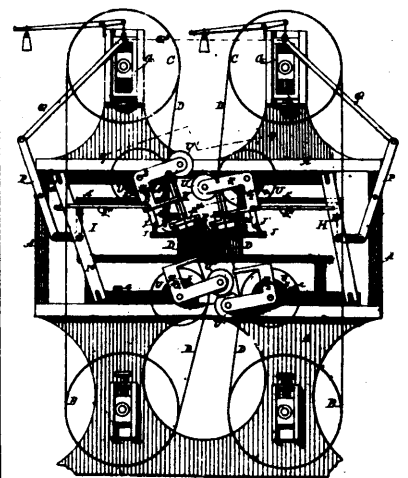
26222 Whiteley's Main Wheel for Harvesters.



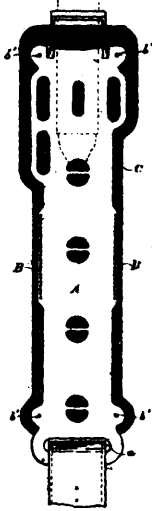
26223 Batchelder's Oil Heater for Stoves.



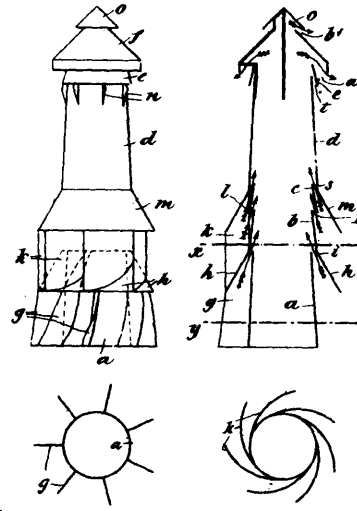
26224 Blaine's Dumping Railway Car.



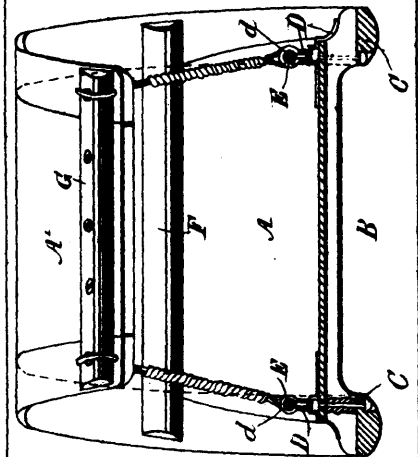
26225 Maxwell's Band Saw Machine.



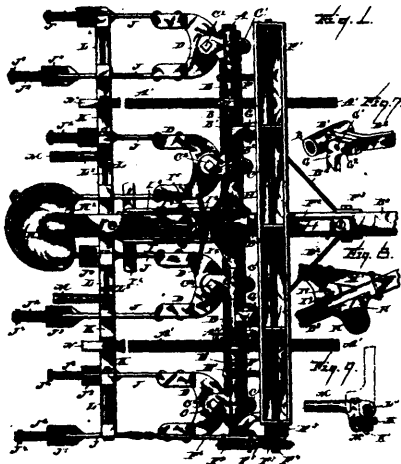
26226 Schott's Hame Tug.



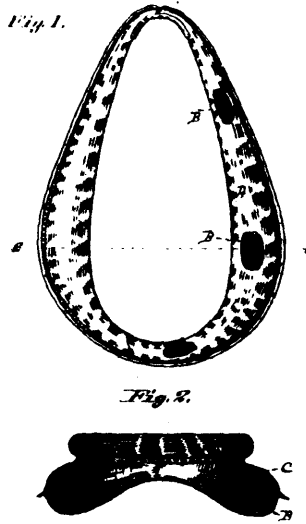
26227 Richard's Ventilator for Chimneys, etc.



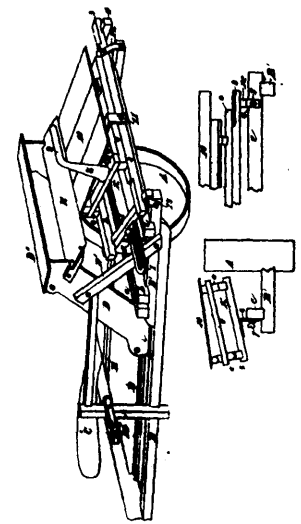
26228 McLaren's Toboggan.



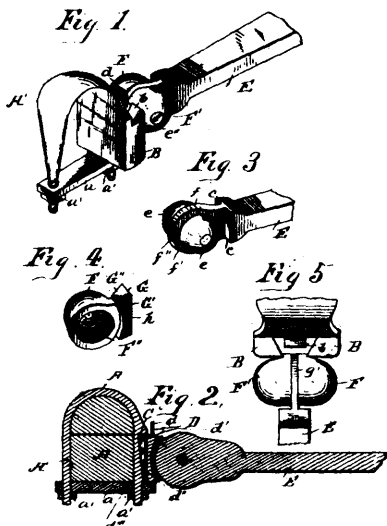
26229 Smith's Cultivator.



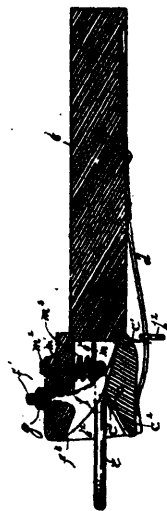
26230 Ruge & Everts's Horse Collar.



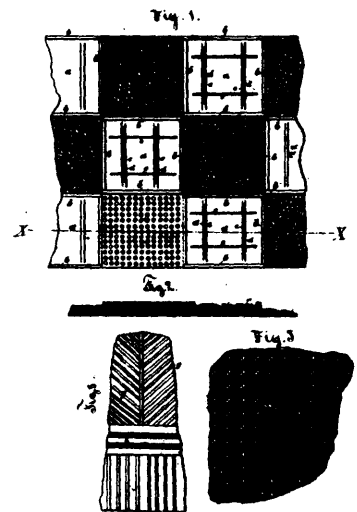
26231 Hoover & Brown's Harvester



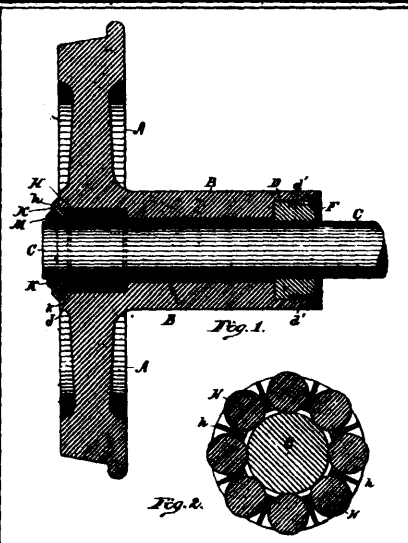
26232 Hahn's Thill Coupling.



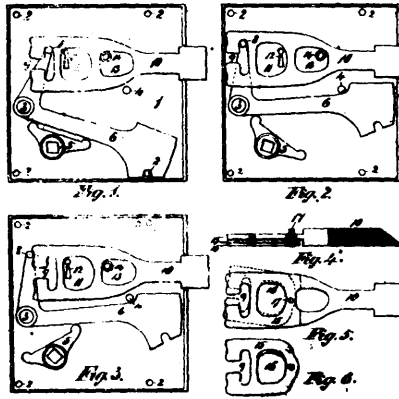
26233 Cooley's Car Coupler.



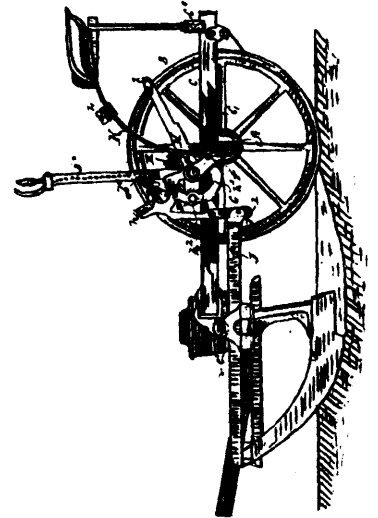
26234 Stuart's Composite Pavements, etc.



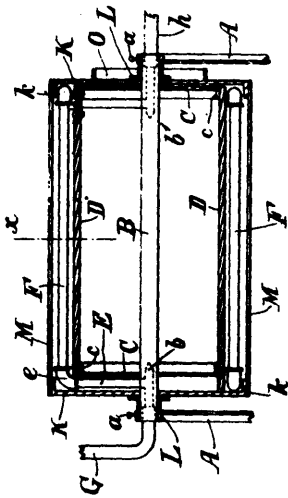
26235 Tanner's Car Wheel



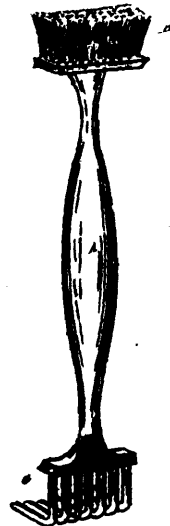
26236 Craig's Latch and Lock.



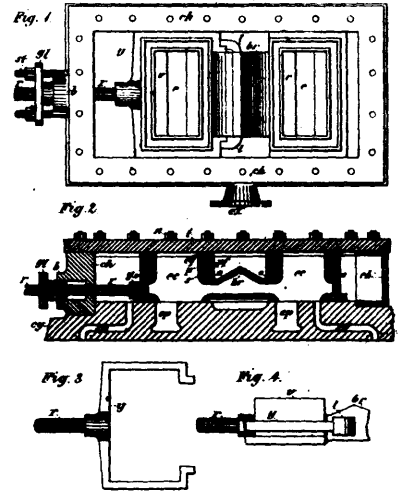
26237 Doolittle's Corn Planter.



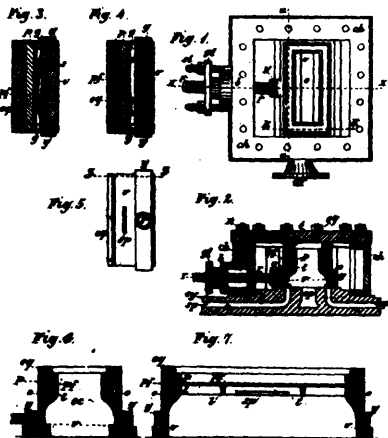
26238 Grosset's Dryer for Drying Paper, etc.



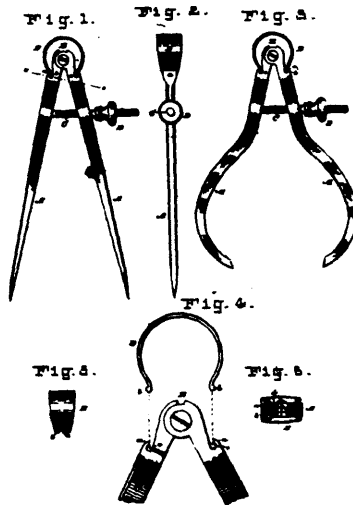
26239 Brookbank's Device for Cleaning Brushes and Combs



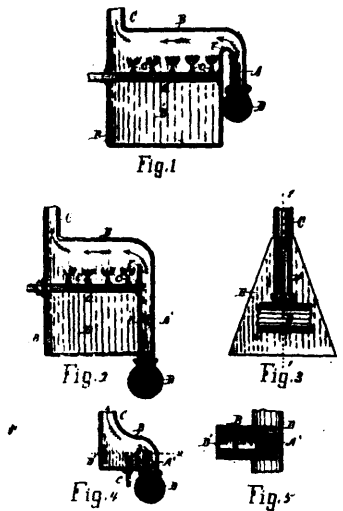
26240 Booth's Double Slide Valve.



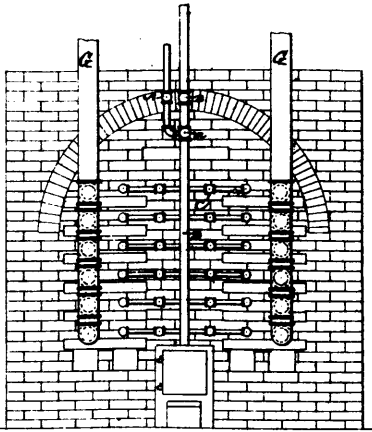
26241 Booth's Slide Valve.



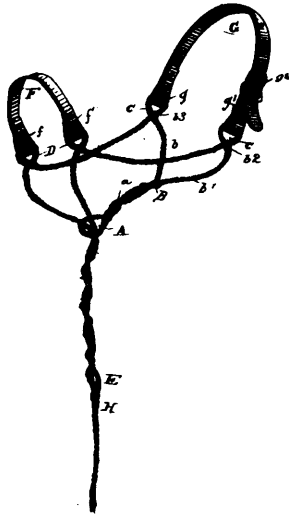
26242 Steven's Calliper and Divider.



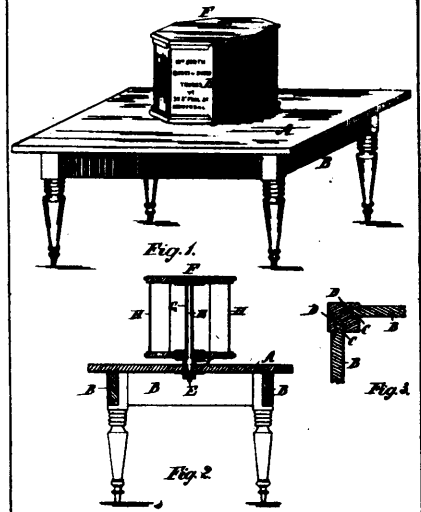
26243 Benson & Stilwell's Sewer Ventilating Furnace.



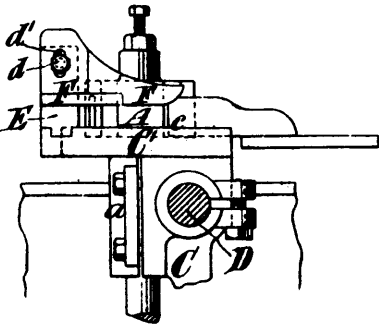
26244 Brooks' Gas Making Apparatus.



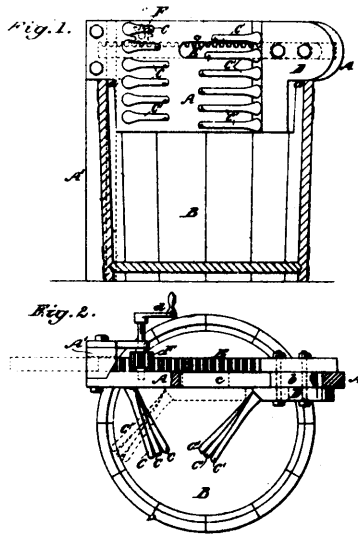
26245 Thummel's Halter.



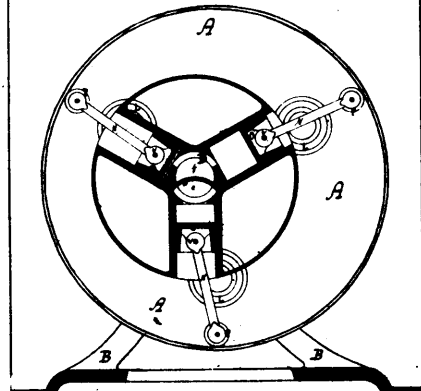
26246 Connee's Self-Waiting Dining Table.



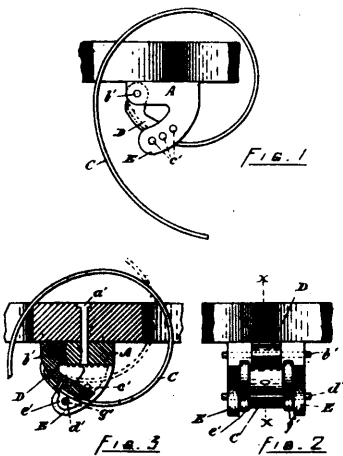
26247 Gray's Wood-Planing Machine.



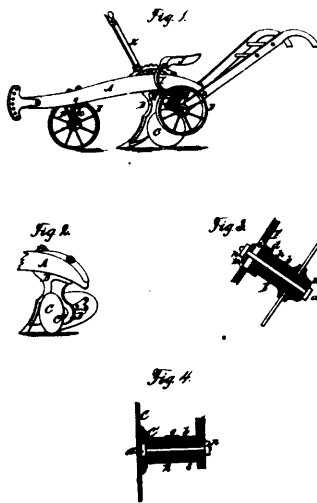
26248 Lynch's Mop Wringer.



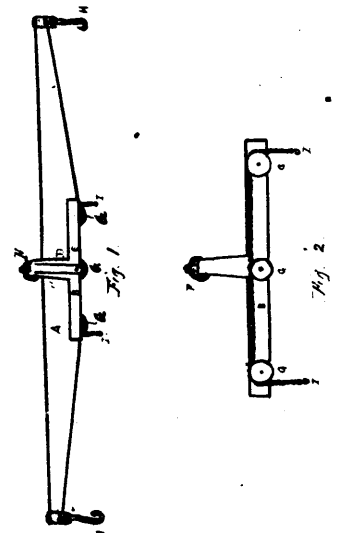
26249 Hallé & Drolet's Rotary Engine.



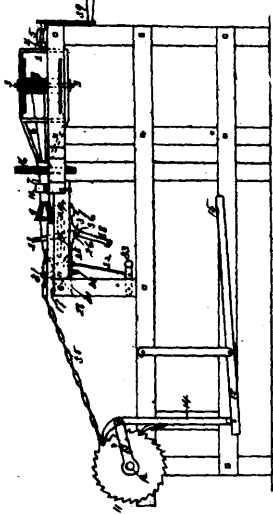
26250 Farnham's Harrow Tooth Coupling.



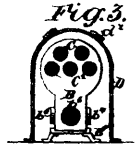
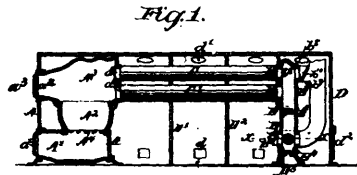
26251 St. John's Plough.



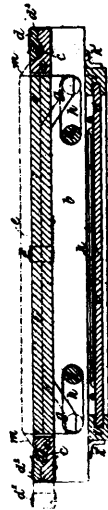
26252 Parker's Doubtree.



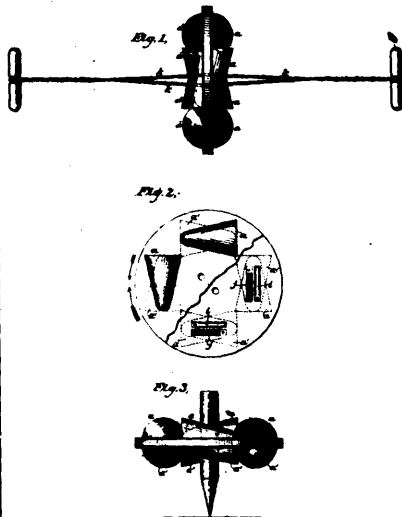
26253 Van Horn's Fence Machine.



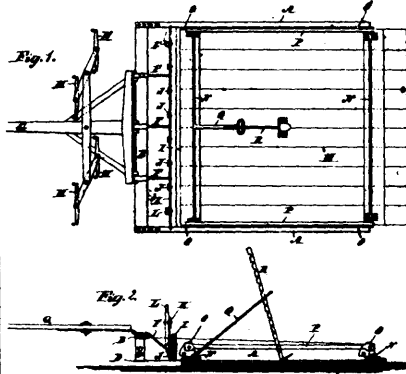
26254 Boynton's Hot Air Furnace.



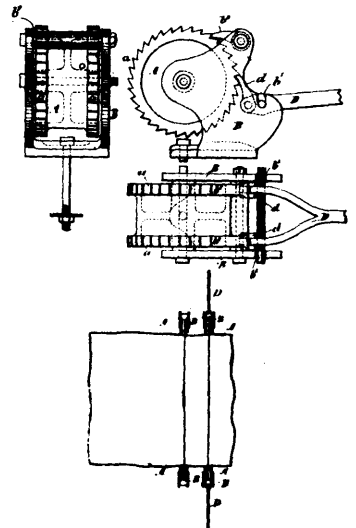
26255 Lehn's Apparatus for Producing Multiple Copies of Writings, Drawings, etc.



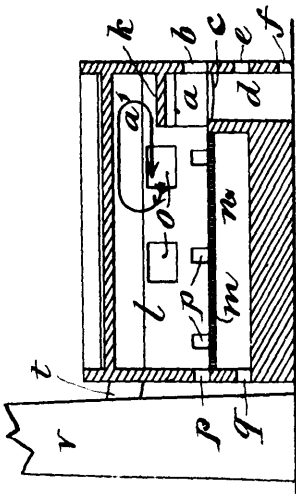
26256 Holbrook's Musical Toy.



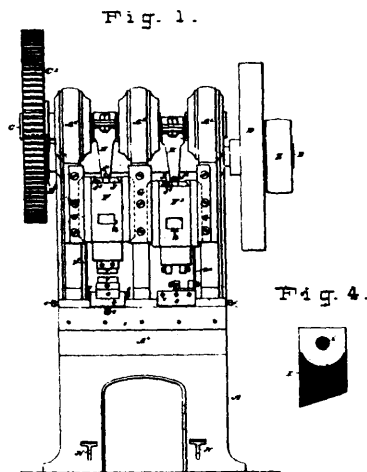
26257 Johnstone's Snow Boarder.



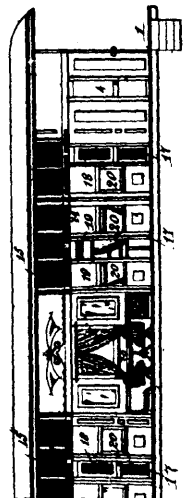
26259 Johnson's Contrivance for Communicating Pressure to Enslage, etc.



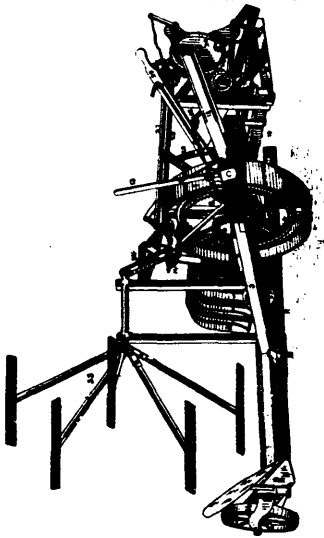
26260 Mann's Cremation Furnace.



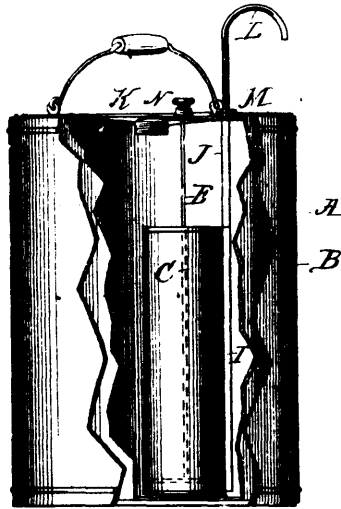
26261 Beaudry's Press for Punching, etc., Metal.



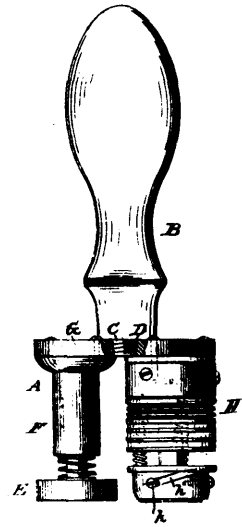
26262 Mann's Railway Car.



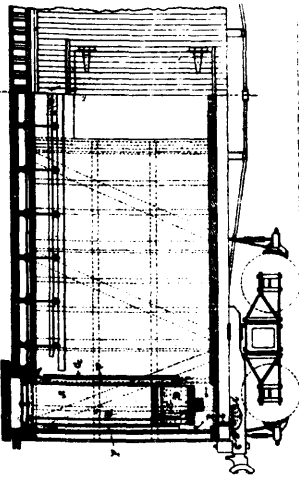
26263 Whiteley & Bailey's Harvester and Binder.



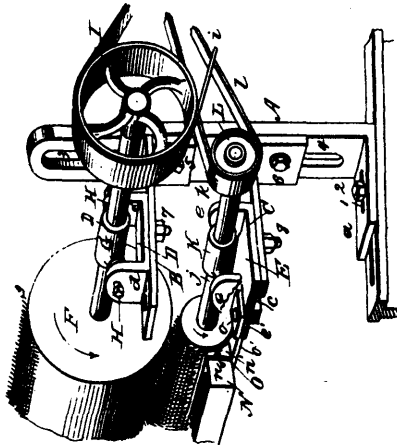
26264 Herboldshimer's Oil Can.



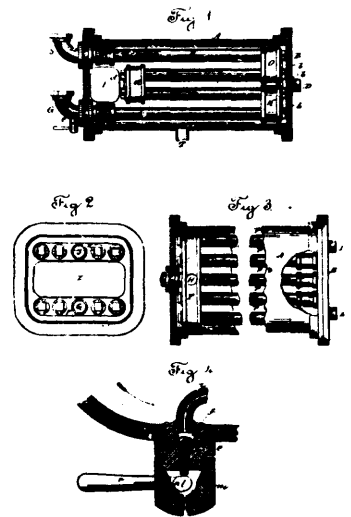
26265 Harding's Stamp Cancellor.



26266 Chase's Refrigerator for Cars.



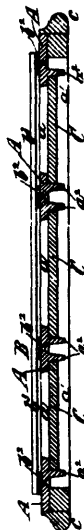
26267 Bebb's Doffer Cleaner for Carding Machines.



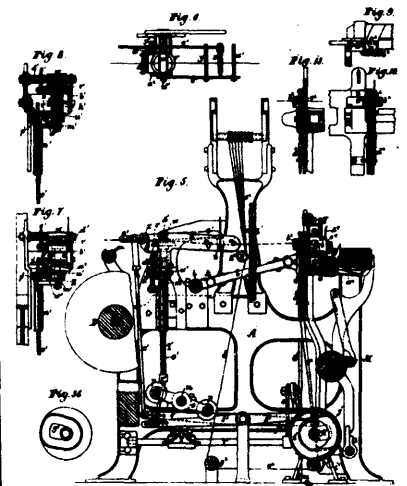
26268 Fairbanks' Feed Water Heater.



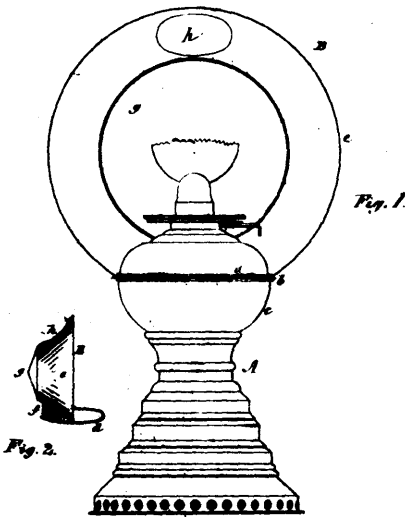
26269 Morrill's Watch Case.



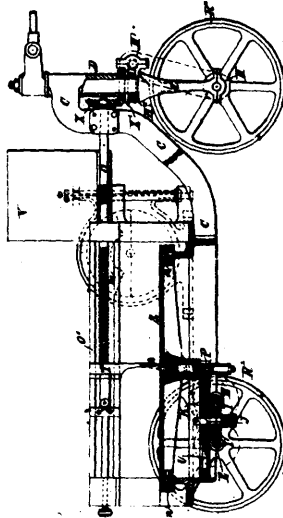
26270 La Grassa's Key Bottom for Pianos, etc.



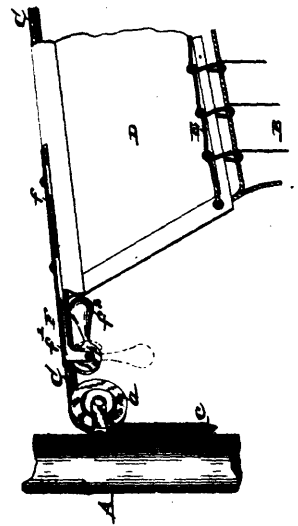
26272 Williams & Bowker's Loom for Weaving Cloth.



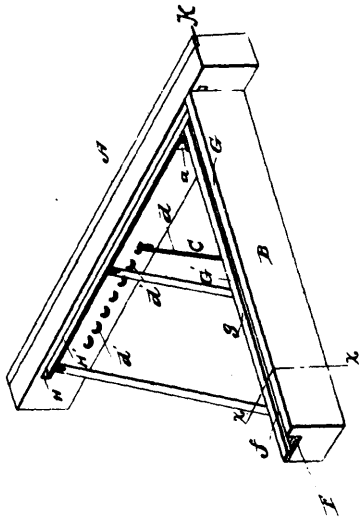
26273 Wanser's Reflector and Hood Shade for Lamps.



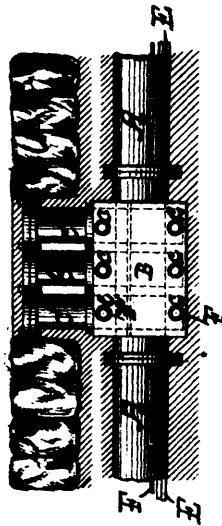
26274 de Villepique's Apparatus for Recording and delineating the direction and gradients of a road.



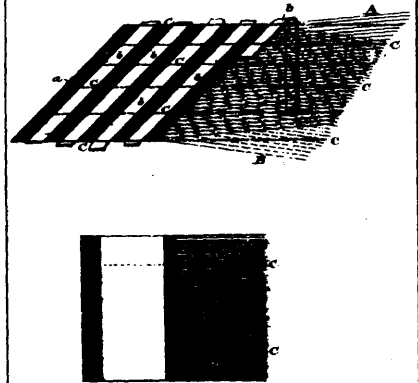
26275 Helfenstein's Tennis Net.



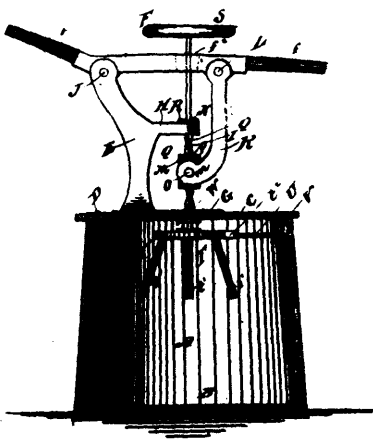
26276 Boisen's Glass Cutter's Frame and Square.



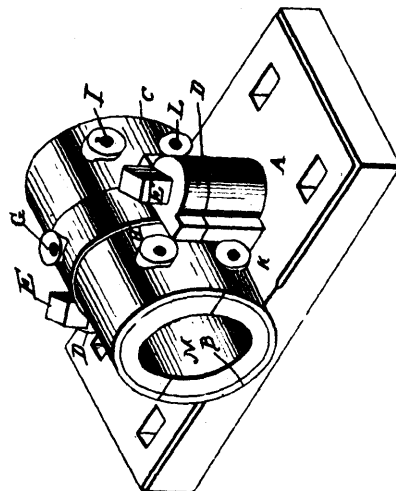
26277 Munsie's Underground Conduit for Electrical Conductors.



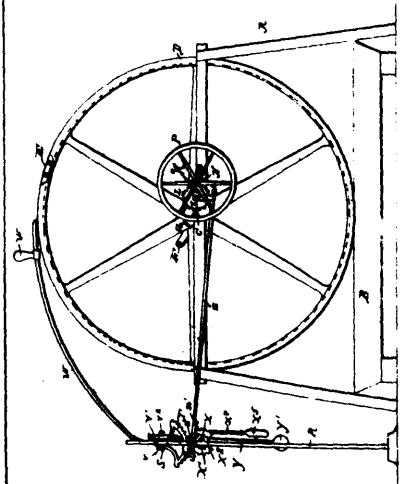
26278 Coxon's Manufacture of Fur Trimmings.



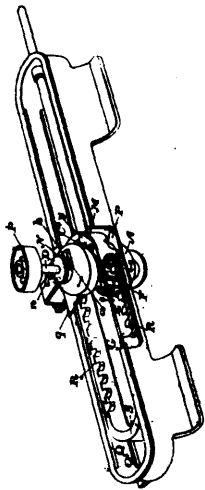
26278 Coutu's Washing Machine.



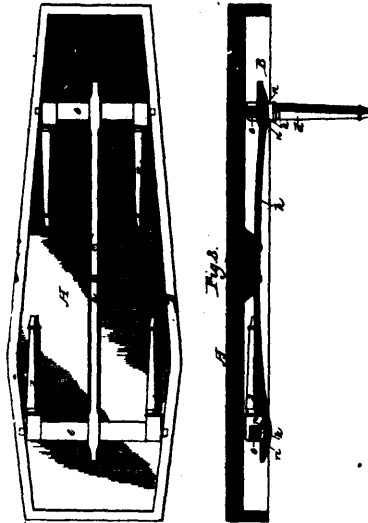
26280 Streeter's Journal Bearing for Shafts.



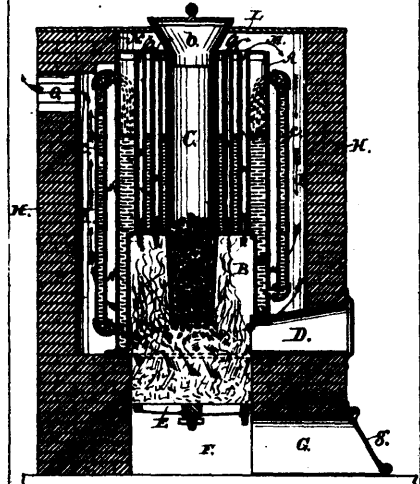
26281 Sample's Water Motor.



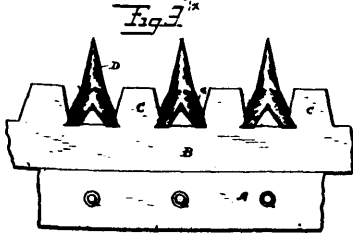
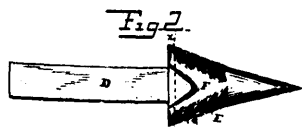
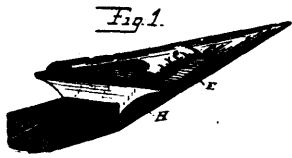
26282 Findlay & McInnes' Pumping Apparatus.



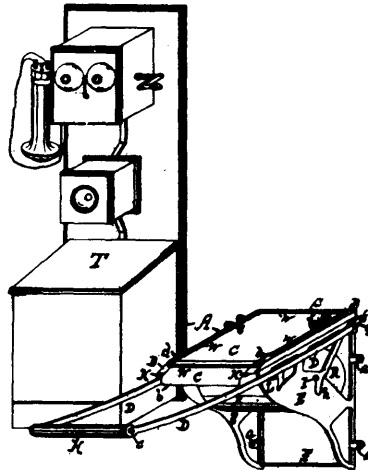
26283 Norden's Coffin.



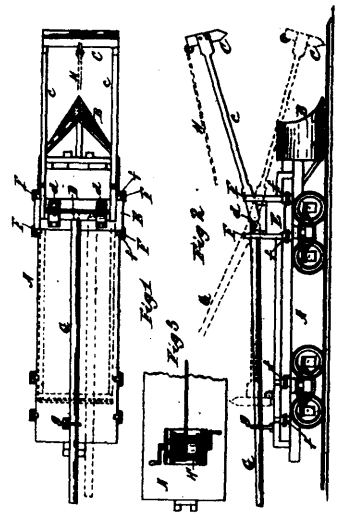
26284 Ferguson's Steam Generator.



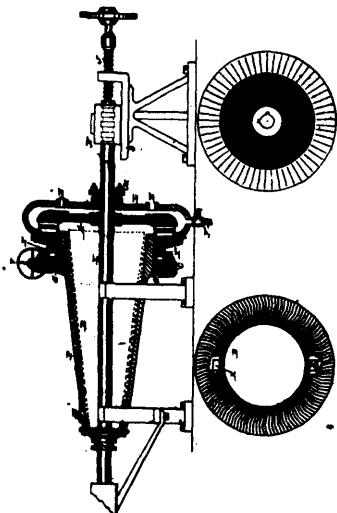
26285 Follott's Mower and Reaper Guard.



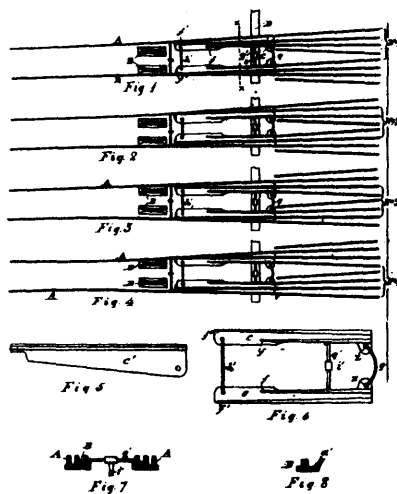
26286 Patterson's Telephone Desk.



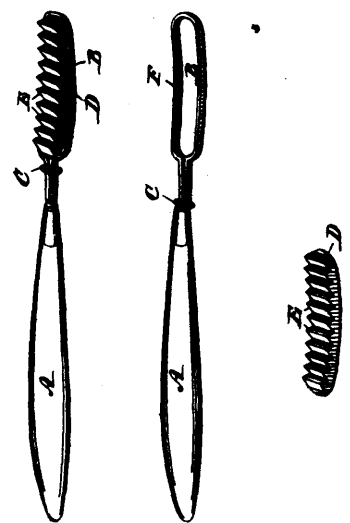
26287 Culbertson's Snow Plough for Railways.



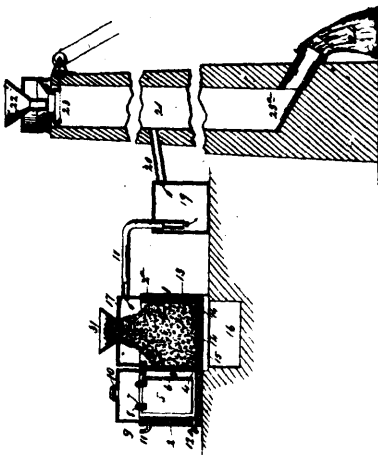
26288 Marshall's Pulp Beating Engine.



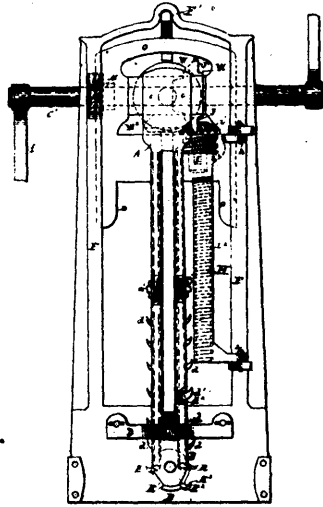
26289 Larocque's Railway Switch.



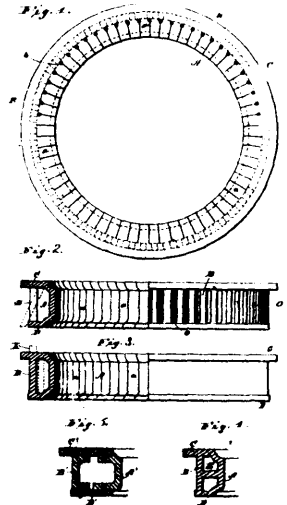
26290 Horsey's Tooth Brush.



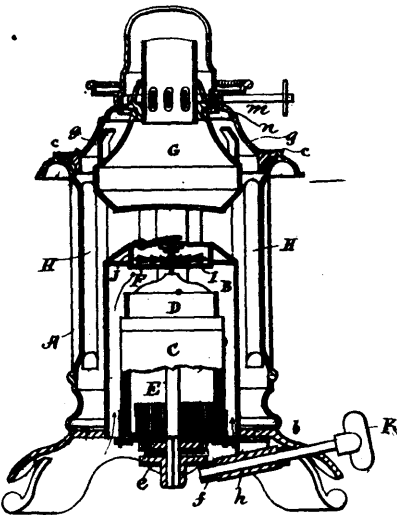
26292 Higgs' Apparatus for obtaining Spelter from Zinc Ore.



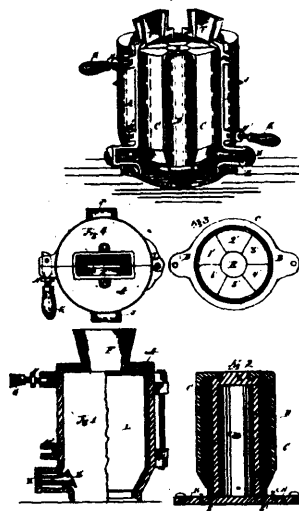
26293 Lake's Square Hole Boring Machine.



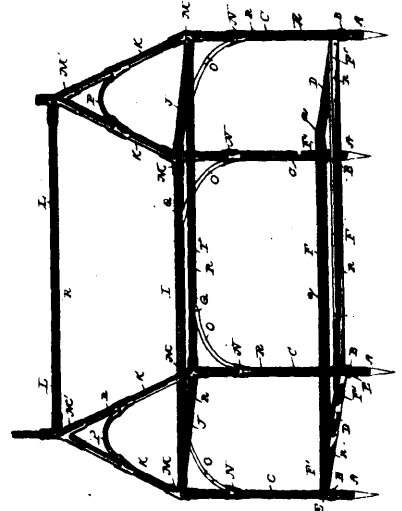
26296 Whitney's Chill for Casting Car Wheels, etc.



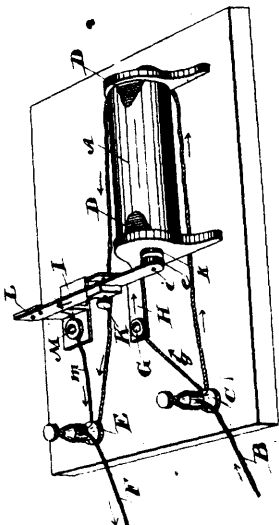
26297 Hitchcock's Forced Draft Lamp.



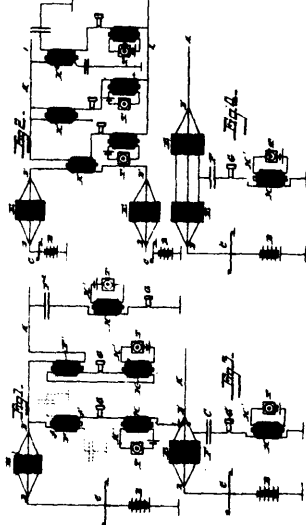
26298 McAfee's Mould for Plumber's Box Traps.



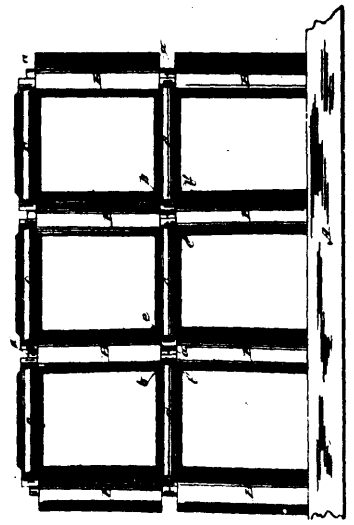
26299 Tourgee's Frame for Portable Structures.



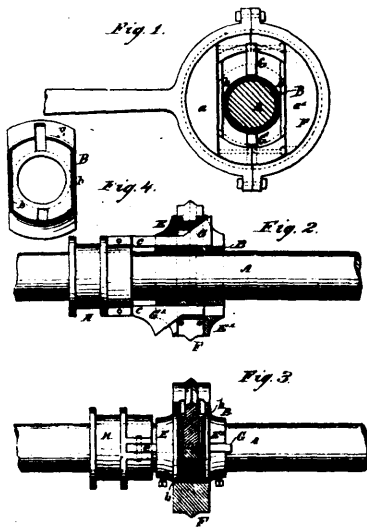
26300 Richardson's Vibrating Electrical Apparatus.



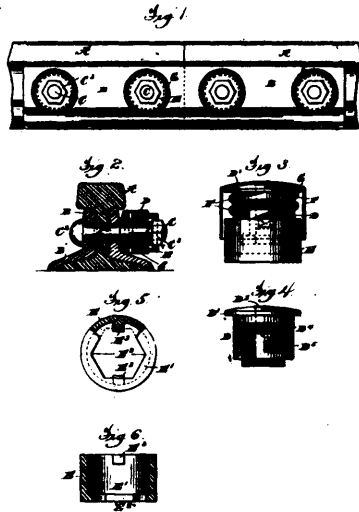
26301 Seiden's Telegraphy.



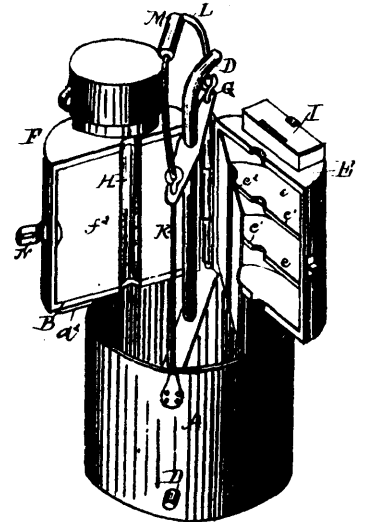
26302 Goodhue's Timber Structure for Mines.



26303 Forwood's Reversing Mechanism for Steam Engines.



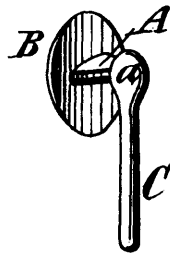
26304 Betsel's Nut Lock.



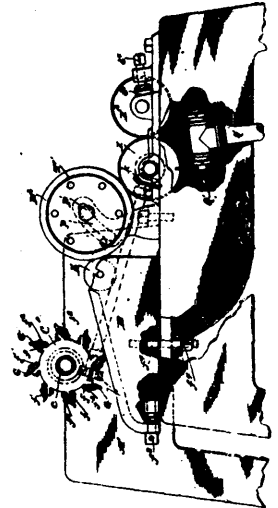
26305 Robinson's Dinner Pail.



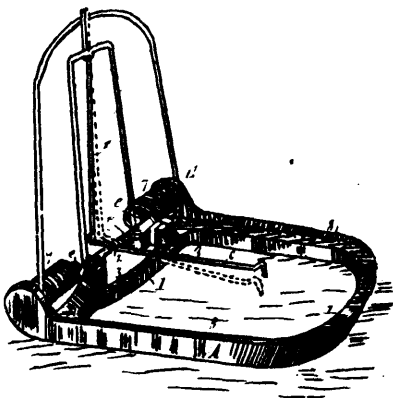
26306 Bogers' Pen-Holder.



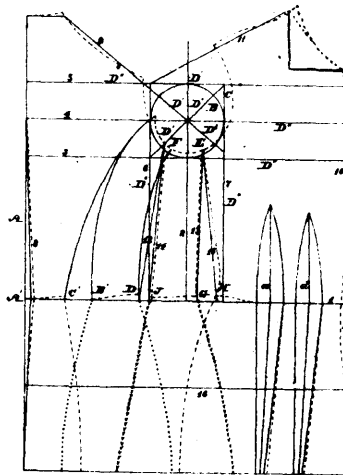
26307 Wilson's Button.



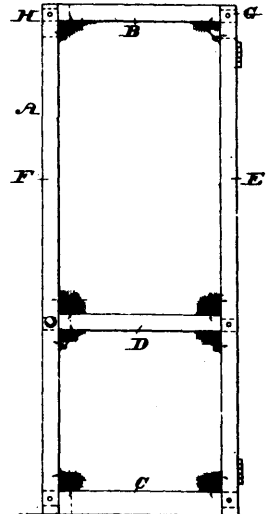
26308 Cunning's Machine for Cleaning Intestines.



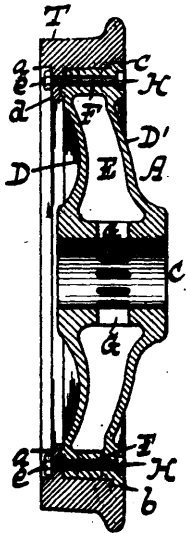
26310 Becker's Animal Trap.



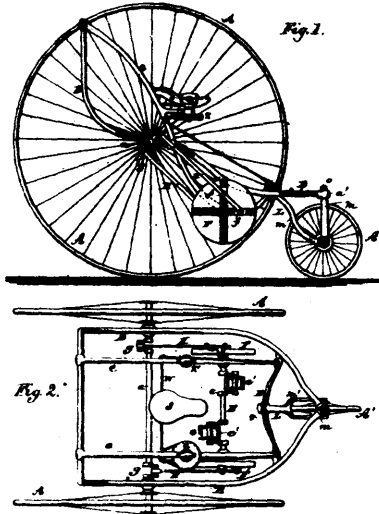
26312 Gartland's Chart for Drafting Garments.



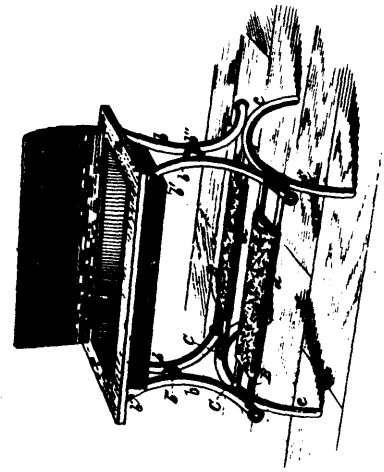
26314 Boughton's Insect Screen.



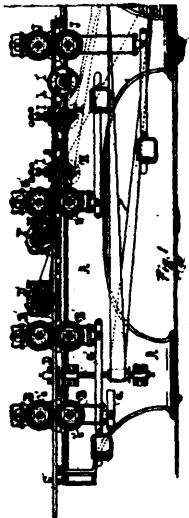
26315 Allen's Car Wheel.



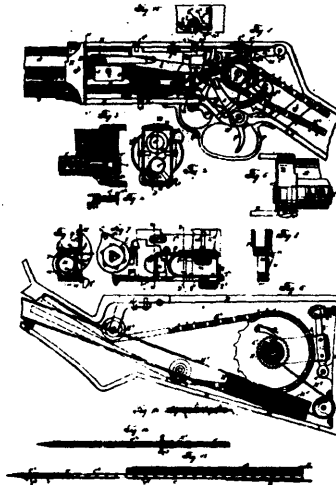
26316 Anderson's Tricycle.



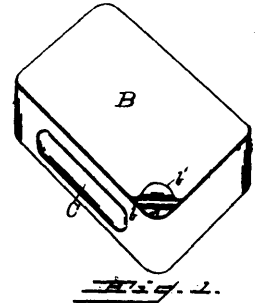
26317 Ordway's Foot Rest.



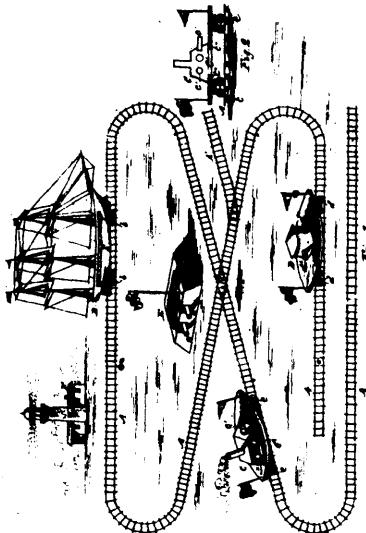
26319 Johnson's Machine for Making Flooring.



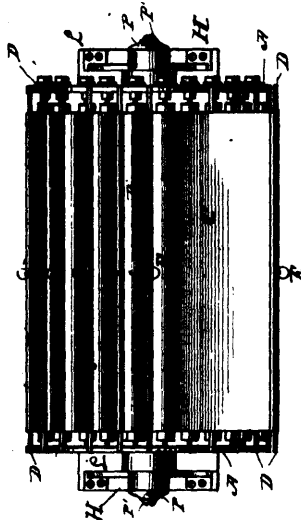
26320 Bees' Repeating Fire Arm.



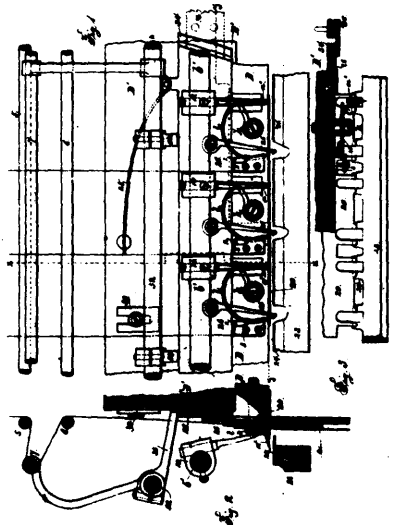
26321 Mullins' Paper Weight.



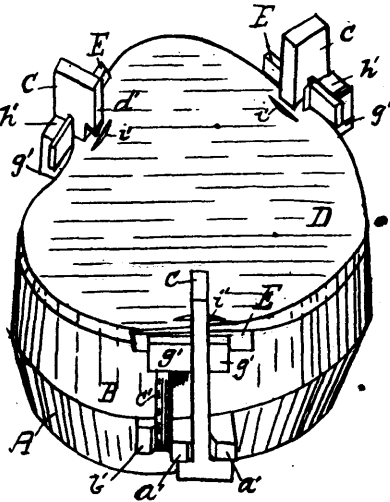
26322 Thayer's Pyrotechnic Display.



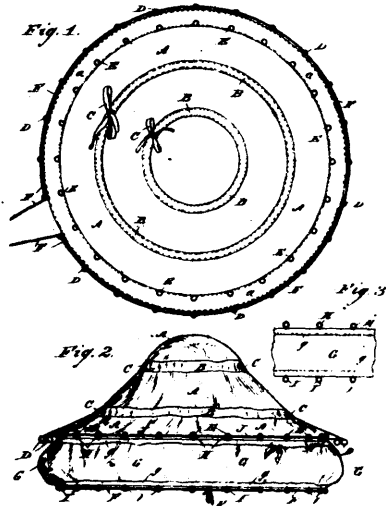
26323 Yeoman's Window Curtain Exhibitor.



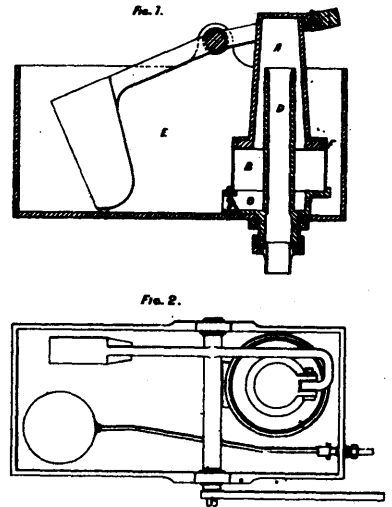
26324 Reynolds' Machinery for Sewing Books.



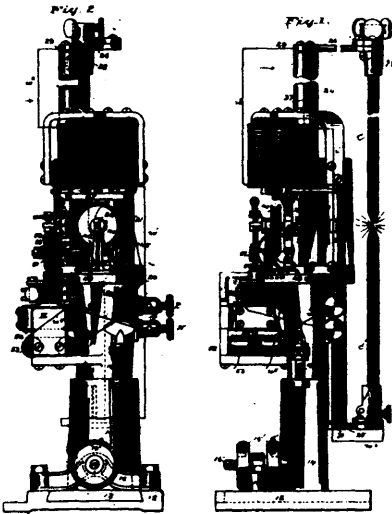
26325 Hughes' Fastening for Dental Flasks



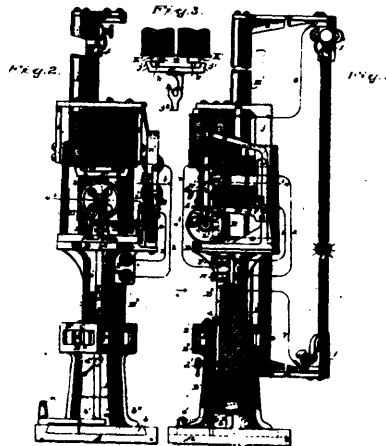
26326 Hopkirk's Hat Protector.



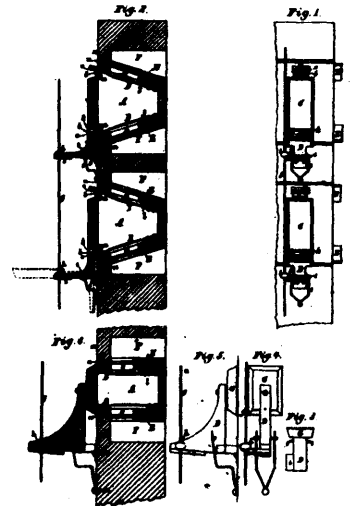
26328 Davis' Water Regulator for Closets, etc.



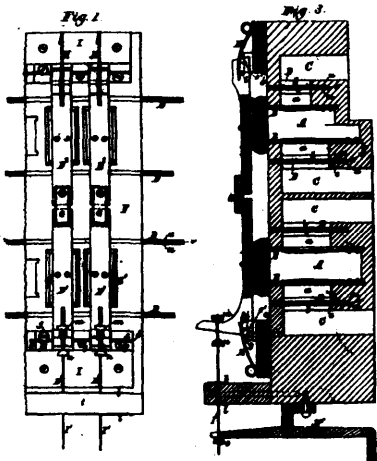
26329 Pyle's Electric Arc Lamp.



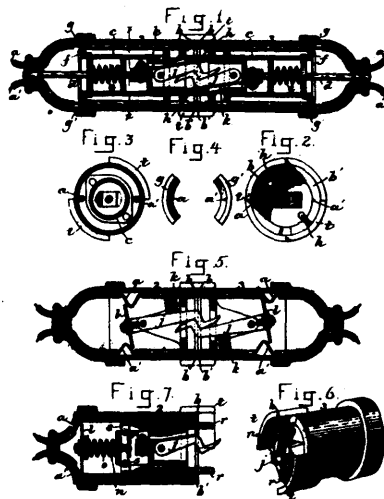
26330 Pyle's Electric Arc Lamp.



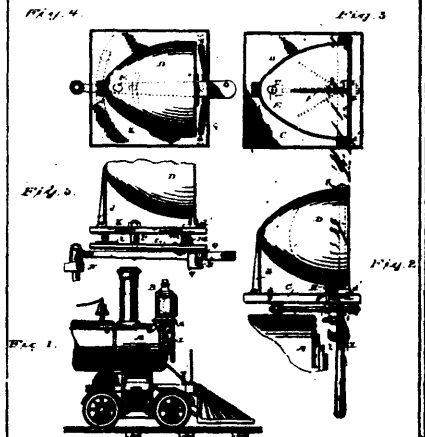
26331 Hamilton's Reed Organ.



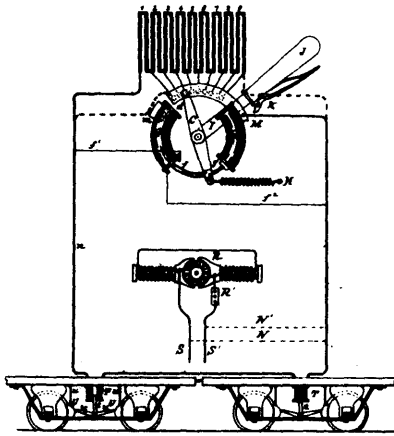
26332 Hamilton's Reed Organ.



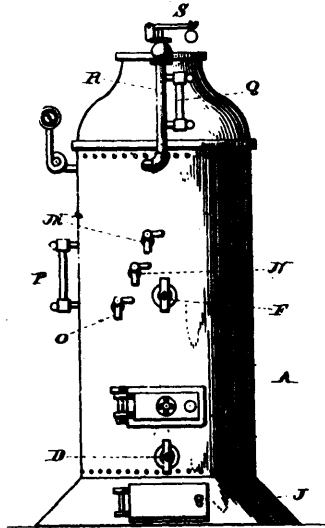
26333 Haulon's Train Signalling Apparatus.



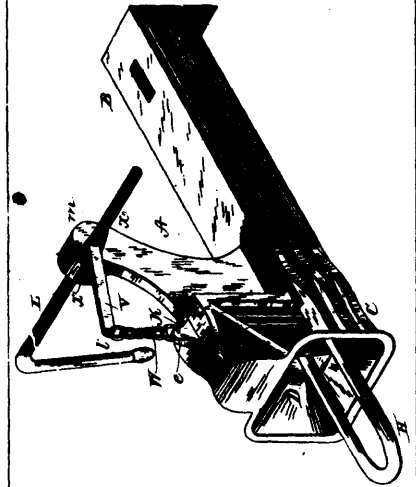
26334 Pyle's Locomotive Head Light.



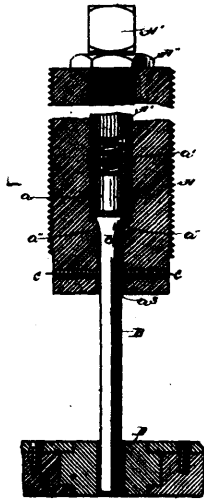
26335 **Ries' Method of Operating Railway Electric Brakes.**



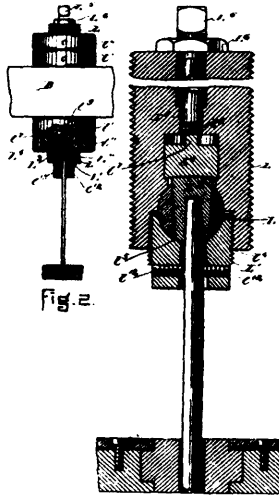
26336 **Klose's Steam Boiler.**



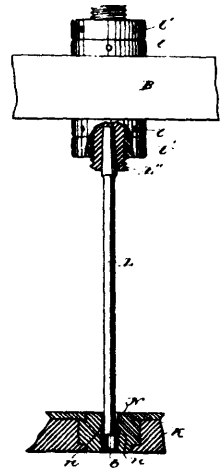
26337 **Kilner's Car-Coupling.**



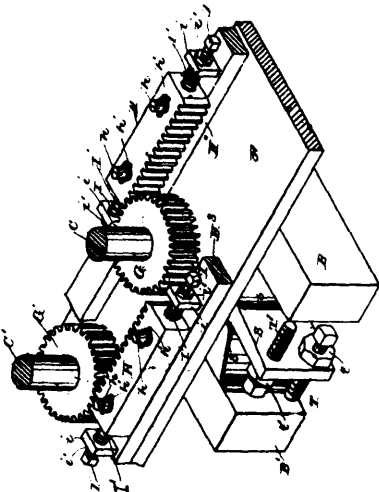
26338 **White's Socket for Punches.**



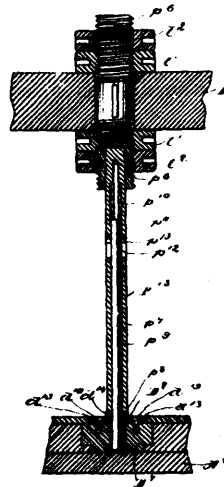
26339 **White's Socket for Punches.**



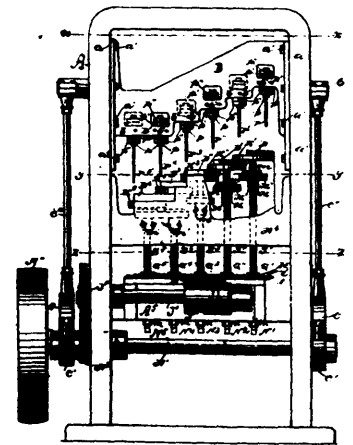
26340 **White's Die for Drawing Metal Blanks.**



26341 **White's Device for Regulating the Movement of Oscillating Shafts.**



26342 **White's Punch and Die for Trimming Shells.**



26343 **White's Machine for Drawing Cartridge Shells.**