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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. 25,302. Truss for Ruptures. (*Bandage Herniaire.*)

George W. Bell, St. Joseph, Mo., U.S., 1st November, 1886; 5 years.

Claim.—1st. In a truss, the combination of a band, a pad B having headed pins, a slotted spring working over the pins, and a clasp to which the spring is connected, and having a set-screw to adjust the pad on the band, substantially as described. 2nd. In a truss, the combination, with a band, of a pad D having a chambered partition *h*, a flexible sheath inclosing the partition, and a yielding packing interposed between the sheath and partition, substantially as described. 3rd. In a truss, the combination, with a band, of a pad comprising a plate, a chambered partition *h*, a sheath inclosing the plate and partition, a yielding packing and a rod having its head seated in the chamber of the partition and secured at its other end to the band, substantially as described.

No. 25,303. Shutter Fastener. (*Fermeture de Contrevent.*)

Lovi Abbott, Cambridge, Mass., U.S., 1st November, 1886; 5 years.

Claim.—1st. The improved blind fastener, composed of the latch pivoted to the side of the blind, and projecting at its free end beyond the inner edge of the blind, and provided with the radially-grooved head or enlargement at its swinging end, and a stud or catch secured to the casing in position to engage with the notch in the latch, as set forth. 2nd. The pivoted latch having the grooved head or enlargement, and a downwardly-projecting lug or ear, combined with the finger bar or rod suitably connected with said ear or lug, whereby the latch may be raised, as set forth. 3rd. The pivoted latch, having the grooved head or enlargement, combined with the spring *j* pressing inwardly on the swinging end of the latch, as set forth.

No. 25,304. Valve or Cock for Liquid Receptacles. (*Valve ou Robinet pour Futaillies.*)

Lovi Abbott, Cambridge, Mass., U.S., 1st November, 1886; 5 years.

Claim.—The combination, with a vessel or receptacle, of the flexible nozzle or discharge tube in the lower portion of the vessel, the jaws *c*, bearing on opposite sides of said tube, the arms *a*, *d*, to which said jaws are affixed, the lever *f* pivoted to a fixed support and to the arms *d*, *h*, the rod or handle *h* connected to an arm on said lever, and the spring *g*, whereby said rod lever, arms and jaws are normally held in position to cause the jaws to compress the tube, as set forth.

No. 25,305 Heel Stiffener Shaping Machine. (*Machine à Contreforts de Chaussures.*)

Louis Coté, St. Hyacinthe, Que., 2nd November, 1886; 5 years.

Claim.—1st. In a machine for shaping heel stiffeners for boots and shoes, the combination of a heel-shaped former, having its sides and rear end moulded or shaped to present different counters or outlines when cut transversely at different points, and a pair of yielding pressure rolls arranged to revolve about their axes towards each other, and to move in the same direction as said former, and having their exterior surfaces moulded or shaped to conform to the varying curvature of the surface of said former, substantially as and for the

purposes described. 2nd. The combination of the former C, the rolls E and E', and the springs D and D', all constructed arranged and adapted to operate substantially as and for the purposes described. 3rd. The combination of the former C, the yielding pressure-rolls E and E', the gear wheels F and F, the racks *a* and *a*', and mechanism for imparting to said former and racks a reciprocating motion, substantially as described. 4th. The combination of the reciprocating former C, the yielding pressure-rolls E and E', the gear wheels F and F, the racks *a* and *a*' and the flange-turning plate M, all constructed, arranged and adapted to operate substantially as and for the purposes described. 5th. The combination of the reciprocating former C and racks *a* and *a*', the yielding pressure-rolls E and E', the gear-wheels F and F', the flange-turning plate M and the stiffener-discharging pawl N, all arranged and adapted to operate substantially as and for the purpose described.

No. 25,306. Revolving Pocket Hand Stamp. (*Timbre de Poche à Bascule.*)

William H. Keeler, Buffalo, N.Y., U.S., 3rd November, 1886; 5 years.

Claim.—1st. The combination, with the type-wheel, of a casing having an opening through which a portion of the type-wheel projects, an ink roller and a frame in which the type-wheel and ink roller are mounted, and which is movably attached to the casing, substantially as set forth. 2nd. The combination, with the type-wheel A, of a casing D having an opening *e*, an ink roller B, a frame C and a shield *j* secured to the casing, substantially as set forth. 3rd. In a pocket hand stamp, the combination, with the casing *d* having an opening *l* of a frame C movably attached to the casing, type-wheel A, and ink-roller B supported in the frame C, spring *m* secured to the casing and adapted to hold the ink roller against the type-wheel and a movable cover L pivoted to the sides of the casing and adapted to close the opening *l* of the casing, substantially as set forth.

No. 25,307. Flue Cleaner. (*Nettoyeur de Tuyau.*)

James A. Hurley and The F. F. Adams Company, Erie, Penn., U.S., 5th November, 1886; 5 years.

Claim.—1st. In a flue cleaner, substantially as shown, the combination of a nozzle, a shut-off valve operating in said nozzle, and having an outward extending stem, a steam supply pipe connecting with a flexible hose, a handle connected with said steam pipe, and a hand grip lever on said handle, which is operatively connected with said valve stem, substantially as and for the purposes mentioned. 2nd. In a flue cleaner, substantially as shown, the nozzle-shell A, having conical face *a*, annular steam passage *a'*, chambers A₁ and A₂, with connecting passage and steam supply entrance into the chamber A₁, in combination with the valve B, with outward extending stem B', the steam supply pipe C, flexible hose C', handle D, hand grip lever E and connecting-rod E' connecting the said lever E with the valve stem B'. 3rd. In a flue cleaner, substantially as shown, the combination of a steam nozzle, a shut-off valve within said nozzle, having a protruding stem, a handle connected with said nozzle, and a hand grip lever on said handle, which is operatively connected with said valve stem.

No. 25,308. Baling Press. (*Presse d'Emballage.*)

Peter K. Dederick, Loudonville, N.Y., U.S., 10th November, 1886; 5 years.

Claim.—1st. In a baling press, the combination, with a reciprocating traverser, of a pitman connected thereto, a guide for controlling the movement of the outer end of a pitman, a vibratory horse lever or sweep, and intermediate connections between the horse lever and pitman for causing the latter to approach and recede from a central line twice, or oftener, at each movement of the horse lever in either direction, substantially as described. 2nd. In a baling press, the combination, with a reciprocating traverser and its attached pitman, of a guide for the outer end of the pitman, a vibratory horse lever bearings for forcing the pitman past the central line in opposite directions, and an intermediate bearing, operating as described, to carry the pitman toward the central line during a portion of the traverse of the horse lever in either direction, and release it alternately on opposite sides of the centro, substantially as described. 3rd. In a

power device for baling presses, the combination, substantially as described, of the traverser, a pitman and swing arm constituting the toggle, and a horse lever or sweep mounted upon an axis or pivot separate from that of the swinging arm, and having two bearings adapted to carry the toggle across the centre from opposite sides, and a third or intermediate bearing adapted to carry the toggle nearly to the centre and then release it, as and for the purpose set forth. 4th. In a baling press, the combination, with traverser pitman and swinging arms, of the horse lever or sweep pivoted to one side of the axis of the swinging arms, having the intermediate bearing, adapted when the horse lever is moved to bear upon the said swinging arm, and travel toward and off *s, f*, the outer end of the same, and having also the two remote bearings, substantially as described. 5th. The combination, with the horse lever, the crank arms and their shafts or pivots respectively, of the removable bearing plates, substantially as described. 6th. In a power device for baling presses, the combination, substantially as described, of the traverser, a pitman and a swinging arm constituting a toggle, and a horse lever or sweep having two bearings adapted to carry the toggle across the centre from opposite sides, and a third intermediate and removable bearing adapted to carry the toggle nearly to the centre and release it, substantially as set forth. 7th. The combination of the rock lever, the feed blade or blades, the connecting chain and the traverser, substantially as and for the purpose specified. 8th. The combination of the horse lever, and the power connection *N*, passing around the connecting chain *x*, substantially as set forth. 9th. The combination of the horse lever and power connection *N*, passing around the standard *V*, substantially as set forth. 10th. The combination of the rock lever blade or blades, and the weight attached thereto, with the press box and traverser of a baling press, as and for the purpose set forth. 11th. The combination of the power connection *N*, pitman *P*, condensing heads and feed hopper, as and for the purpose set forth. 12th. In combination with a baling press feed orifice, a gravity feeder or feed device and a hopper provided with one or more movable condensing heads, as set forth. 13th. In a baling press, the double-acting pitman *P*, with the traverser press box feed orifice, in combination with a hopper movable condensing head and a gravity feeder, for the purpose set forth. 14th. In a baling press, the combination of a double acting pitman, a traverser, a press box, a feed orifice with a hopper and condenser and automatic feed device, whereby the loose material is condensed and passed from the hopper into the press box in front of the traverser and pitman, as set forth. 15th. The combination, with the traverser of a chamber, a condenser moving therein, and a feeding device operated by gravity to force the condensed charges into the press box, substantially as described. 16th. In a continuous baling press, the combination, with the hopper, of double condensing heads operating therein, substantially as and for the purpose set forth. 17th. In a continuous baling press, and in combination with the hopper thereof, double condensing heads and an intermediate head or partition above the feed orifice, substantially as described. 18th. In a continuous baling press, and in combination with the hopper thereof, double condensing heads and a movable partition located above the feed orifice and between the condensing heads, substantially as described. 19th. In a continuous press, in which there are imparted to the traverser two reciprocations at each complete movement of the horse lever from side to side, a hopper communicating with the feed opening and having double condensing heads, substantially as described. 20th. In a continuous press, in which there are imparted to the traverser two reciprocations at each complete movement of the horse lever from side to side, a hopper communicating with the feed opening, double condensing heads arranged to reciprocate within the hopper and a partition located between said condensing heads, substantially as described. 21st. The combination with the condensing hopper, the double condensing heads and the intermediate head or partition, movable back and forth across the feed opening of the automatic feeder operating to force each charge of condensed material down through the feed opening, substantially as described. 22nd. The combination, with the condensing hopper, the double condensing heads and the intermediate head or partition, movable back and forth across the feed opening, of the automatic feeder operating to force each charge of condensed material through the feed orifice and the double acting traverser, substantially as described.

No. 25,309. Machine for Removing Plumage from Feathers. (*Machine à Ebarber les Plumets.*)

George R. Holden, St. Thomas, Ont., 10th November, 1886; 5 years.

Claim.—1st. The overlapping and bevel disk-cutters *a, b*, arranged to revolve in opposite directions, substantially as described. 2nd. The combination of the spring *L*, with the shaft *J* for holding the cutting-edges of the disks *a, b*, substantially as specified. 3rd. The combination of the brackets *D*, with the cylindrical arms *J, K*, and set screws *g, h* for adjusting the overlapping of the cutters *a, b*, substantially as specified. 4th. The combination of the adjustable supporting arms *J, K*, and set-screws *i, j*, with the shaft *B* and boxes *C, D*, supported thereon for adjusting the cutters *a, b* in the plane of contact, substantially as set forth. 5th. The combination and arrangement of the bearing boxes *C, D*, having the brackets *D* with the adjustable supporting arms *J, K*, adjustable arm *I* and their respective set-screws, spring *L* and post *B*, whereby the several adjustments may be obtained, substantially as described.

No. 25,310. Machine for Reducing Quills, Feathers, etc., to Fibre. (*Machine pour Réduire la Plume, etc., en Fibre.*)

George R. Holden, St. Thomas, Ont., 10th November, 1886; 5 years.

Claim.—1st. The disks *a, b*, having square or cutting edges, and passing and interlocking each other for reducing the material fed between them to fibre, substantially as specified. 2nd. The combination of the disks *a, b*, with the guides *c, d*, substantially as and for the purpose described. 3rd. The combination of the cutting disks *a, b*, with the scrapers *e*, substantially as set forth. 4th. The combination and arrangement of the cutting disks *a, b*, and of the guides

c, d, and scrapers *e*, substantially as specified. 5th. The combination and arrangement of the shaft *D*, hinged supports *B*, and cutting disks, a socket thereon, with the shaft *C*, fixed supports *B*, cutting-disks *b* locked thereon, guides *c, d* and scrapers *e*, substantially as and for the purpose described.

No. 25,311. Beer Apparatus. (*Appareil à Bière.*)

George E. Collins, Albert J. Weatherhead and Edward H. Weatherhead, Cleveland, Ohio, U.S., 10th November, 1886; 5 years.

Claim.—1st. In beer apparatus, a casing carrying an air pump and a faucet adapted to be connected with one or more barrels at the same time, in combination with separate draught and vent tubes for each barrel, and hose connecting the draught and vent tubes with the faucet and pump respectively, substantially as set forth. 2nd. In beer apparatus, a beer pump and a faucet, with two or more openings through which to draw fluid, supported together on a casing with combined air and vent tubes, and hose connecting them with the air pumps and faucet, substantially as set forth. 3rd. In beer apparatus, the combination, with a casing, of a faucet having duplex openings, an air pump located by its side vent, and draught tubes connected with the pump and faucet respectively, and relief openings for the vent under control of the operator, whereby the air may be discharged without going to the barrel, substantially as set forth. 4th. In beer apparatus, a bung, having a neck above its head air, and vent tubes passing through the bung and hose connecting the tubes with an air pump and faucet respectively, substantially as set forth.

No. 25,312. Pie-Plate Lifter or Culinary Utensil. (*Manche de Tourtière ou Ustensile de Cuisine.*)

George H. Hollidge, Tacoma, W. T., U. S., 10th November, 1886; 5 years.

Claim.—The culinary utensil or implement hereinbefore described, consisting of the combination with a handle fitted at its front end with a blade or plate, of a holding plate pivoted to said handle in rear of its blade or plate and fitted on its upper surface, with a thumb operating knob or projection in advance of the pivotal connection of said holding-plate with said handle, substantially as described.

No. 25,313. Wheeled Stump and Stone Lifter and Conveyer. (*Chariot Arrache-Souche et Arrache-Pierre.*)

Joseph S. Kemp, Magog, Que., 10th November, 1886; 5 years.

Claim.—1st. The combination of the upright posts, two inside and two outside, the wheels with the cross-bar (or cross-bars) *p* and the body of the machine, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the shifting hoisting-gear and longitudinal bars, with the main body of the machine, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a wheeled stump and stone lifter, of the longitudinal bar or bars with the straining rod and post in front of the machine, substantially as and for the purposes hereinbefore set forth.

No. 25,314. Siphon Oil Can.

(*Bidon à Huile à Siphon.*)

Thomas W. Lippincott, Rockford, Ill., U. S., 10th November, 1886; 5 years.

Claim.—The combination of the stopper *B*, and the two tubes *C* and *F*, provided respectively with flexible pipes *D* and *G*, the said tubes *C* and *F* placed in such position in reference to each other as to leave just enough space between them for the bodies of the flexible pipes to be compressed therein tightly, and to prevent the escape of vapour from the vessel *A* when required, substantially as described.

No. 25,315. Spring Link or Bar for Chains. (*Chainon ou Baton à Ressort pour Chaines.*)

Albert W. Cox, Hastings, Neb., U.S., 10th November, 1886; 5 years.

Claim.—1st. In a holding device for chains, a link composed of continuous rod or wire bent to form a holding ring at one end, and a double looped spring at the other, in combination with a holding bar having a central elongated slot, substantially as and for the purpose described. 2nd. In a holding device for chains, a curved bar provided with an elongated slot, in combination with a link formed with a holding ring at one end, and a double looped spring at the other, substantially as and for the purpose set forth. 3rd. In a holding device for chains, the combination, with a cross-bar having an elongated central opening, provided with an inwardly projecting lug, of a link formed with a holding ring at one end, and a double looped spring at the other, substantially as and for the purpose set forth. 4th. In a holding device for chains, the combination, with a curved cross-bar having an elongated central opening or slot, of a link formed from a single rod or wire bent to form a double looped spring at one end, and a holding at the other, substantially as and for the purpose set forth. 5th. In a holding device for chains, for combination with a curved cross-bar having an elongated central opening provided with an inwardly projecting lug, of a link formed from a single rod or wire bent to form a double looped spring at one end and a holding ring at the other, substantially as and for the purpose set forth. 6th. In a holding device for chains, a link formed from a single rod or wire first bent to form an ordinary plain link, then doubled over upon its centre and its ends united and formed into a holding ring, in combination with a cross-bar provided with a central elongated opening, substantially as and for the purpose set forth. 7th. In a holding device for chains, a link formed from a single rod or wire, first bent to form an ordinary link, which is then doubled over upon its centre, and its ends united and formed into a holding ring, in combination with a cross-bar having a central elongated opening provided with an inwardly projecting lug, substantially as and for the purpose described.

No. 25,316. Process for Producing Lithographic or Zincographic Copies of Photographs, etc. (*Procédé de Reproduction Lithographique ou Zincographique des Photographies, etc.*)

Mary Walker, George E. Walker and Jean B. G. Bonnaud, London, Eng., 10th November, 1886; 5 years.

Claim.—1st. The herein-described process for producing copies of photograph or other designs, that is to say, covering the original with a coating of composition forming a ground for drawing, drawing thereon, transferring the coating to stone or zinc or other suitable plate and printing therefrom lithographically. 2nd. The preparation and use of a composition consisting of water, dextrine, and starch, with knollin or other equivalent grounding substance to form a coating for a photograph or other design on which original can be copied, substantially as herein described. 3rd. For giving special grain or texture to printed copies, the method herein described of impressing the original with its coating on a grained stone or plate.

No. 25,317. Car for Removing Snow from Railroad Cuts and Yards. (*Char pour Enlever la Neige des Tranchées et des Cours de Chemins de Fer.*)

Joseph Woolley, Rutland, Vt., U.S., 10th November, 1886; 5 years.

Claim.—1st. The combination of a car, with hinged sides, as 1, 2, 3, etc., fastened by means of the straps 9, for the purpose set forth. 2nd. In combination, with the car, the riser 14 with the cutting sides 13, and brace 21 and the seat screw 22 for raising or lowering the riser 14.

No. 25,318. Pot Cover. (*Couvercle de Chaudron.*)

William C. Nyo, Bradford, Penn., U.S., 10th November, 1886; 5 years.

Claim.—1st. An expansible pot cover provided with a detachable handle, substantially as shown. 2nd. An expansible pot cover, provided with caps or washers A holding device J, and a detachable handle which is applied to the cover, substantially as described. 3rd. The combination of an expansible cover, a holding loop or device, and a detachable spring handle which is applied to the cover, substantially as set forth. 4th. An expansible cover and the washers applied to opposite sides, in combination with a looped holding device, the spring handle provided with a projection at its centre to pass through the loop, and the caps applied to the cover to receive the ends of the handle, substantially as specified. 5th. An expansible pot cover made from any suitable material and which is provided with a handle or handles, whereby the cover can be expanded or contracted at will, substantially as shown and described.

No. 25,319. Machine for Holding Chalk for Billiard Tables. (*Porte-Craie pour Tables de Billard.*)

Michael J. Kew, Brantford, Ont., 10th November, 1886; 5 years.

Claim.—A chalk-holder to be used in connection with billiard tables, composed of a semi-circular flat piece of wood A plated at the bottom pulley B, circular steel rod C cord E, wooden ball F, steel wire G, combined with coil springs and clasps, rubber washer H, chalk I, all arranged and combined as shown.

No. 25,320. Appliance for Removing Snow from Railway Tracks. (*Appareil pour Enlever la Neige des Voies de Fer.*)

Wilson Morningstar, Grantham, Ont., 10th November, 1886; 5 years.

Claim.—The knives B, B, B, in combination with framework A having inclined plane C and plough D, substantially as described and for the purpose hereinbefore set forth.

No. 25,321. Injector. (*Injecteur.*)

Paul Schneider, Henry Trenkamp and Nicolas Flammang, Cleveland, Ohio, U.S., 10th November, 1886; 5 years.

Claim.—1st. The combination of the valve C, provided with a loop or opening in its stem, with the valve stem H having a valve formed on its inner end to control the passage of steam, and provided with a cam, the stem H being made to pass through the loop, substantially as shown. 2nd. The combination of the stem H, provided with a stop F, the cam E, and the valve C with the valve G having a loop or opening J in stem, substantially as described. 3rd. In an injector, the combination of the force tube K, with the endwise moving force tube Q, made in two parts, so as to be adjustable in length and which is provided with the two valves R, substantially as set forth. 4th. In an injector, the combination of the force tube K, with the force tube Q which passes through the chamber S, and is provided with perforations for the escape of the water from the tube into the body of injector, for the purpose of relieving the pressure of water in the tube Q, substantially as specified. 5th. In an injector, the combination of the water passage O, the lift tubes M, N, the force tubes K, Q, chambers W, S, overflow water passage Z and the two valves G, H, substantially as shown. 6th. In an injector, the combination of the water passage lift tubes, the stationary and endwise moving force tubes, the chambers W, S, the waste valve H, and the overflow, whereby a constant flow of water can be kept up through the injector without its being forced into the boiler, substantially as described. 7th. In an injector, the combination of the stationary force tube, the water passage, the lift tubes, the two chambers W, S, the endwise moving force tube provided with the valves R, and the inside counter pressure relief chamber and perforations U with the waste valve and overflow, substantially as set forth. 8th. In an injector, the combination of the water passage, the stationary force tube, the lift

tubes and the chambers W, S, with the endwise moving force tube provided with the two valves R, and the ribs X, and the screw plug upon which the ribs rest and support the tube, substantially as specified. 9th. In an injector, a force tube, composed of two or more parts which are adjustable one upon the other, substantially as shown. 10th. In an injector, a force tube, which is composed of two or more parts, the outer ones of which are adjustable upon each other, and which are provided with valves, substantially as described. 11th. In an injector, a force tube composed of two or more parts, which are adjustable one upon the other, and which are provided with perforations, substantially as set forth. 12th. The combination, with an injector of nuts J, provided with the slots K, the pipe L, provided with the projections O, the pipe having an enlarged head on its inner end and which forms a tight joint with one of the inlets, substantially as specified.

No. 25,322. Sleigh Shoe. (*Patin de Traîneau.*)

Isaac B. Seeley, Philadelphia, Penn., U.S., 11th November, 1886; 5 years.

Claim.—1st. A detachable shoe for a sleigh runner, formed of wood and provided with means for connecting the same with the runner, said shoe, when removed from the runner, leaving the latter intact, substantially as described. 2nd. A shoe for a sleigh runner, formed of wood and having means for connecting the same with the runner, consisting of a yoke, a cross-head and a screw, substantially as described.

No. 25,323. Mowing Machine. (*Faucheuse.*)

Albert L. Quilliam, Chateaugay, N. Y., U.S., 11th November, 1886; 5 years.

Claim.—1st. The double sickle bar herein described the parts of which are reciprocated in opposite directions, as set forth. 2nd. A sickle bar having knives bevelled on the underside, as set forth. 3rd. A guard finger for sickle bars formed of a single piece of material, as set forth. 4th. A guard finger for sickle bars formed of a single piece of material and provided with lugs c, as set forth. 5th. The combination of the sickle bars with the connecting rods K, K, the shaft G and the cam and the wrist wheel thereon, as set forth. 6th. The combination of the sickle bars, guard fingers, connecting rods formed with joints a, and the jointed frames A and B, as set forth.

No. 25,324. Combined Heater and Fan Blower. (*Calorifère et Eventoir Combinés.*)

Miles C. Huyett, Detroit, Mich., U.S., 11th November, 1886; 5 years.

Claim.—1st. The combination, with a radiator, of an enclosing case constructed to admit air to the interior, a fan communicating with the interior of the case, and a housing or wall surrounding said case, leaving an air space between it and the housing, said housing constructed to admit air into the air space, and to permit its circulation partially about said case, and give it entrance into the interior of said case, so as to pass through the radiator, substantially as described. 2nd. The combination, with a radiator having an enclosing case constructed to admit air to the interior, of an exterior housing or wall forming an air space between it and said case, air inlets to said air space, and a fan for moving the air through the radiator, the construction being such that the air entering the air-space will circulate partially around the exterior of the radiator, case, entering the same and being moved through the radiator, by the fan, substantially as described. 3rd. The combination, with a radiator having a condensing chamber in connection therewith, a case constructed to admit air to the interior and to emit it therefrom, of an enclosing wall or housing forming an air space between it and said case, air inlets to said air space and a fan to move the air through the condensing chamber and radiator, substantially as described.

No. 25,325. Machinery for Cultivating Land.

(*Instrument d'Agriculture.*)

Frank Proctor, Stevens, Eng., November, 1886; 5 years.

Claim.—1st. A cultivating machine consisting of a steam engine or driving crank shaft a, and crank b, bars c pivoted to links d turning upon fixed cross-bar e, in combination with the angle iron frames f, holding the loose forks or tines g, the bars p and bolts r, and hinged s to the bars c, so that they can be turned up or down and retained by springs u. 2nd. The reversible fork or tine consisting of flat plate t upon bar m, having a narrow bent edge, as described and shown in figures 3, 4, 5, and 6.

No. 25,326. Wick Carrier. (*Porte-Mèche.*)

Jacob Barnett, Jr., Cincinnati, Ohio, U.S., 11th November, 1886; 5 years.

Claim.—1st. A wick-carrier provided with an expander made in sections, and extending within the carrier, substantially as described. 2nd. A wick-carrier provided with an expander made in sections extending within the carrier, and hinged to the bottom of the same, substantially as described. 3rd. A wick-carrier having a sectional expander hinged to, and extending within the same, and provided with a roughened holding surface, substantially as described.

No. 25,327. Apparatus for Utilizing the Current Force of Flowing Water. (*Appareil pour Utiliser les Cours d'Eau.*)

Edwin L. Brady, Stamford, Conn., U.S., 11th November, 1886; 5 years.

Claim.—1st. The combination of a water power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said floating support

and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working circuit containing electrical transmitting devices, and a storage battery in circuit with the dynamo, whereby regularity of the working current is maintained, substantially as described and shown. 2nd. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current of the dynamo to shore, a working circuit containing electrical transmitting devices, and a storage battery with electrical connections whereby it may be thrown into or out of circuit as required, to maintain the continuity and regularity of the working current, substantially as described and shown. 3rd. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore for the performance of work, and a storage battery in circuit between the dynamo and the working circuit, and located upon the floating support, substantially as described and for the purposes set forth. 4th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, and a storage battery and electrical connections therefor, whereby it may be thrown into and taken out of the circuit of the dynamo at will. 5th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise fixed in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, and a storage battery and electrical connection therefor, whereby it may be thrown into or out of circuit with the dynamo at will, said storage battery and connections being also located upon the floating support. 6th. The combination of a dynamo-electric machine mounted upon, and driven by a floating current motor, and provided with a flexible electrical conductor for conveying its current to distant fixed points, for utilization with storage batteries arranged in sections in the circuit of the dynamo, and provided with working circuits and electrical connections, whereby currents of varying degrees of tension as desired may be taken from the said batteries for the performance of work, substantially as described and for the purpose set forth. 7th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working circuit connected with said conductors, and a storage battery in multiple arc with said working circuit, substantially as described and for the purpose set forth. 8th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working circuit connected with said conductors, a storage battery in multiple arc with said working circuit, and a circuit breaker in the branch circuit passing through the storage battery, substantially as described and for the purpose set forth. 9th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, electrical conductors for conveying the current generated by the dynamo to shore, a working circuit connected with said conductors, a storage battery in multiple arc with said working circuit, and three circuit breakers, one in the storage battery branch and one on each side of the reel in the main circuit, substantially as described and for the purpose set forth. 10th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, conducting cables for conveying the electricity by said dynamo to shore, and a tank on said float for receiving a reserve coil of said cable. 11th. The combination of a water-power mechanism, a floating support therefor, anchored or otherwise secured in the stream, a dynamo-electric machine mounted on said support and driven by said water-power mechanism, conducting cables for conveying the electricity generated by said dynamo to shore, a tank for said float for receiving a reserve coil of said cable, and a reel for readily running the cable on and off the float. 12th. The combination of a water-power mechanism, a floating support therefor, a dynamo-electric machine mounted on said support and driven by said power mechanism, a cable for carrying the current of said generator to shore and a reel for carrying a part of said cable and running it on and off the float.

No. 25,328. Shuttle for Sewing Machines.

(Nouvelle de Machine à Coudre.)

Frederick P. Cheney, Glover, Vt., U.S., 11th November, 1886; 5 years.

Claim.—1st. The combination, in a cylindrical shuttle provided with the chamber A, of the double spring B and the fulcrum C, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the shuttle case, of the leaf D provided with the curved edge N, projection d, central guide opening F, and the tension openings S, S', with the leaf a substantially as described and for the purpose hereinbefore specified. 3rd. The covering plate B composed of the leaves a and b, the leaf b having a portion longitudinally depressed or sunk below the leaf a, and having a curve d edge n, in combination with the shuttle case having elliptical opening therein, substantially as described and for the purpose hereinbefore set forth. 4th. The open ended cylindrical shuttle case provided with an elliptical opening in its side, adapted to admit of the insertion and removal of the bobbin therethrough, in combination with the double tension spring B, arranged to serve as a cover for said opening, substantially as described and for the purpose hereinbefore set forth.

No. 25,329. Wire Fence Stay.

(Etat de Clôture en Fil de Fer.)

William J. Adam, Joliet, Ill., U.S., 11th November, 1886; 5 years.

Claim.—1st. A stay for wire fences bent at short regular intervals throughout its length, to form side loops for the reception of the fence wires, and side entrances leading to said loops to conduct the fence wires to said loops, in the manner substantially as set forth. 2nd. A stay for wire fences having side loops and side entrances leading to said loops, formed at short regular intervals throughout its length, and adapted to be attached to the wires of a fence by conducting the fence wires in said loops through said side entrances, when said loops are placed or held parallel with the fence wires, and to lock the fence wires in said loops when the stay is rotated to change the position of said side entrance, in the manner substantially as and for the purpose set forth. 3rd. A stay for wire fences bent at regular intervals throughout its length, to form loops for the reception of the fence wires, and side entrances leading to said loops, wherein the portions of the stay forming said entrances overlap or pass each other and stand apart from each other, in the manner substantially as and for the purpose specified. 4th. A stay for wire fences bent at short regular intervals along its length, to form loops for the reception of fence wires, and entrances leading to said loops to admit the fence wires, said loops, in combination with the wires of a fence and adapted to be secured to said fence wires, to lock them in said loops by securing one end of the stay to one or more of the fence wires, in the manner substantially as set forth. 5th. The stay for wire fences, shown and described, having side loops for holding the fence wires and adapted to lock the fence wires therein by means of partially rotating said stay, substantially as set forth. 6th. The stay for wire fences, shown and described, having side loops for holding the fence wires and adapted to lock the fence wires therein by means of closing the entrance to said loops, substantially as set forth.

No. 25,330. Bed Bottom. (Sommeil de Lit.)

Dallas Knowlton, Brantford, Ont., 11th November, 1886; 5 years.

Claim.—In a bed-bottom, the combination of sides A with spiral springs D and E, also the flexible bent non-elastic band G made of wire cloth (thin metal or wire) and attached by hooks F to sides A, substantially as and for the purpose hereinbefore set forth.

No. 25,331. Wrench. (Clé à Ecou.)

James A. Fairbanks, Augusta, Me., U.S., 12th November, 1886; 5 years.

Claim.—1st. In a wrench of the class described, a handle having a bolt integral therewith, said bolt being connected to one jaw of the wrench and having an external screw cut thereon, in combination with the second jaw of the wrench, all operating as fully described. 2nd. In a wrench of the class described, a handle having a bolt integral therewith, said bolt being connected with one jaw of the wrench, and having an external screw cut thereon, said screw being cut off on the side to give a quick return, in combination with the second jaw of the wrench, all operating as fully described. 3rd. In a wrench of the class described, the combination of the shank having the bolt C with external screw integral therewith, the jaw B on the case A, the sleeve D and the shank U having concave screws 1, 2, 3, 4 and 5, and jaw a thereon.

No. 25,332. Nut Lock. (Arrête-Ecrou.)

Sarvas L. Shellenbeger, Tyler, Texas, U.S., 11th November, 1886; 5 years.

Claim.—In combination with an ordinary threaded bolt and ordinary nut thereon, a separate soft locking ring, formed substantially as shown and described, and adapted to be slipped over the end of said bolt against said nut and compressed upon the threads of said bolt, substantially as set forth.

No. 25,333. Gas Meter. (Compteur au Gaz.)

Archie Langris, Chicago, Ill., U.S. and Peter English, Woodstock, Ont., 11th November, 1886; 5 years.

Claim.—1st. In a gas meter, the expansible chambers A, F, connected by a liquid joint J, substantially as and for the purpose specified. 2nd. In a gas meter, the cup F and reservoir E, in combination with the weighted lever H, as and for the purpose specified. 3rd. In a gas meter, the cup F and reservoir E, in combination with the lever H, arm J and bar J, as and for the purpose specified. 4th. In a gas meter, the cup F in combination with the reservoir E and liquid joint J, as and for the purpose specified.

No. 25,334. Carburetted Attachment for Gas Fixtures. (Appareil à Carburer le Gaz.)

James Kidd, (administrator of the Estate of Joshua Kidd), Newark, N.J., U.S., 11th November, 1886; 5 years.

Claim.—1st. The combination of a carburetted-vessel, a gas burner and gas heater, whereby the gas is heated by heat derived from the gas flames before entering the carburetted-vessel, for the purpose of melting and vaporizing the hydrocarbon, substantially as described. 2nd. The combination of a gas heater consisting of a pipe or chamber in which the gas is heated before entering the carburetted-vessel, for the purpose of melting and volatilizing the hydrocarbon contained therein, a gas burner and a carburetted-vessel detachable from the fixed portion of the apparatus, substantially as described. 3rd. The combination of the heater D, the burners A and the carburetted-vessel C, having a single opening or neck G, and detachably suspended from the fixed part of the apparatus at said opening, substantially as described. 4th. The combination, in a carburetted gas fixture, of a gas inlet pipe E, a heater D surrounding said pipe, a

gas burner A and a carburetting-vessel C, whereby the heat from the gas flame will be communicated by the heater to the inlet pipe to heat the gas before entering the carburetting-vessel, for the purpose set forth. 5th. The combination, with a gas fixture, comprising a heating pipe or chamber in which the gas is heated by the illuminating flames previous to its entering the carburetting-vessel, for the purpose of melting and vapourizing the hydrocarbon contained therein, and a carburetting-vessel having a single opening and detachably suspended from the fixture at said opening, substantially as described. 6th. The combination of the fixed pipe B, the heater D and tubular casing E, the burners A and the carburetting-vessel C having an opening or neck G, and detachably suspended from the casing at said opening, substantially as described. 7th. The combination of the fixed pipe E, the heater D and tubular casing B attached to said pipe, the burners A supported by said tubular casing, and the carburetting-vessel C having a single opening or neck G, and detachably suspended from the casing at said opening, substantially as described.

No. 25,335. Manufacture of Paper Bags and Machinery Therefor. (*Fabrication des Sacs de Papier et Appareil pour cet objet.*)

Robert Kilgour and Joseph Kilgour, Toronto, Ont. (Assignees of Felix W. Leimbach, Clarence A. Wollo and Edward H. Brunner, Bethlehem, Penn., U.S.), 11th November, 1886; 5 years.

Claim.—1st. The mode, herein described, of making a tube with tucked-in sides, said mode consisting in pasting one or both edges of a longitudinally moving sheet or web of paper, forming vertical tucks in said web at proper distance apart, gradually flattening and bending inward said tucks, and finally folding over and securing the edges of the web, all substantially as specified. 2nd. The combination, in a machine for making paper tubes or paper bags, of mechanism for longitudinally feeding a web or sheet of paper and pasting one or both edges of the same, as it is fed, a former, constructed substantially as described, whereby vertical tucks are first formed in the web and then flattened and bent inward, and folding devices, whereby the opposite edges of the web are caused to overlap each other, and complete the tube, all substantially as specified. 3rd. The combination, in a paper-bag machine, of devices for feeding a tube, a longitudinally-moving rod and plate for distending and folding back the mouth of the tube, and laterally-moving plates for spreading and folding the tucked-in sides of the tube, whereby the primary fold of the bag-bottom is formed, all substantially as specified. 4th. The combination, in a paper-bag machine, of devices for feeding a tube a rod and plate for distending and longitudinally folding the mouth of the tube, side-folders for acting on the tucked-in sides of the tube, a plate for transversely creating the primary fold of the bottom and folders for binding down and securing the flaps formed thereby, all substantially as specified. 5th. The within-described former for tucking the web of paper, said former comprising the plate A with rib *a*, the plate B with flange *b*, and the intervening block D, with inclined and under-cut edges, all substantially as set forth. 6th. A former, having slots merging gradually from a V-shape at one end of the former into single contracted and inwardly inclined slots at the other end of the former, as specified. 7th. The combination of tube-feeding and severing devices, the presser-plate, the distending-rod, two pairs of hinged plates *f*, and means whereby said plates are folded and unfolded and carried laterally from and toward the tube, all substantially as specified. 8th. The combination of a presser-plate B, arms *f* pivoted to said plate B, and hinged plates *f* carried by said arms *f*, as set forth. 9th. The hinged folding plates *f*, each having a bevelled inner end, whereby, when the plates are unfolded, said inner ends are adapted to the internal triangular flaps formed in the bag-bottom, all substantially as set forth. 10th. The combination of the hinged plates *f* and their carriers, with hooked rods *e* for folding and unfolding said plates *f*, as set forth. 11th. The combination of the pressing-plate B and means for reciprocating and for elevating and depressing the same, the hinged plates *f*, the pivoted arms *f* carrying the same, the cranked rods *e*, the cam-plates *g* and the springs *h*, as set forth. 12th. The combination of the plate B, guided rods *c*, cams *m*, links *ci*, arms *pi*, rock shaft *v* and means for vibrating the latter, as set forth. 13th. The combination of tube-feeding devices, a table A having an opening therein, rolls G, G', adjacent to said opening, a plate F, and means whereby the plate is first moved vertically to crease the tube, and then longitudinally to tuck the fold between the rolls G, G', as set forth. 14th. The combination of a table, having an opening therein, a paste trough and roller, a blade F, and mechanism whereby a combined vibrating movement over the paste-roller, and a vertical reciprocating movement through the opening are imparted to the said blade, as described. 15th. The combination of the table A, having an opening therein, the yielding table E, the plate F, having a combined vertical and vibrating movement, the rollers G, G', the pivoted folding arms H, H, and means for operating said blade rollers and arms, as set forth. 16th. The combination of the plate E and its bar B', the shaft W having an arm *u* to which said bar is hung, the fulcrum-block *es* and spring *ea*, and means for vibrating the shaft *u*, as set forth. 17th. The combination of the pivoted folding arms H, the spindles of which have slotted arms *st*, the arms *st* adapted to the slots of the arms *st*, the rock-shaft *rs*, having an arm *rs* with segmental slot, and the shaft *rs* having a crank-pin *rs* adapted to said segmental slot, as set forth. 18th. The combination of the plate E, of the tube-forming device, with the bonding fingers *e* beneath the plate, and the spring-pressure roller *et* above the same, whereby the tucks are confined and prevented from being drawn out by the action of the fingers *e* in forming the final folds of the tube, as specified.

No. 25,336. Steam Power for Bundling Wood. (*Machine à Vapeur pour Fagoter le Bois.*)

Darwin A. Greene, New York, N. Y., U. S., 11th November, 1886; 5 years.

Claim.—1st. In a wood-bundling machine, the combination, with a steam-actuated piston having a horizontal plano, as at C, of a lever

pivoted to two toggles, the one pivoted stationarily to the frame and the other to the movable wood-carrying cradle, the said lever carrying a friction-roller, which rides upon the plane surface of the piston, as set forth. 2nd. The combination, with the piston, the lever and toggles, as described, of the cradle J, the stationary trap A, and a right and left screw U, arranged between the cradle and toggles, to adjust the throw of the cradle, as set forth. 3rd. The combination, with the piston, having a horizontal arm, and with the lever U and toggles, as described, of an adjustable threaded vertical pin U operating through the arm of the piston, and an elastic stop W arranged to stop the descent of the piston, yielding, as set forth. 4th. In a bundling machine, as described, the cradle J having lower semicircular contour and sides curving outwardly and upwardly, and the adjustable straps A, A', having semicircular upper contour with sides curving outwardly and downwardly, combined and arranged as shown, to compress and release laterally, as well as vertically, as herein specified. 5th. The combination, with the compressing-cradle J, the cylinder and piston, and suitable connections between said parts, substantially as shown, of the oscillating valve M, arranged at the lower end of the cylinder and adapted to control the supply of steam thereto, the cross-bar N rigid with the valve stem, crank-levers P₁, P₂, links O₁, O₂, connecting said levers with the cross-bar N, and treadles Q₁, Q₂, for operating the crank levers to admit or exhaust steam at will, as and for the purposes specified. 6th. In a wood-bundling machine, substantially as described, the combination, with the cradle J, of the curtains formed by the parts J₂, J₁, adjustably secured together by screw and slot connection, and pivoted at J₁ to the sides of the cradle to exclude dust and dirt from the working parts, as set forth. 7th. In a bundling machine, as described, the combination, with the guide A₁ and yielding stop W recessed in the cylinder head of the piston C, C', having a horizontal arm, an adjustable pin working through said arm and against said stop, a cradle J, a lever and toggles, as described, transmitting power from the piston to the cradle, and a right and left screw U arranged between the cradle and toggle to adjust the throw of the cradle, as herein set forth.

No. 25,337. Hammer. (*Marteau.*)

Christopher J. Grellner, St. Louis, Mo., U. S., 11th November, 1886; 5 years.

Claim.—1st. The combination, of the wedge and nail, the wedge being made in one part, with a groove or opening, and an incline at the lower end of the groove or opening, and the nail securing said wedge in the handle, substantially as set forth. 2nd. In combination with a hammer, having an eye therethrough, and a handle inserted in said eye, of a grooved wedge driven into the handle, and a nail inserted in said groove, substantially as and for the purpose set forth. 3rd. In combination with a grooved wedge and nail, the wedge being made in one part with an opening at the lower end of the groove, the bottom of the opening being inclined and the nail having an inclined surface, substantially as shown and described for the purpose set forth. 4th. The combination of the wedge and nail, the wedge having a groove semicircular in shape in transverse section, and an opening at the lower end of the groove, with an incline F, and the nail being semicircular in transverse section and having an incline H, at its lower end, substantially as and for the purpose set forth. 5th. The combination of the wedge having a groove B, opening F, and projection I, the opening F being inclined at its bottom, and the nail provided with an inclined inner end, substantially as and for the purpose set forth.

No. 25,338. Cross-Cut Saw. (*Scie de Travers.*)

Silas Toles, St. Thomas, Ont., 11th November, 1886; 5 years.

Claim.—1st. The combination of a pair of cutters B and C, cutting both sides of the kerf and being bevelled on opposite sides, separated by a throat or slot, as E, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of drag teeth, with the cutters B and C, cut upon a steel plate, substantially as and for the purpose hereinbefore set forth.

No. 25,339. Nut Lock. (*Arrête-Ecrou.*)

Richard T. Sylvester, Rosenfeld, Man., 11th November, 1886; 5 years.

Claim.—1st. A nut lock, composed of a sheet or band of metal forming the bent or bowed out body A, the shoulders B bent at an angle from the body, and the flanges C bent at an angle from the shoulders and having formed in them the slots E and concave edges F, as shown and described. 2nd. In the above described nut lock, the slots E formed in the body A and in the shoulders B, substantially as herein shown and for the purpose set forth.

No. 25,340. Running Gear for Vehicle. (*Train de Voiture.*)

David S. Anderson, McGrawville, N. Y., U. S., 11th November, 1886; 5 years.

Claim.—1st. The combination of the body of a vehicle, the side bars secured to the rear axle and having their forward ends connected by cross-pieces connected to the forward axle, and springs, consisting of rearwardly-curved portions and of upwardly curved eyed portions, having their forward lower ends secured respectively to the rear axle or rear ends of the side bars, and to the cross-pieces connecting the said bars and having their upwardly-projecting upper ends respectively secured to shackles projecting from the sides of the body to the rear of the centre of the load and to the forward end of the body, as and for the purpose set forth. 2nd. The combination of the body of a vehicle, side bars secured at their rear ends to the rear axle, and connected at their forward ends by cross-pieces connected to the front axle, rear springs consisting of rearwardly-curved portions and upwardly-projecting eyed upper ends and secured at the lower ends to the rear ends of the side bars between the said ends and the rear axle, and secured at the upper ends to shackles projecting laterally from the sides of the body to the rear of the centre of the load, and forward springs consisting of rearwardly-curved portions and up-

wardly-projecting eyed ends secured at the lower ends to the cross-pieces, and at their upper ends to shackles projecting from the forward end of the body, as and for the purpose shown and set forth.

No. 25,341. Meat Safe. (*Garde-Manger*.)

Robert J. Shaw, Folkeston, Eng., 12th November, 1886; 5 years.

Claim.—1st. Constructing the framework of a meat safe, substantially as hereinbefore described and shown. 2nd. Fitting such a framework with double perforated panels, and packing the same with broken charcoal, all substantially as hereinbefore described and shown. 3rd. Fitting safes when made in the ordinary manner, and likewise existing safes, with double perforated panels, and packing the same with broken charcoal, all substantially as hereinbefore described.

No. 25,342. Stump Extractor and Tree Carrier. (*Efforceau Arrache-Souche*.)

William H. Hall, Battle Creek, Mich., U.S., 12th November, 1886; 5 years.

Claim.—1st. In a device for extracting and transporting trees, an axle having rigidly attached thereto a load B, in combination with a platform E and forward axle A, substantially as shown and for the purpose set forth. 2nd. The axle A having a board B rigidly attached thereto, a rotary bar secured to the axle and provided with a pawl and ratchet and connecting chains, a platform provided with hooks for engagement with said chains and a forward axle, substantially as shown and for the purpose set forth. 3rd. In a device for extracting and transporting trees, an axle having a board rigidly attached with central portion thereof, and means for attaching said board to the trunk of the tree a block F attached to the upper end of the bar, substantially as shown and for the purpose set forth.

No. 25,343. Hoof Pad. (*Bourrelet de Sabot*.)

William Mulloy, Great Falls, N. H., U. S., 12th November, 1886; 5 years.

Claim.—1st. The improved detachable hoof pad or guard, substantially as described, composed of the two sections flanged, arranged and pivoted together, and provided with the expansion spring, all being essentially as set forth. 2nd. The detachable hoof pad or guard composed of the two sections flanged, arranged and pivoted together and provided with the expansive spring and the locking stud, all being essentially as represented.

No. 25,344. Heating Drum. (*Poêle Sourd*.)

Robert Martin, Arthur, Ont., 12th November, 1886; 5 years.

Claim.—1st. The hood A of the shape shown mounted on lip a, and having a drum B attached, the said drum being provided with a cover b containing an aperture large enough to enclose the stove-pipe C, substantially as shown and for the purpose specified. 2nd. The combination of the hood A and drum B, with a branch E for the purpose of conveying hot air to apartments to be heated, substantially as shown.

No. 25,345. Car-Coupling. (*Attelage de Char*.)

David L. Richards, St. John, N. B., 12th November, 1886; 5 years.

Claim.—1st. The combination of the draw-bar having in rear of its flaring mouth, the chamber provided with the inclined bottom, and also having passages for the shackling pin and its link holder, and latch to move in with the shackling pin, its chambered projection or link holder, and the gravitating latch spanning and pivoted to the said link holder and arranged therewith and with the draw-bar, essentially in manner and to operate substantially as set forth. 2nd. The combination of the draw-bar having in rear of its flaring mouth, the chamber provided with the inclined bottom, and also having passages for the shackling pin and its link holder, and latch to move in with the shackling pin, its link holder recessed on its opposite sides, as described, and with the gravitating latch pivoted to such link holder and furcated in its upper part, and having such part bent or arranged at a right angle or thereabouts with the shank of such latch, all being substantially as described. 3rd. The link holder chambered on its opposite sides, and provided with the vertical slot, in combination with the gravitating latch having its upper part furcated and bent at or about a right angle to the shank, and connected to the link holder by a pin going through the slot, and the prongs of the said upper part, all being substantially as set forth. 4th. The draw-bar provided with the grooved or chambered projection, the link-receiving chamber and the passages for the shackling pin, and its link holder and latch to work in, in combination with the said pin link holder and the gravitating latch, constructed and arranged and applied, substantially as set forth. 5th. The draw-bar notched or recessed in the abutment of its mouth, and connected by a chain to the coupling link, and provided with the link receiving chamber, in combination with such link and with the coupling pin, the link holder and the gravitating latch, constructed, arranged and applied, substantially as set forth. 6th. The combination of the link holder provided with the machine dx, with the gravitating latch provided with the incline z and connected with such link holder, substantially as described. 7th. The link chamber decreasing in width and depth from its top downward, as described.

No. 25,346. Clothes Drier. (*Séchoir à Linge*.)

Daniel J. Smith, Canton, Ohio, U.S., 12th November, 1886; 5 years.

Claim.—1st. The combination, with the head A having a screw B, and flanges or ears a provided with extensibles G and cross-bars d, a, of the adjustable arms F having slots P, and pins f, and the pins e, substantially as described. 2nd. The combination, with the post or standard b having conical cap C, of the head A provided with conical socket B, having a notched ring D, and the hook E engaging said ring, substantially as described.

No. 25,347. Horseshoe. (*Fer à Cheval*.)

Alfred L. Stevens, Darion, Conn., U. S., 12th November, 1886; 5 years.

Claim.—1st. The combination, with the body, of a horseshoe having recesses G and holes H through it, of calks having bases F corresponding with said recesses, and lugs I corresponding with said holes, and pins P adapted to be driven through the corresponding holes in the body of the shoe and the calks, whereby the latter are securely held in place. 2nd. The body of the shoe having recesses G and holes K, M and N, in combination with the calks having bases F, and lugs I having holes L registering with the holes through the shoe, and pin P adapted to be driven through the corresponding holes in the shoe and lugs I. 3rd. The body of the shoe having a recess G, hole K and hole M, at the toe of the shoe, and a toe calk having a base corresponding with said recess, and lugs I with hole L through it, and a pin P adapted to be driven from the front entirely through the lug and the shoe. 4th. The body of the shoe having recesses G, holes K and N, and slots O, into which holes N lead, in combination in the calks having bases corresponding with recesses G, and tapering lugs I having holes L through them, and pins P adapted to be driven in at the heel of the shoe and extending through lugs I and into slots O. 5th. The body having recesses G adapted to receive the calks, and support them as shown, tapering vertical holes K, tapering longitudinal holes M and N, and slots O, in combination with calks having bases F and lugs I with tapering holes L, and tapering pins P adapted to engage the corresponding holes through the shoe and lugs.

No. 25,348. Dry Closet. (*Laitrine*.)

Isaac D. Smend, Toledo, Ohio, U.S., 12th November, 1886; 5 years.

Claim.—1st. The combination, in a building, of a permanent or fixed fireproof vault D, having one or more fireproof hoppers arranged directly over said vault, a ventilating or exhaust shaft I communicating with the vault at one end, and an air inlet C communicating with the exterior atmosphere at its opposite end, the construction and arrangement being substantially as shown and described. 2nd. The combination, in a building, of a foul air gathering room A, provided with a door or doors for cutting off communication with the rooms of the building, the vault D connected to the ventilating shaft I, and the direct air inlet C provided with a door a, said parts being arranged to operate, substantially as described, whereby the air for supplying the current through the vault can be taken from within or without the building at pleasure. 3rd. The metal hopper J, provided with the metal cover G having the flange l arranged to shut down within the mouth of the hopper, substantially as and for the purpose set forth. 4th. The metal hopper J, provided with the lateral projection or flange f and the wooden seat g, in combination with the metallic cover G provided with the flange l, arranged to fit within the mouth of the hopper, substantially as and for the purpose set forth. 5th. In combination with the vault D, the metal cover a, place c and non-combustible hopper J, provided with a non-combustible or metallic cover G, substantially as shown and described. 6th. The combination, in a building, of a vault D for a dry closet, an air inlet C at one end for the admission of air from the exterior of the building, an exhaust or ventilating shaft connected to the vault at its opposite end, and a fan N or equivalent means for creating a draft through the vault and shaft, when the building is not heated, substantially as set forth. 7th. In combination, the vault D, having an air inlet C at one end for the admission of air from the exterior of the building, an exhaust or ventilating shaft I connected to the vault at its opposite end, and a furnace or heater H located within the shaft, and having its doors arranged to be accessible from the exterior of the shaft, substantially as shown and described. 8th. In a vault for dry closets, the arrangement of porous pipes a, in combination with drain pipe d, substantially as shown and described. 9th. In combination with the vault D of a dry closet, the porous pipe a, covered with a layer of sand or similar porous material, substantially as and for the purpose set forth.

No. 25,349. Fruit Picker. (*Cueilleur*.)

Walter W. Burgess, Toronto, Ont., 12th November, 1886; 5 years.

Claim.—A fruit picker consisting of a basket constructed preferably of galvanized sheet metal but may be of other material, and having a wire fringe around the upper edge of the basket, and a socket underneath the bottom thereof to receive a pole for operating the same, substantially as shown and described and operating as set forth.

No. 25,350. Lock Hinge. (*Penture-Arrête*.)

Oliver H. Taylor, Brooklyn, U.S., 12th November, 1886; 5 years.

Claim.—The combination, with the lock hinge B, B', D, of the dog M pivoted to the part B', and having an arm M' formed in an arc having the pivotal B' for a centre, and provided with an engaging notch m, and means for holding said dog against an upward movement sufficient to disengage the two parts of the hinge when the dog is in operation, as set forth.

No. 25,351. Steam Engine. (*Machine à Vapeur*.)

Henry H. Westinghouse, Pittsburgh, Penn., U. S., 13th November, 1886; 5 years.

Claim.—1st. In a single acting compound engine, the combination of a crank case, a high pressure cylinder, and a low pressure cylinder of larger diameter connected to said crank case, and pistons fitting said cylinders and open to the crank case through surfaces of equal area on their sides adjacent thereto, substantially as set forth. 2nd. In a single acting compound engine, the combination of a crank case, a high pressure cylinder and a low pressure cylinder of larger diameter connected to said crank case, a trunk fixed to the low pressure piston on the side adjacent to the crank case, and corresponding in diameter with the high pressure piston, and a head closing the

crank case end of the low pressure cylinder, and provided with a sleeve or casing inclosing the trunk of its piston, substantially as set forth. 3rd. In a single acting engine, a cylinder having a closed internal cushion chamber on the side of its piston, opposite to that which receives steam pressure, substantially as set forth. 4th. In a single acting engine, the combination of a cylinder and a piston working therein, and having a trunk on its side opposite that which receives steam pressure, said trunk passing through a head in the adjacent end of the cylinder, and forming with the piston a closed cushion chamber therein, substantially as set forth. 5th. In a single acting engine, the combination of a cylinder, a piston working therein and having a trunk on its side opposite that which receives steam pressure, said trunk passing through a head in the adjacent end of the cylinder, and forming with the piston a closed cushion chamber therein, and a check or relief valve controlling a passage leading out of said cushion chamber, substantially as set forth.

No. 25,352. Steam Engine Governor. (Gouverneur de Machine à Vapeur.)

Francis M. Rites, Pittsburgh, Penn., U. S., 13th November, 1886; 5 years.

Claim.—1st. The combination of a weighted eccentric mounted adjustably upon a driving shaft, a distribution valve coupled to and actuated by said eccentric, and a pressure device, whereby the action of gravity and inertia, or either, upon the valve mechanism, is neutralized by an equivalent opposing force, substantially as set forth. 2nd. The combination of a weighted eccentric mounted adjustably upon a driving shaft, and a distribution valve coupled to and actuated by said eccentric, said valve being unbalanced as to pressure in the direction opposed to the action of its gravity and that of its operating mechanism, substantially as set forth. 3rd. The combination of a weighted eccentric mounted adjustably upon a driving shaft, a distribution valve coupled to and actuated by said eccentric, and an auxiliary piston working in a chamber adapted to be supplied with steam or other expansive fluid, substantially as set forth. 4th. The combination of a weighted eccentric mounted adjustably upon a driving shaft, a distribution valve coupled to and actuated by said eccentric, said valve being unbalanced as to pressure in the direction opposed to the action of its gravity and that of its operating mechanism, and an auxiliary piston working in a chamber adapted to be supplied with steam or other expansive fluid, substantially as set forth. 5th. The combination of a weighted eccentric mounted adjustably upon a driving shaft, a distribution valve coupled to and actuated by said eccentric, an auxiliary piston working in a chamber adapted to be supplied with steam or other expansive fluid, and a differential check valve governing a passage leading out of the piston chamber, said valve carrying a piston of smaller diameter, and a pipe or passage leading from the valve chest to the face of said smaller piston, substantially as set forth. 6th. The combination of an eccentric mounted adjustably upon a driving shaft, a distribution valve coupled to and actuated by the eccentric, a governor, consisting of a single weight pivoted on said shaft and connected to the eccentric, and a centrifugally acting spring connected to the weight and a pressure device for counteracting the gravity of the valve and connected operating mechanism by an equivalent opposing pressure of steam, or other expansive fluid, substantially as set forth. 7th. The combination, with an automatic cut-off mechanism, of a pressure device acting to alternately resist and assist the movement of the reciprocating parts, and thereby to counteract the inertia thereof at each terminal of the traverse of the valve, substantially as set forth.

No. 25,353. Machine for Nailing on the Heels of Boots and Shoes. (Machine à Clouer les Talons des Chaussures.)

Louis Coté, St. Hyacinthe, Que., 13th November, 1886; 5 years.

Claim.—1st. The combination, in a sole and heel nailing machine, of the standard D, provided with plunger E, having projections L and the rod F, head G, having nail-receiving holes H, said holes also receiving and guiding said projections L, as shown and described, follower-block a, slide bar a', toggle-joint ii, ii', and a device for actuating the said toggle-joint by means of a treadle B₃, and counter-balance weight g₂, with said treadle B₃, and counter-balance weight g₂, as described, the whole constructed and arranged, substantially as shown and described. 2nd. The combination, in a sole and heel nailing machine, of the standard D, provided with plunger E, having projections L and the rod F, head G, having nail-receiving holes H, said holes also receiving and guiding said projections L, as described, follower-block a, slide bar a', toggle-joints ii, ii' and iii, connecting rod pi and treadle B₃, the whole constructed and arranged substantially as shown and described. 3rd. The combination, in a sole and heel nailing machine, of the standard D, provided with plunger E, having projections L and the rod F, head G, having nail-receiving holes H, said holes also receiving and guiding said projections L, as shown and described, follower-block a, toggle-joints ii, ii' and iii, connecting rod pi, treadle B₃ and counter-balance weight g₂, the whole constructed and arranged substantially as described and shown. 4th. The combination, in a sole and heel nailing machine, of the standard D, provided with plunger E, having projections L and the rod F, head G, having nail-receiving holes H, said holes also receiving and guiding said projections L, as shown and described, follower-block a, toggle-joint ii, ii', having adjustable eye g₁, the whole constructed, arranged and operated substantially as described and shown.

No. 25,354. Steam Engine. (Machine à Vapeur.)

Henry H. Westinghouse, Pittsburgh, Penn., U. S., 13th November, 1886; 5 years.

Claim.—The combination, in a compound engine, of a cylinder or cylinders having piston spaces of differential volumes, a main or steam distribution valve adapted to effect successively the admission of boiler steam to the smaller piston space, the exhaust of steam therefrom into the larger piston space, and the exhaust from the

larger piston space, an eccentric mounted on the crank-shaft with the capacity of movement transversely to the crank line, and having its strap coupled to the stem of the distribution valve, and a governor fixed upon the crank-shaft and coupled to said eccentric, substantially as set forth.

No. 25,355. Washing Machine. (Machine à Laver.)

Alfred Grenier, Boucherville, Que., 13th November, 1886; 5 years.

Résumé.—Dans une machine à laver de forme polygone, les baignettes mobiles prismatiques e et les cadres polygonaux D, en combinaison avec le brasseur F, G, K, M, le réservoir A, B, E, N, et le support à torduso L, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 25,356. Steam Engine Governor. (Gouverneur de Machine à Vapeur.)

Francis M. Rites, Pittsburgh, Penn., U. S., 13th November, 1886; 5 years.

Claim.—1st. The combination, of an eccentric or crank pin pivoted upon a crank shaft, a distribution valve adapted to reciprocate in a substantially vertical plane, and coupled to said eccentric, and a governor weight pivoted upon the crank-shaft and coupled to the eccentric so as to move in opposite direction thereto, substantially as set forth. 2nd. The combination of a crank arm, an eccentric pivoted thereto on one side of the axis of the crank shaft, a governor weight pivoted thereto on the opposite side of the axis of the crank-shaft, a link connecting the governor weight and eccentric on the side of the crank shaft farthest from the free end of the weight, and a spring bearing against the crank arm and the governor weight, substantially as set forth. 3rd. The combination of a crank arm, an eccentric and a governor weight, each pivoted thereto and coupled by an intermediate connection, so as to move in opposite directions upon their pivots, a pin coupled to the governor weight and passing freely through the crank arm, and a spring bearing against an abutment on the crank arm and against a stop on said pin, substantially as set forth.

No. 25,357. Latch Operating Device. (Appareil pour faire Mouvoir les Clenches.)

Orvillas H. Gilbert, Newark, N.J., 13th November, 1886; 5 years.

Claim.—1st. In latch operating devices, the combination of a rose plate having a shank perforation therein, a latch-actuating lever pivoted to said rose-plate, above the said shank perforation and extending down below the latter, and having an end or finger, which, when the rose-plate is secured to the door, projects into the lock or latch case and engages with the latch, and a lever-actuating plate connected with and operated by a rotating knob, and which engages with the latch-actuating lever, causing the same to draw the latch whether the knob is turned to the right or to the left, substantially as and for the purposes set forth. 2nd. In latch-operating devices, the combination, with a lever pivoted within a rose above the shank perforation and extending down below the said shank perforation, and having a bent end adapted to engage with and actuate a latch of a reversible plate, adapted to engage with either side of said pivoted lever, and mechanism, by means of which said reversible plate is caused to engage with and operate said lever, for the purposes set forth. 3rd. In latch-operating devices, in combination, a rose-plate, a lever pivoted within said rose-plate above the shank perforation therein, and extending down below said perforation, having a bent end adapted to engage with and actuate a latch, a reversible plate, having posts d, d', thereon, which engage with said lever, and a knob handle with which said reversible plate is connected, and by which it is operated, for the purposes set forth. 4th. In latch-operating devices, in combination, a rose-plate, an outer fixed shank x, a knob composed of two portions h, g, the portion h being provided with an inner shank xi, having a recess K therein, a bolt y, the head of which rests in the recess K, a reversible plate secured to the inner end of the bolt, provided with posts d, d', and a lever pivoted to the rose, above the shank perforation, all said parts being arranged and adapted to operate substantially as and for the purposes set forth.

No. 25,358. Heel Counter Machine. (Machine à Contreforts de Chaussures.)

Louis Coté, St. Hyacinthe, Que., 13th November, 1886; 5 years.

Claim.—In a machine for shaping material into heel-counters, the combination of the frame A, shaft C, former D and mould E being set eccentrically the one to the other, as described, so as to have the space F between the said former and mould narrower at one side than the other, substantially as described.

No. 25,359. Umbrella Holder. (Porte-Parapluie.)

Charles W. Rogers (assignee of Charles G. Ulings), Boston, Mass., U. S., 16th November, 1886; 5 years.

Claim.—1st. An umbrella holder, consisting of one or more brackets, each of which is formed with a ring, a stem and a screw, one end of the stem being cast around the head of the screw, and the other end formed with a ring, the whole forming one rigid piece, whereby the bracket may be screwed to the wall or other support without the use of other tools, substantially as described. 2nd. An umbrella holder, consisting of a ring bracket composed of a wire ring, a stem of cast metal and a screw, the stem being cast around the head of the screw and around the side of the ring, so that the three parts are rigidly united, and the bracket may be screwed to a suitable support without the aid of other tools, substantially as described. 3rd. The umbrella holder, composed of brackets, each of which is formed with a stem of cast metal, one end of which is cast around the head of a screw, and the other end formed with a ring, the whole

forming one rigid piece, in combination with a drip cup, substantially as described.

No. 25,360. Manufacture of Corsets.
(*Fabrication des Corsets.*)

James Stone and Marshall Gardner, Aurora, Ill., U. S., 16th November, 1886; 5 years.

Claim.—1st. The method of constructing corsets, having body-stiffening strips of bamboo or analogous material, which consists in first forming a composite stiffening web by connecting together a plurality of stiffening strips arranged parallel with each other with spaces between them, then cutting the stiffening web to a length shorter than the height of the corset, then applying the said length or battery between the layers of cloth which form the body of the corset, and therefore securing the battery and the several strips thereof in place by stitching through both layers of the corset, and through the battery between the stiffening strips of the latter, substantially as described. 2nd. The herein-described web of composite stiffening fabric for employment in the bodies of corsets, said fabric comprising two layers of cloth or other flexible material of continuous length, and a plurality of narrow bamboo strips placed parallel with each other between said layers with spaces between said strips, in which spaces the enclosing fabrics are brought into contact with each other and there secured, the said spaces being of such narrow width that single rows of stitching one row in each space will closely confine the strips. 3rd. The herein described web of composite stiffening fabric for employment in the bodies of corsets, the same comprising two layers of cloth or other flexible material of continuous length, and a plurality of narrow parallel bamboo strips placed between said layers and separated from each other by narrow spaces, in which spaces the inclosing layers are brought together and there secured to each other, each of said bamboo strips consisting of two layers or thicknesses of the bamboo or analogous stiffening material. 4th. The herein-described web of composite stiffening fabric for employment in the bodies of corsets, the said web comprising two layers of cloth or other flexible material of continuous length, and a plurality of parallel duplex bamboo strips placed between said layers, and separated from each other by narrow spaces, the inclosing layers being brought together and secured to each other between the strips by adhesive material.

No. 25,361. Process and Apparatus for Drying Hats.
(*Procédé et Appareil pour Sécher les Chapeaux.*)

William H. Kendall, Brooklyn, N. Y., U. S., 16th November, 1886; 5 years.

Claim.—1st. The within-described process for drying hats which consists in placing the hats upon foraminous blocks, and then causing a current of air to pass through the hats and the blocks, substantially as described. 2nd. The combination, with the air pipe A, and with an apparatus for exhausting or forcing air, of a series of hollow block supports D, channels leading from said block supports into the air pipe, and gates or dampers controlling said channels, substantially as described.

No. 25,362. Car Truck. (*Châssis de Char.*)

Hugh Baines, Brooklyn, N. Y., U. S., 16th November, 1886; 5 years

Claim.—1st. In a car-truck, an intermediate transom, constructed and arranged substantially as shown and described. 2nd. In a car-truck, the rollers resting on an intermediate transom, substantially as shown and described. 3rd. In a car-truck, the upper transom resting upon rollers, substantially as shown and described. 4th. In a car-truck, the guard rails C, or their equivalents for connecting the two sides of the truck-frame, and being secured to and around the column R, substantially as and for the purposes set forth. 5th. In a car-truck, the rollers resting on an intermediate transom, and supporting the top transom which rests and travels laterally on the rollers, said top transom being secured from longitudinal movement or movements in the direction of the length of the car by the vertical columns R, as described. 6th. In a car-truck, a top transom adapted to move sideways in the truck, in combination with a truck frame having guard rails extending from one side of the truck-frame to the other and attached thereto, as shown, and described, for the purpose of keeping the truck from spreading. 7th. A truck for cars having the springs set in line or nearly in line with the outside longitudinal sills of the car, the intermediate transom resting upon the spring, the rollers which rests and travels upon the intermediate transom which rests and travels upon the rollers, as described. 8th. The combination, in a truck, substantially as hereinbefore described, of the springs arranged outside of the wheels, and in line or nearly in line with the outside longitudinal sills of the car body, for the purpose of decreasing the roll motion of the car, as set forth and shown. 9th. In a car-truck having the springs arranged parallel to the longitudinal sills of the car body, the intermediate transom secured to the top of the springs, and having rollers arranged upon it and directly over the centre of the springs, in combination with the upper transom H having the bolts F for holding the rollers in position, as described. 10th. In a car-truck, substantially as hereinbefore described, the rod X which extends between the sides of the truck, in combination with the pillars Y, the said parts being arranged so as to trace the sides of the said truck together, substantially as described. 11th. In a car-truck, substantially as shown and described, the arch and tie bars, constructed in the manner shown in Figs. 4 and 5.

No. 25,363. Gas Burner. (*Bec à Gaz.*)

George H. Candler, Toronto, Ont., 16th November, 1886; 5 years

Claim.—1st. A piece of platinum suspended above a gas jet at such a point that when the gas is lighted the flame shall be capable of heating the platinum to a white heat, and that when extinguished any escaping gas must be blown upon the said platinum, substantially as and for the purpose specified. 2nd. A socket A fitted on to

the burner B, and having an arm C connected to an offset from said socket, in combination with a wire D fixed to the arm C and supporting the platinum wire (1) immediately behind the orange arc b of the flame, substantially as and for the purpose specified. 3rd. A socket A fitted upon the burner B, and having an arm C designed to support the platinum wire, as specified, in combination with the asbestos shield E, arranged substantially as and for the purpose specified.

No. 25,364. Granulating and Feeding Device for Brick Machines. (*Mélangeur et Alimentateur de Machine à Briques.*)

Charles L. Emens, Holton, Mich., U. S., 16th November, 1886; 5 years.

Claim.—1st. A granulator and feeder for brick and other stiff clay-working machinery, consisting of the combination of the upwardly-inclined trough, the longitudinal rotative screw situated therein, the hopper of the brick machine, and suitable mechanism for imparting motion to the screw, substantially as shown and described. 2nd. In a granulator and feeder for stiff clay-working machines, the combination, with an upwardly-inclined trough, of a granulating screw consisting of a central shaft carrying a series of screw sections, each one composed of a hub, and a semicircular plate, substantially as and for the purposes shown and described. 3rd. The combination of a trough, a hopper, a series of transverse rods secured to the trough, a granulating screw consisting of a shaft, and a series of hubs placed thereon, each having a semicircular plate, and means as described, for imparting a rotary motion to said screw, as specified and shown. 4th. The combination of the trough, the rotating screw provided with a gear F, and means for actuating the screw consisting of the shaft b carrying pinion G and face-plate H and shaft c carrying paper-friction I, and driving pulley J, said shaft c being journaled in a sliding box, substantially as specified and shown. 5th. The combination of an upwardly-inclined trough having inclined sides, a feed-screw located therein, the hopper of the brick machine located adjacent to the upper end of the trough, and suitable mechanism for revolving the screw, substantially as described.

No. 25,365. Horse Rake. (*Râteau à Cheval.*)

Horace McPherson, Crete, Ill., U. S., 16th November, 1886; 5 years.

Claim.—1st. In a horse hay rake, a triangular frame formed from the axle A, girth G, and beam B, arranged as shown, in combination with the traveling wheels W, W, castor wheel W₂, rake head H having tooth T and hinged to said frame standard box I, standard box L, standard box E, rock arm F, links L and L₁, lever L and the girths, substantially as described, for supporting a driver's seat, as and for the purpose set forth. 2nd. In the horse hay rake shown and described, the frame thereof consisting of the axle A, beam B and girth G arranged to be triangular in form, in combination with the rake head H having the teeth secured thereto, substantially as set forth, and hinged to the oblique side of said frame, traveling wheels W, W supporting the axle A of said frame, and castor W₂ supporting the rear extending end of said frame, in the manner, and for the purpose specified. 3rd. The horse hay rake described, consisting of the combination, with the axle A supported by the traveling wheels W, W, the beam B secured to the rear side of said axle, and arranged obliquely therewith the girth G connecting the outer end of said beam with said axle, the castor wheel W₂ supporting the rear part of said beam and girth, the arms R, R₁ secured to said beam axle and girth, as shown, the rake head H having rake teeth T and hinged to said arms, and the means, substantially as set forth, for raising and lowering said rake teeth from the ground, as and for the purpose specified. 4th. In the horse hay rake shown and described, and in combination with the triangular frame thereof and the rake head, the lever L, links Z, Z₁, standard box I and rock arm F, substantially as and for the purpose set forth. 5th. In the horse hay rake described, in combination with the rake head and triangular frame thereof, the arms R, R₁ secured to said frame by means of standards, substantially as set forth, and hinged to said rake head and adapted to be adjusted to vertically adjust the rake head, in the manner specified.

No. 25,366. Car Ventilator. (*Ventilateur de Char.*)

Thomas Sproule, Toronto, Ont., 16th November, 1886; 5 years.

Claim.—As a means of ventilating a car or cabin, the combination, with the body of said car or cabin, of a draught air-pipe B having within it one or more syphon-pipes C opening into the interior of the said car or cabin, and arranged and operating as described and for the purpose specified.

No. 25,367. Heating Stove. (*Poêle de Chauffage.*)

Matthew Van Wormer, Malden, Mass., U. S., 16th November, 1886; 5 years.

Claim.—1st. In a heating stove, the combination, with the fire chamber base plate, having cold air inlets and top plate having hot air discharge opening, of two or more approximately concentric drums or cylinders in communication with each other, within which, air drawn from the exterior of the stove may circulate while exposed to the radiating influence of the fire, and be discharged in a heated condition, substantially as and for the purpose specified. 2nd. The combination, with the base plate having perforations, of the ash box B, lining D carried thereby, radiating cylinder E, E, having top plate F, drums G and I having communication with each other and with the perforations in base plate and the open top plate H, substantially as and for the purpose set forth.

No. 25,368. Heating Stove. (*Poêle de Chauffage.*)

Matthew Van Wormer, Malden, Mass., U. S., 16th November, 1886; 5 years.

Claim.—1st. A heating stove, having a hot air chamber at its top, to which hot air is continually supplied from flues crossing the fire

chamber, said flues being supplied with air from the exterior of the stove, substantially as shown and described. 2nd. In a heating stove, the combination of a hot air chamber at its top, a hot air space surrounding the fire chamber, and flues or pipes for admitting outside air, heating same and carrying it to the hot air chamber, substantially as shown and described. 3rd. In a heating stove, the combination of a hot air chamber at its top, an air space surrounding the fire chamber and communicating with the hot air chamber, vertical pipes passing through said air space, their lower ends open to receive cool air, and their upper ends communicating with pipes crossing the fire chamber and opening into the air space near its inlet to the hot air chamber, substantially as and for the purpose specified. 4th. In a heating stove, the combination with the fire chamber, the air space surrounding same and having air inlets, of the vertical pipes K, transverse pipes L and hot air chamber I, substantially as and for the purpose set forth. 5th. In combination with the hot air chamber I, and with the flues for introducing outside air, heating it and carrying it to said hot air chamber, the distributing pipes N, as and for the purpose described.

No. 25,369. Heating Stove. (*Poêle de Chauffage.*)

Matthew Van Wormer, Malden, Mass., U.S., 16th November, 1886; 5 years.

Claim.—1st. A stove, having a hot air chamber at its lower end, which is adapted to be supplied with hot air from the radiation of the fire above, and a flue connected with said chamber for carrying hot air around the inner casing of the stove and discharging it at the top, substantially as and for the purpose shown and described. 2nd. A stove, having a hot air chamber at its lower end, a continuous flue or series of flues extending up one of the sides, across the fire-chamber, and thence down the opposite side of the stove to said hot air chamber, substantially as and for the purpose specified. 3rd. A stove, having a chamber near its lower end, into which is admitted outside air, a continuous flue for carrying said air up one side of the stove across the fire chamber and down the other side, a hot air chamber at the bottom, into which said air is introduced, and a flue connected with said chamber and carrying the heated air around the inner casing of the stove and leading it to a discharge opening at the top, all substantially as shown and described. 4th. In a heating stove, the combination of the cold air inlets Q, the cold air chamber H, the continuous flue R, S, T, the hot air chamber K, the flue N and hot air passage P, substantially as and for the purpose set forth. 5th. The combination with the flue N and passages d and T, of the damper g, substantially as and for the purpose described. 6th. The combination with the flue N, passages d and T and damper g, of the damper f, arranged substantially in the manner and for the purpose specified. 7th. The combination in a heating stove, of the damper P with the smoke outlet O, said damper having straight sides and being adapted to only partially close said smoke outlet, for the purpose described. 8th. In a heating stove, the combination with the inner casing, an outer casing, and with the fire chamber and ash-pit of the cold air inlets Q, cold air chamber H, continuous flue R, S, T, hot air chamber K, flue N, connecting pipe d, hot air passage T, open cap G, smoke passage O and dampers f, g, and P, all combined and arranged substantially in the manner and for the purpose set forth.

No. 25,370. Mason's Hawk.

(*Palette de Barbouilleur*)

Robert R. Courson, Newark, N.J., U.S., 16th November, 1886; 5 years.

Claim.—1st. The improved mason's hawk, combining therein a terra-cotta, or similar earthen board and a handle, substantially as and for the purposes set forth. 2nd. The improved mason's hawk, combining therein terra-cotta board, having its pores filled with cellulose, or equivalent matter, and a suitable handle, as set forth. 3rd. The improved mason's hawk, combining therein the earthen board, wire cloth and handle, substantially as and for the purpose set forth. 4th. A mason's hawk, having the body or board thereof composed as a whole, or in part, of terra-cotta, or equivalent plastic material, substantially as set forth. 5th. A mason's hawk, having the body or board of terra-cotta and wire cloth, substantially as and for the purposes set forth. 6th. A mason's hawk, having wire cloth arranged between upper and lower sections of the board thereof, substantially as set forth.

No. 25,371. Fanning Mill. (*Turarc-Cribleur.*)

Charles Jackson, Harrison, Ont., 16th November, 1886; 5 years.

Claim.—1st. The combination, with the lower shoe 6, of the lever 17 fulcrumed thereto, and to cross-bar 18 connecting the sides of the mill rod 15, rock shaft 8, having arms 10, 13, 15, pitman 11 and rod 14 for reciprocating the lower shoe endwise and the upper shoe sidewise, as set forth. 2nd. The series of screens 24, having the cross-bars 25, of the frames at the end, near the fan, bevelled inwardly and upwardly from the outside, for the purpose set forth. 3rd. The series of screens 24, having the cross-bars 25, of the frames rabbeted to form a ridge 25, and foundation for the series, as set forth, for the purpose described. 4th. The series of screws 24, having downwardly extended strip of metal 27, as set forth for the purpose described.

No. 25,372. Switch and Signal Lock.

(*Fermeture d'Aiguillière et de Signal.*)

Isaac May, Brooklyn, N.Y., U.S., 16th November, 1886; 5 years.

Claim.—1st. The combination, with the switch or signal levers and the pivoted handles, of notched lock bars at right angles, or nearly so, to the switch levers, bent levers, and connections between the pivoted handles and notched lock bars, the lock-box, across which the lock-bars slide, and bolts with bevelled ends within the lock-box and between the notched lock-bars, substantially as specified. 2nd. The combination, with the switch or signal levers and the pivoted handles, of notched lock-bars at right angles, or nearly so, to the switch levers, bent levers and connections between the pivoted handles and notched lock-bars, the lock-box across which the lock-

bars slide, and a row of separate bolts with bevelled ends in line with each other, and base-plates to the bolts, extending across beneath the lock-bars, substantially as specified.

No. 25,373. Rubber Pad Cover for Carriage Steps. (*Matelas en Caoutchouc pour Marchepieds de Voitures.*)

John T. Dickey and Elmer H. Rogers, Trenton, N. J., U. S., 17th November, 1886; 5 years.

Claim.—A cover pad for carriage-steps, composed of a plate or pad B, provided on its under side with a continuous under-turned margin d, constituting a pocket adapted to receive and enclose all the edge of the step-plate, except at one point where the step-arm is joined to said plate, whereby said pad will be retained in place without other fastenings, substantially as set forth.

No. 25,374. Spring Bed Bottom.

(*Sommier Elastique.*)

Orion N. Elkins, North Troy, Vt., U. S. (Assignee of Eli H. Loughton, Potton, Que.), 17th November, 1886; 5 years.

Claim.—1st. A spring, consisting of inner and outer conical coils integrally bent from one piece of wire, the wire intersecting radially at the larger end of the coil, and both the ends of the wire terminating at the tapering end of the spring, substantially as set forth. 2nd. The bed bottom frame, consisting of the body section composed of longitudinal rails 1, transverse bars 2 and 3, the head section consisting of longitudinal bars 4 and transverse bars 5, and both sections connected by cross-bars 6, 7, pivoted together, and means for holding the cross-bars in position to support the head section inclinedly, as set forth. 3rd. The combination, with the body section, head section and cross-bars, as set forth, of rod 9, slotted irons 11, slotted iron 12, having a rock 13, rod 10, provided with pawl 14, and bar 15 for adjusting and maintaining head section inclinedly, as set forth. 4th. The tie wires 17, interlocking in pairs, each pair connecting four springs, as set forth.

No. 25,375. Machine for Covering Wire and other Cores. (*Machine à Couvrir le Fil de Fer et autres Noyaux.*)

John C. Belk and George Frazor, Tombstone, T. A., U. S., 17th November, 1886; 5 years.

Claim.—In a wrapping machine, the combination of two disks D and D' carrying spools on their outer faces, and having pinions a, at their inner or adjacent faces, with a driving wheel M between the two disks and gearing with both pinions, substantially as set forth.

No. 25,376. Fire Extinguisher.

(*Extincteur d'Incendie.*)

Henry A. Mansfield and Henry M. Harrington, Bridgeport, Conn., U.S., 17th November, 1886; 5 years.

Claim.—1st. In a fire extinguisher, a generating cylinder having a discharge tube, and an operating shaft having lugs or cross-pieces at its lower end, in combination with a chemical reservoir having slots 8, engaged by said lugs, an opening at its opposite end, and a rest provided with a valve adapted to engage said opening, as described. 2nd. In a fire extinguisher, a chemical reservoir having a slot 8 at one end and an opening at its other end, in combination with a rest, whereby said reservoir is supported, and which is provided with a valve to engage said opening, and an operating shaft having a cross-piece adapted to engage slot 8, whereby the reservoir may be turned to remove the opening from the valve, as described. 3rd. In a fire extinguisher, a rotating chemical reservoir, having an opening 9 at one end, in combination with a vertically movable rest, whereby said reservoir is supported and which is provided with a valve adapted to close said opening, threaded rods 14 which pass through said rest, and nuts upon said rods whereby the valve is forced tightly against the reservoir after the latter has been turned into position, as described. 4th. In a fire extinguisher, rest 10, having lips 11 and valve 12, in combination with a chemical reservoir, having an opening adapted to be closed by said valve, a slot 8 and an operating shaft having a lug or cross-piece adapted to engage said slot, substantially as described. 5th. In a fire extinguisher, the cap having a recess 19, packing, and an operating shaft having a boss, whereby the packing is held in place, and a lug or cross-piece 17, in combination with a rotating chemical reservoir, having an opening 9 and a slot across its top which is engaged by the lug or cross-piece, whereby said reservoir may be turned to operate the device, substantially as described. 6th. The operating shaft, having lever 18 and cross-piece 17, in combination with a rotating chemical reservoir, having an opening 9 and a slot 8, which is engaged by said cross-piece, a rest for supporting the reservoir and a spring 25 which locks the lever in the closed position, as described. 7th. The operating shaft, having cross-piece 17 and the chemical reservoir having slot 8 and opening 9, in combination with a movable rest having a valve adapted to engage said openings, threaded rods adapted to pass through said rest, and nuts engaging the rod whereby the valve is pressed against the opening, as described. 8th. In a fire extinguisher, a chemical reservoir made of reticuous material, and provided with means for engagement as a slot across its top, and with an opening in its bottom near the side, for the purpose set forth, in combination with a valve adapted to close said opening, and an operating device, for example a lever, having a cross-piece to engage the slot, whereby the reservoir may be rotated to discharge its contents, substantially as described. 9th. The generating cylinder rest 10, having valve 12, and a discharge tube having a strainer 24 to prevent precipitated chemicals from entering the tube, in combination with chemical reservoir 7, having slot 8, and operating shaft 16, having cross-piece 17, whereby the reservoir is turned away from the valve, as described. 10th. The operating shaft and lug or cross-piece 17, in combination with a rotating chemical reservoir, having an opening 9 and a slot 8, which is engaged by said lug, a packing 27 in said slot between the lug and the material of the

reservoir and a roset by which the reservoir is supported, substantially as described. 11th. The generating cylinder rest 10, having valve 12 and a discharge tube having a stop cock 22, in combination with chemical reservoir 7, having slots 8 and operating shaft 16 having cross-piece 17, whereby the reservoir is turned away from the valve, substantially as described.

No. 25,377. Method of and Apparatus for Carbureting and Mixing Gas and Air. (*Méthode de Carburation et de Mélange du Gaz et de l'Air, et Appareil pour cet objet.*)

George R. Cottrell, New York, and Ballard S. Dame, Brooklyn, N. Y., U. S., 17th November, 1886; 5 years.

Claim.—1st. The method of producing carburetted gas of the desired candle power for illuminating or heating purposes, which consists in heating the gas, then carbureting it, withdrawing such gas from the carburetor, and mixing with it a suitable proportion of atmospheric air and conducting it to the place of use. 2nd. The method of producing carburetted gas of the desired candle power for illuminating or heating purposes, which consists in heating the gas, then carbureting it by conducting it in a warm or heated state in contact with volatile hydro-carbon, withdrawing from the carburetor a portion of such gas, and mixing with it a definite and measured proportion of atmospheric air to adapt it for use, as described. 3rd. The method of producing carburetted gas of the desired candle power for heating or illuminating purposes, which consists in heating or warming the carbureting chamber, supplying heated gas thereto, and carbureting it with hydro-carbon vapors, withdrawing such carburetted gas and mixing with it a suitable measured proportion of atmospheric air to adapt it for use, as described. 4th. The method of producing carburetted gas of the desired candle power for illuminating or heating purposes, which consists in heating the gas and mingling therewith hydro-carbon vapors, withdrawing from the carburetor a portion of such gas and mixing with it a suitable proportion of atmospheric air, conducting such mixture into the carbureting chamber and mingling therewith heated, enriched gas to adapt it for use, as described. 5th. The method of producing carburetted gas of the desired candle power for illuminating or heating purposes, which consists in heating gas and enriching it with hydro-carbon vapor, then mingling with such enriched gas a mixture of gas and air united in definite and measured proportion, to adapt it for use, as described. 6th. The method of preparing a carburetted mixture of gas and air of the desired candle power for illuminating or heating purposes, which consists in enriching gas with hydro-carbon vapor, forming a mixture of gas and air by uniting them in definite and measured proportions, and then mixing the enriched gas with the mixture of gas and air to form a gas of the desired quality. 7th. The method of preparing a carburetted mixture of gas and air of the desired candle power for illuminating or heating purposes, which consists in vaporizing solid or crystalline hydro-carbons by heat and enriching gas with such vapors, then uniting with such enriched gas a measured proportion of atmospheric air to adapt it for use, as described. 8th. The method of producing carburetted gas of uniform candle power, consisting, first, in heating the gas, second, conveying it to the carbureting chamber and thereby enriching the gas, third, introducing a mixture of oxy-hydro-carbon gas and atmospheric air into the carbureting chamber with the heated and enriched gas, fourth, removing condensable matter from the mixture of enriched carburetted gas and oxy-hydro-carbon gas and air, and, fifth, purifying the mixture for illuminating purposes, substantially as described. 9th. The carbureting chamber, having the water-jacket, in combination with the purifying chamber communicating with such carbureting chamber, substantially as described. 10th. The carbureting chamber having the inclined upper sides, and the water jacket surrounding them, in combination with the purifying chamber communicating with said carbureting chamber, substantially as described. 11th. The combination of the carbureting chamber, the heating coils for supplying heated gas thereto, means for heating the coils, means for mixing gas and air, and the pipe for supplying the mixture of oxy-hydro-carbon gas and air to the carbureting chamber, substantially as described. 12th. The combination of the carbureting chamber, the pipes P for supplying heated gas thereto, the mixing chamber O communicating with the carbureting chamber, and the means for supplying oxy-hydro-carbon gas and atmospheric air to the mixing chamber in suitable proportions, substantially as described. 13th. The combination of the carbureting chamber, the mixing machine communicating therewith and having the pumps K and L, and the mixing chamber communicating with the mixing machine and also communicating with the carbureting chamber for supplying a mixture of gas and air to the latter, substantially as described. 14th. The combination of the carbureting chamber, having the gas gauge and the heating coils, with the pipe R having the burners under the heating coils, and the stop-cock connected to and controlled by the gas gauge, for the purpose set forth and substantially as described. 15th. The combination with a carburetor, a gas meter, a connecting supply pipe leading from the meter to the carburetor, drums or pumps for delivering gas and air in measured proportions, and pipes connecting such measuring drums with the carburetor, whereby carburetted gas and air may be mixed in suitable proportions to form illuminating or heating gas.

No. 25,378. Shingle Packer.

(*Cordule de Bardeau.*)

Isaac M. House, Gravenhurst, and Alfred R. Williams, Toronto, Ont., 16th November, 1886; 5 years.

Claim.—1st. A shingle packer of solid iron having adjustable ends C, D, one of which sides is pivoted so as to swing outwards, substantially as shown and for the purpose specified. 2nd. In a shingle packer, the combination of the upright arms E, F having notches, with the vertical blocks G, F, having corresponding ratchets, both engaging with pinions G, and being actuated by a lever H, which lever is retained by a rack J, all arranged and operating substantially as shown and for the purpose specified.

No. 25,379. Dynamo-Electric Machine.

(*Machine-Dynamo-Electrique.*)

Ernest P. Clark, Ann E. Applegate and James H. Seymour, New York, N. Y., U. S., 17th November, 1886; 5 years.

Claim.—1st. In a dynamo-electric machine, an external and an internal pole-piece, each pole-piece being the segment of a cylinder, and the said pole-pieces being connected by a plate of magnetic material, substantially as described. 2nd. In a dynamo-electric machine, a field-magnet, the axial lines of whose coils are without the cylindrical surface of a cylindrical or ring armature, a second field magnet, the axial lines of whose coils are within the cylindrical surface of a cylindrical or ring armature, and a third field-magnet, the axial lines of whose coils are perpendicular to the cylindrical surface of a cylindrical or ring armature, the first field-magnet having external pole-pieces, and the second and third field-magnets having common internal pole-piece, substantially as and for the purpose described. 3rd. In a dynamo-electric machine, the combination of a shaft provided with a ring armature, internal pole-pieces and magnets connecting them to each other, and two additional field-magnets, one of which has coils whose axial lines are parallel to the said shaft, and is connected to the external pole-pieces, and the other of which has coils whose axial lines are parallel to the said shaft and is connected to the internal pole-pieces, substantially as described. 4th. In a dynamo-electric machine, the combination of a shaft provided with an armature, internal pole-piece, and magnets connecting them to each other, and two additional field-magnets, one of which has coils whose axial lines are parallel to the said shaft, and is connected to the external pole-pieces, and the other of which has coils whose axial lines are parallel to said shaft and is connected to the internal pole-pieces, and the said external and internal pole-pieces being connected by plates of magnetic material, substantially as described. 5th. The combination, with a rotating ring armature, of field-magnets having pole-pieces which are segments of cylinders, two of the said pole-pieces being shaped and located so as to be in close proximity to the outer surface of the said armature, and the other two being shaped and located so as to stand in close proximity to the inner surface of the said armature, the said outer and inner pole-pieces being connected by plates of magnetic material, substantially as described.

No. 25,380. Scale Section Liner. (*Règle.*)

Daniel W. Briggs, Saginaw, Mich., (assignee of Casimir N. Podgorski, Northampton, Mass.), U. S., 17th November, 1886; 5 years.

Claim.—1st. The within-described improved scale section liner consisting of a straight edge ruler provided with teeth to a scale, and a triangle set square or other figure having a straight base provided with one or more teeth corresponding to and engaging with those of the ruler, and adapted to be moved over said ruler to have the intervals of movement of its ruling edges determined by the teeth of the ruler, the two combined and operating, as and for the purpose set forth. 2nd. The notched plate d attached to the triangle or set square, and made adjustable thereon, substantially as described. 3rd. The drawing board C having the rule B attached thereto, and provided with the notched segment or plate b, substantially as described. 4th. The drawing board or other support C having the adjustable ruler B attached thereto, and provided with the notched plate b, substantially as described. 5th. The drawing board C having the rule B applied thereto, and provided with the notched plate b, in combination with a straight edged drawing implement provided with the notched plate d, substantially as described.

No. 25,381. Telegraphing or Telephoning from Stations to Moving Cars. (*Moyens de Télégraphier ou Téléphoner des Stations aux Chars en Mouvement.*)

William Vogel and Otto Wasmansdorff, Chicago, Ill., U. S., 17th November, 1886; 5 years.

Claim.—1st. The combination, with a railroad car, of a spring-supported receiving chamber, such chamber being formed with double walls and provided with an interposed packing, as and for the purpose set forth. 2nd. The combination, with a railroad car, of a receiving chamber which is placed therein and suspended upon springs, and the brackets for keeping the lower end of the chamber from moving about, substantially as described. 3rd. The combination of the railroad car, a suspended receiving chamber placed therein, and suitable electrically-operated mechanisms in the chamber with the connecting wires, a conducting connection which is applied to the under side of the car, a support which extends along the main track and upon which the conducting-connection travels, and a conducting wire placed upon the insulating material, and connected to the support, substantially as specified. 4th. The combination, with a railroad car, of a receiving chamber P, springs Q, cross beam R, springs S, and hangers T, the parts arranged as and for the purpose set forth. 5th. The combination, with a railroad car, of a receiving chamber P formed with double walls, and provided with interposed packings, springs Q, cross beam R, springs S, and hangers T, the parts arranged as and for the purpose set forth.

No. 25,382. Cigar Bunching Machine.

(*Machine à Lier les Cigares.*)

Adolph Lowin, Max Martin, Charles Schutz, and Levy Brothers, (assignees of Nicholas H. Borgfeldt and Adolph C. Schutz,) New York, N. Y., U. S., 17th November, 1886; 5 years.

Claim.—1st. The cylinder B having bottom a and shute C, combined with the rotary disk D having notches b, upper disk E having apertures d and scrapers H, for operation, substantially as herein shown and described. 2nd. The combination of the measuring disk D having the larger notches b with the upper disk E having smaller notches or apertures d, part of each notch b being covered by the disk E, as specified. 3rd. The combination of the cylinder B, and notched disk D on shaft F, with the stirrer H, and mechanism for

revolving such stirrer in direction opposite to the disk D, substantially as specified. 4th. The combination of the cylinder B, and notched disk D on shaft E, with the cone L supported on disk D, and with the stirrer H and mechanism for revolving said stirrer in direction opposite to the cone and disk D, as specified. 5th. The stirrer H, constructed of outwardly and downwardly projecting rods that are secured to a collar A, as described. 6th. The cylinder B having discharge chute C, combined with the reciprocating hopper I and reciprocating plunger L, as specified. 7th. The combination of the cylinder B, rotary notched disk D, stationary scraper H and chute C, with the hopper I having perforated wall A, plunger L and mechanism, substantially as described, for first lowering said hopper, then said plunger, then raising said hopper and then said plunger, as and for the purpose specified. 8th. The binder rest apron M, combined with the sliding frame N having roller U, tilting frame P and spring J, substantially as herein shown and described. 9th. The combination of the apron M, with the frame N having roller U, pivoted frame P having cross-car 12, spring J, and stationary bracket K, substantially as described. 10th. In a bunch machine, the combination of the cylinder B having notched disk D and chute C, with the reciprocating hopper I, reciprocating plunger L, apron M, sliding frame N having roller U and bunch receiver R, substantially as specified. 11th. The apron M made with the fluting A, as and for the purpose described. 12th. The apron M made of segmental form, and combined with the tapering roller U, and with mechanism, substantially as described, for moving said apron and said roller on the rolling board, as specified. 13th. The segmental rolling board L, combined with the sliding frame N, segmental apron M, tapering roller U, and binder lifter P, substantially as and for the purpose described. 14th. The segmental rolling board L, combined with the sliding frame N, segmental apron M, tapering roller U, and binder lifter P, the apron M having the projecting fluting A, substantially as and for the purpose described. 15th. The combination of the bracket O, pivoted at J, with the frame N which is rigidly attached thereto, and with the segmental rolling board L and segmental apron M, and with mechanism for moving said bracket around its pivot, substantially as specified. 16th. The combination of the segmental rolling board L, with the sliding frame N having tapering roller U, apron M, binder lifter P which is pivoted to said frame N, and with the finger G on the stationary frame A, substantially as herein shown and described.

No. 25,383. Lath Bolter. (Scierie à Latte.)

Isaac M. House, Grayenhurst, and Alfred R. Williams, Toronto, Ont., 17th November, 1886; 5 years.

Claim.—1st. The rope or chain feed D, operating the block carriage B, and connected, by means of the connecting rod N and crank-shaft M, with the wedge-block L, which causes the friction roller H to engage with the outer rim of the friction pulley G. 2nd. The wedge-block L, operated on the pivoted arm K, in combination with the lever M, connecting rod N and rope or chain feed D, all arranged and operating as shown and for the purpose specified. 3rd. The wedge-block S operated by the lever S, substantially as shown and for the purpose specified. 4th. The yoke B, in combination with the block-carriage B, substantially as shown and for the purpose specified.

No. 25,384. Device for Stretching and Tuning Strings. (Appareil pour Tendre les Cordes et les Accorder.)

Abraham Feildin and C. H. Hennings, Ithaca, N. Y., U. S., 17th November, 1886; 5 years.

Claim.—1st. In a string-stretching or tuning device, the combination of the pin C, with a frame A provided with a hole or socket e, larger at d, than the said pin to insure contact between the pin and frame at the points e, f, only of the said hole when the string is stretched, substantially as and for the purpose set forth. 2nd. In a string-stretching or tuning device, the combination of the cylindrical pin C, with the frame A having a correspondingly cylindrical hole e, enlarged at d, in order to insure contact at e, f only while under the strain of the string-tension, substantially as and for the purpose set forth. 3rd. In a string-stretching or tuning device, the combination of the pin C with the frame A having a hole e to receive the said pin, the said frame A having a recess a at the upper end and concentric with the said hole, and the said hole being enlarged at d, to insure contact at e, f only while under the strain of the string-tension, substantially as and for the purpose set forth.

No. 25,385. Metal Screw Machine.

(Machine à Vis Métalliques.)

Jacob Stehli and The Hartford Machine Screw Company, Hartford, Conn., U. S., 17th November, 1886; 5 years.

Claim.—1st. The combination of a longitudinally reciprocating carriage, a rotary mandrel supported by said carriage, a quill within said mandrel adapted to clamp the wire and the reducing threading advance-cutting and cutting-off mechanisms, substantially as set forth. 2nd. The combination of a carriage, means for reciprocating the same, a rotary mandrel supported by said carriage, a quill within said mandrel, mechanism for reciprocating said quill independently of the mandrel, a reducing tool, a threading die, an advance-cutter and a cutting-off tool, and mechanism for actuating said tools, substantially as set forth. 3rd. The combination of a longitudinally reciprocating carriage, a rotary mandrel supported by the same, an independently-reciprocating quill within said mandrel, mechanism for rotating and reversing the mandrel, and the reducing threading advance-cutting and cutting-off mechanisms, substantially as set forth. 4th. The combination of a longitudinally-reciprocating carriage, a rotary hollow mandrel supported by said carriage, a wire-guiding quill within said mandrel adapted to reciprocate in said mandrel and independently therefrom, mechanism for turning down, threading, advance-cutting, and cutting-off, the screw and jaws for clamping the wire after screw has been cut off, and a longitudinal

cam-shaft having cams for actuating said mechanisms, substantially as set forth. 5th. combination of the main-shaft L, cam A, fulcrumed lever B having set screw 26, carriage D having a projecting nose 61, and mechanism for vertically adjusting the same, whereby the extent of motion of the carriage is regulated, substantially as set forth. 6th. The combination of the rotary main shaft B having cam A and nose 65, fulcrumed lever C, having a forked upper end, a rotary mandrel D, a sliding sleeve 64 having curved hub and collar 65, an interior quill D3 having a chuck D4 at one end, and a shoulder 65 at the opposite end, and levers 61 fulcrumed to a sleeve of the mandrel, and having interior noses 63 engaging the shoulder 65, so as to move the quill independently of the mandrel, substantially as set forth. 7th. The combination of the longitudinal main-shaft B having cam A, a fulcrumed and spring-actuated stop-lever A, and a reciprocating carriage D having an adjustable stop-device A2 at one side thereof, substantially as set forth. 8th. The combination of the longitudinal main-shaft B, a cam A, with the longitudinally-reciprocating carriage D, a mandrel D, supported by the carriage, a fast pulley p1 and loose pulleys p on said mandrel, a fulcrumed lever p2 having belt-shifting devices at their upper end, and cross-belt engaged by said belt-shifting device, so as to impart a rotary motion to the mandrel and reverse the same at the proper moment, substantially as set forth. 9th. The combination of the main-shaft B having a cam A, a fulcrumed lever A, a movable wire-clamping jaw I, at the upper end of the lever A, and a fixed jaw I supported on an upright standard A7, substantially as set forth. 10th. The combination of the longitudinal main shaft B, cam A, fulcrumed lever A, an upright standard A6, laterally-reciprocating slide-plates B, H, spring E, reducing tool E, and cutting-off tool H supported by said slide-plates, and set-screws E3 and E, substantially as set forth. 11th. The combination of the main-shaft B, adjustable slide-rod G, upright standard A7 having slots G and ways G, fulcrumed and slotted levers G, connecting link G, and a laterally-adjustable advance-cutter G guided in ways G, substantially as set forth. 12th. The combination, with a longitudinally-reciprocating carriage having a mandrel supported on said carriage, an independently reciprocating quill within said mandrel, mechanism for reducing, threading, and cutting off the screw, and a stop-motion connecting the mandrel and quill with the clutch mechanism on the driving shaft, so as to stop the motion of the machine whenever the end of the wire leaves the quill, substantially as set forth. 13th. The combination, with a reciprocating carriage D, a mandrel D supported by said carriage, an interior independently-reciprocating quill D, a drop-pin L passing through slots of the mandrel and quill, a spring actuated lever L fulcrumed to the mandrel and engaging the drop-pin L, a longitudinal rod L3 having arms L2 and L1, a hinged arm L4 having a set screw L2, and a transversely guided and spring-actuated shaft L5 having cross-pin L3 and lug L7, the latter engaging the clutch of the driving shaft, substantially as set forth.

No. 25,386. Thill Coupling. (Armon de Lanière.)

William H. Vail, Cornwall-on-the-Hudson, N. Y., and Arthur F. Whitin, Whitinsville, Mass., U. S., 19th November, 1886; 15 years.

Claim.—1st. In a thill coupling, the combination of a vertically acting clamping bolt passing through the axle clip, and provided with a rearwardly extending clamping flange or jaw adapted to close down upon the cross-bolt of the thill iron when it is in the axle clip, substantially as and for the purposes set forth. 2nd. In a thill coupling, a clamping bolt located in the axle clip and having a rearwardly extending flange or jaw adapted and arranged to hold the cross-bolt of the thill iron in place, said clamping bolt being provided with a spring washer against which the nut thereon bears, substantially as and for the purposes described. 3rd. In a thill coupling, the combination, with the cross-bolt of the thill iron, of a clamping bolt passing through the axle clip, a recess in said clip containing a spring washer, against which a shouldered nut presses, said nut being held against displacement by the clip bar passing beneath the axle, substantially as shown and described. 4th. A thill coupling consisting of coupling iron B, bolt H provided with a rubber cushion I, clamping bolt J, spring washer K, shouldered nut L, clip D and clip bar F, the whole combined and arranged substantially as shown and described. 5th. The combination, in a thill coupling, of a clip bar passing beneath the axle provided with an apertured end, extending forwardly and engaging with, and supporting the nut of a clamping bolt, so that the clip bar will hold the nut in place upon unscrewing the same and cause the projection of the clamping bolt, substantially as and for the purposes set forth. 6th. The combination, in a thill coupling, of a vertically acting clamping bolt passing through the axle clip, and provided with a clamping flange or jaw adapted to close down upon a cushion for the bolt of the thill iron, and a cushion for said bolt resting in a recess formed in the axle clip, substantially as and for the purposes set forth.

No. 25,387. Fuel Support for Stoves and Furnaces. (Grille de Poêles et de Calorifères.)

Emilo R. Weston, Elijah R. Jacques, Charles Schweizer, Bangor, Me., Charles Schweizer, Boston, John A. Driscoll, Everett, and John A. Driscoll, Maplewood, Mass., U. S., 19th November, 1886; 5 years.

Claim.—1st. In a stove, furnace, or fire-box having a downward draft, the fuel supports B formed with the longitudinal flues c and apertures i, and with or without the flanges g, p, substantially as described. 2nd. In a stove, furnace, or fire-box having a downward draft, the hollow bricks or diaphragms C formed with the longitudinal flues c, with or without the flanges g, p, substantially as described. 3rd. In a stove, furnace, or fire box having a downward draft, the combination of the fire-box E having back a, door e with register, fuel supports B placed between the fire box and combustion chamber p, p and having the flues c, apertures i, and flanges g, p, register b, combustion spaces h and combustion chamber p, p, substantially as described. 4th. In a stove, furnace, or fire-box having a downward draft, the combination of the fire-box E, door e, fuel supports B placed between the fire-box and combustion chamber p, p, and having

the fines *e*, apertures *i* and flanges *o*, *o'*, combustion spaces *h*, combustion chamber *p*, *p*, hollow bricks or diaphragms *C* having flues *e*, and flanges *o*, *o'*, air passage *D* communicating with the fines *e* and register *b*, substantially as described.

No. 25,388. Hot Air Furnace.

(*Calorifère à Air.*)

Robert A. Chesebrough, New York, N.Y., U.S., 10th November, 1886; 5 years.

Claim.—1st. In a hot-air furnace, the combination, with an air-heating vessel and pipes for supplying cold-air thereto, and delivering heated air therefrom, the vessel having internal deflectors for causing the air to pass in contact with its interior surface in order to reach the hot-air pipes of a fire-place, whereby heat is applied to the exterior of the vessel for heating the air contained therein, substantially as herein described. 2nd. In a hot-air furnace, the combination, with a heating chamber and a fire-place, communicating therewith, of an air-heating vessel depending within the heating chamber and closed by a cover joined thereto outside the heating chamber, and pipes for supplying cold air to the vessel and delivering heated air therefrom, substantially as and for the purpose herein described. 3rd. In a hot-air furnace, the combination, with an air-heating vessel composed of double shells forming between them a space containing a lead or other heat-conducting fitting, and pipes for supplying cold air to the vessel and for the delivery of heated air therefrom, of a fire-place whereby heat may be applied to the outer shell to be transmitted through said shells and interposed heat-conducting filling for heating the air contained in the vessel, substantially as and for the purpose herein described. 4th. In a hot-air furnace, the combination, of the heating chamber *B*, an air-heating vessel *A*, or *A'*, arranged therein, an outlet-pipe for admitting cold air to the interior of the said vessel, the hot-air escape pipe *D*, and a furnace at the side of the heating chamber and communicating therewith, all substantially as herein described.

No. 25,389. Steam Cooker. (*Cuisinière à Vapeur.*)

Brock Cameron, Guelph, Ont., 20th November, 1886; 5 years.

Claim.—A steam cooker having steamer case *A*, water indicator *G*, pot *B*, steamers *C* and *C*, pudding pans *D* and *D*, all formed, arranged and combined substantially as described.

No. 25,390. Mechanism for Operating the Head Blocks of Saw Mill Carriages. (*Mécanisme pour Actionner les Poupées des Chariots de Scieries.*)

Frank J. Gleason, Van Wert, Ohio, U. S., 20th November, 1886; 5 years.

Claim.—1st. The combination, with the saw-arbor and the head-blocks, of connections between said saw-arbor and head-blocks, for automatically advancing and returning the latter, substantially as described. 2nd. The combination, with the saw-arbor and head-blocks, of a shaft deriving motion from said saw-arbor, and connections between said shaft and head-blocks, whereby the latter are automatically advanced and retracted at the will of the operator, as set forth. 3rd. The combination, with the saw-arbor and head-blocks, of a shaft deriving motion from said saw-arbor, a shaft journaled beneath the carriage parallel with the saw-arbor, connections between said shaft and head-blocks, and means for reversing the motion of said shaft, substantially as and for the purpose specified. 4th. The combination, with the saw-arbor and head-blocks, of the shaft *N* deriving motion from said saw-arbor, the shaft *K* journaled as described, parallel with said saw-arbor, connections, substantially as described, between said shaft *K* and head-blocks, the adjustable sleeve *O* on said shaft *N*, and means for operating said sleeve, substantially as and for the purpose specified. 5th. The combination, with a saw-carriage, head blocks and saw-arbor, of a friction-wheel on said carriage, the shaft *K* deriving motion from the said arbor, and carrying the friction-wheel *K*, and means for raising the outer end of said shaft, substantially as described. 6th. The combination, with the saw-arbor provided with the worm *h*, and the saw-carriage provided with head-blocks, of the shaft *N* arranged substantially at right angles to said arbor, and provided with worm gear *n*, the shaft *K* parallel with the saw-arbor, means for revolving said shaft from the shaft *N* in either direction at the will of the operator, and connections, substantially as described, between the shaft *K* and the head-blocks, substantially as set forth. 7th. The combination, with the saw-arbor provided with worm *h*, the shaft *N* arranged substantially at right angles thereto, and provided with worm-gear *n*, the shaft *K* parallel with the saw-arbor, and carrying friction-wheel *K*, of the sleeve *O* on said shaft *N*, levers *P*, *P'* for operating said sleeve, friction-wheel *G* on the saw-carriage, and connections between said friction wheel and the head-blocks, as set forth.

No. 25,391. Safety Joint for Steam Boilers.

(*Joint de Sécurité pour Chaudières à Vapeur.*)

Emile Brouillet, Paris, France, 20th November, 1886; 5 years.

Claim.—1st. The use of a plate or membrane (shown in the accompanying drawing by the letter *G*) one of the surfaces of which is in contact with the steam of the generator, and whose dimensions (thickness and surface area) are previously determined so as to yield by bending, should the pressure of the steam in the generator exceed a certain predetermined degree, substantially as described. 2nd. The use of a piece *H* of any suitable form provided with one or several teeth in the shape of scissor-blades, having for object to burst the plate or membrane at the moment when the latter yields and bonds under the influence of a pressure above that required for the generator, substantially as described. 3rd. The use of a piece *I* forming a piston and which pushed by the plate *G* at the time when the latter commences to bend under the influence of too great a steam pressure in the generator serves to give a warning to the person in charge either by simply breaking the glass pane *K* or by actuating in its

forward motion, any suitable warning apparatus, substantially as and for the purpose hereinbefore set forth.

No. 25,392. Method of Manufacturing Shovels, Spades and Scoops. (*Mode de Fabrication des Pelles, Bêches et Ecoopes.*)

Henry M. Myers, Beaver Falls, Penn., U. S., 20th November, 1886; 5 years.

Claim.—1st. The method of making blanks for the manufacture of shovels, spades, or scoops which consists in heating a billet or bar of iron or steel, rolling it into the form shown and described, and cutting blanks therefrom, in the manner substantially as set forth. 2nd. The method of making blanks for shovels to the shearing point which consists in heating a billet, or bar of iron or steel, rolling it into the form shown and described, cutting blanks therefrom, splitting the arm *A* of the blank, reducing the blank in breaking down and finishing rolls, and finally pointing the same, substantially as described. 3rd. The method of making shovels, spades, or scoops, which consists in heating a billet, or bar of iron or steel, rolling it into the form shown and described, cutting blanks therefrom, splitting the arm *A* of the blank, reducing the blank in breaking down and finishing rolls, pointing the same, shearing the edges and finally polishing the shovel and finishing it with a wooden handle, substantially as described.

No. 25,393. Extension Fire Ladder.

(*Echelle à Incendie à Rallonge*)

John P. Craig and Thomas F. Strachan, jr., Buffalo, N.Y., U.S., 20th November, 1886; 5 years.

Claim.—1st. The devices for raising and lowering the main ladder consisting of the two curved screw rods *d*, *d*, attached to the ladder, as described, the cog-wheels *c*, *c*, in frame *D*, having screw threads in the central opening, with the screw-rods *d* working therein, said cog-wheels meshing into a larger and central cog-wheel *a* fastened as the operating shaft *b*, all substantially as hereinbefore described. 2nd. In combination, with the main ladder of an extension fire ladder the lines of hose *A* permanently fastened to the underside, or sides of the ladder, the lower ends of said hose having couplings *h*, and the upper ends, couplings *h'*, and a pipe *i*, or pipes *i*, *i*, all substantially as and for the purpose specified. 3rd. In combination, with the main ladder *A* and permanently-attached hose *A*, the couplings *h*, and supplementary pipes *i*, *i* coupled thereto and standing out at right angles thereto, so that when the ladder is raised these pipes will always be ready for use, all arranged and operating substantially as and for the purpose specified. 4th. In combination with the main ladder *A* having grooves *n*, *n*, the extension drop-ladder *E* with the ends of the transverse base-rod *e* sitting in said grooves and raised and lowered by the cords *f*, *f*, and the outer end dropped to any angle by chains *l*, all substantially as specified.

No. 25,394. System of and Apparatus for Steam Heating of Buildings, etc.

(*Système et Appareil de Chauffage à Vapeur des Bâtimens, etc.*)

Milton Foreman, Philadelphia, Per . U.S , 20th November, 1886; 5 years.

Claim.—1st. The mode herein described of heating by steam, said mode consisting in first generating steam under low pressure, then raising the temperature of the steam without increasing the pressure, and then circulating the low pressure high temperature steam through the radiators, as set forth. 2nd. The mode, herein described, of heating by steam, said mode consisting in first generating steam under low pressure, then raising the temperature of the steam without increasing the pressure, then passing the low pressure high temperature steam to the radiators, and conveying the water of condensation from said radiators to the super heater, as set forth. 3rd. The combination of a steam generator and a steam distributing pipe *d*, with a super-heater communicating with the said pipe, and with the generator and a return pipe *f* communicating with the generator, as set forth. 4th. The combination of a steam generator and a steam distributing pipe *d*, with a super-heater communicating with the said pipe and with the generator, and a return pipe *f* communicating with both super-heater and generator, as specified. 5th. The combination of the tubular lower portion of the generator, with the super-heater located within the limits of the generator, above said tubular lower portion of the tube, whereby the products of combustion are caused to pass through the latter before reaching the super-heater, all substantially as specified. 6th. The combination of the combustion chamber and its fire-place, the super-heater and the generator, comprising a lower tubular portion extending across the combustion chamber, and an upper portion composed of tubes located at opposite sides of the combustion chamber, so as to form a space for the reception of the super-heater, all substantially as specified. 7th. The combination of a super-heater, with a generator comprising upper, lower and intermediate transverse pipes, vertical pipes connecting the lower and intermediate pipes from end to end of the same, and end pipes only connecting the intermediate and upper transverse pipes, thereby forming a space in which the super-heater is contained, all substantially as specified. 8th. The combination of the upper and lower manifolds of the super-heater with the connecting coils, the steam drum, and the circulating pipes, as set forth.

No. 25,395. Broadcast Seeding Machine.

(*Semoir à la Volée.*)

Thomas J. McBride, Winnipeg, Man., 20th November, 1886; 5 years.

Claim.—1st. The combination of the cup or measuring wheel or wheels *B*, *B*, when placed on a horizontal shaft or bearing and used with the distributing fan *C*, *B*. The combination, with the cup or measuring wheel or wheels *B*, *B*, and the distributing fan *C*, of the disc *F* connected with the cup wheel or wheels by means of a tube or ducts *d*, *d*.

No. 25,396. Extension Device for Fence Machines. (*Appareil Dévideur pour Machines à Clôtures.*)

Micajah C. Henley, Richmond, Ind., U. S., 20th November, 1886; 5 years.

Claim.—1st. The herein described tension device for use in fence-making, consisting of a frame, a series of spools or bobbins journaled in said frame, springs or plates bearing upon said spools or bobbins journaled in said frame, springs or plates bearing upon said spools or bobbins, adjusting screws or bolts for said springs or plates, wires or bands wound upon the spools, and clamps carried by said bands and adapted to clamp or hold the fence wires, as described. 2nd. The herein described tension device, consisting of frame A, B, spools D provided each with a disk *h* and adapted to receive a winch E, tension plates F bearing upon the disks, bolts or screws for regulating the pressure of the plates upon said disks, bands T wound upon the spool, D, blocks J attached to said bands, and clamps K carried by said blocks, all substantially as described and shown. 3rd. A tension apparatus for use in fence making, consisting of a frame provided with a series of independent tension devices, each provided with a clamp for attachment to the double fence wires, said clamps being adapted for attachment to and detachment from the wires at any point in the length of said wires at will, as described. 4th. The combination of frame sled or drag B, frame A provided with spools D and hinged to sled B, braces C pivoted to sled B, and bolts or fastenings detachably connecting the braces with the frame A, as described. 5th. In a tension device for use in fence making, the combination of a supporting frame, a spool or bobbin journaled in said frame and provided with a winch, a plate or spring bearing upon the spool, a screw or bolt for controlling the pressure of said plate or spring, a band wound upon the spool and a clamp carried by the free end of the band, as described. 6th. A tension apparatus for use in fence making, consisting of a frame, a series of spools or bobbins journaled in said frame, a brake apparatus to each bobbin, a band wound upon each bobbin, and a clamp carried by the free end of each band and adapted to clamp or hold a double strand, substantially as and for the purpose explained. 7th. The herein described clamp, consisting of the block J, and eccentrics K, K pivoted to said block J, substantially as shown and described. 8th. A clamp for use in weaving wire and picket fencing, consisting of a body provided with two bearing faces and two independent eccentrics, each adapted to press and hold a single strand of wire against one of the bearing faces, as shown and described.

No. 25,397. Shaft Coupling.

(*Armon de Lamonière.*)

Thomas Leaman, Erie, Penn., U. S., 20th November, 1886; 5 years.

Claim.—1st. In a shaft-coupling, the combination of flanges B, B, on the shaft sections, flanges C, C bolted to said flanges B, B, and oppositely coiled springs U, U, one within the other, as shown and attached to said flanges C, C, so as to resist both longitudinal and torsional strains, substantially as set forth. 2nd. In a shaft-coupling, the combination of oppositely coiled springs D, D, one within the other, and having their ends bent to lie parallel with their axes and screw-threaded to receive nuts thereon, and flanges C, C, having sunken seats *c* and perforations *c* for receiving the ends of said springs, substantially as and for the purpose set forth.

No. 25,398. Hay Elevator. (*Monte-Foin.*)

Benjamin Oborn, Marion, Ohio, U. S., 20th November, 1886; 5 years.

Claim.—1st. In a hay elevator, the combination, with the carriage, of a pair of sheaves or pulleys journaled therein and adapted to receive the hoisting rope leading in either of two opposite directions, and thereby operate the elevator in either of said directions without changing any part of the carriage or its attachments, substantially as set forth. 2nd. In a hay elevator, in which a pair of sheaves or pulleys are journaled in the carriage are adapted to receive the operating rope from opposite directions, and thereby move the carriage in the direction from which it leads, the combination with the gravity-latch and the funnel shaped guide adapted to conduct the loop or the movable block into engagement with the gravity-latch, of a pair of bent locking levers adapted to engage the stop on the track, and an arm on the gravity latch for the purpose, substantially as set forth. 3rd. In a hay elevator, a carriage frame cast in one piece, substantially as set forth. 4th. In a hay elevator, the combination, with the carriage provided with the pair of sheaves or pulleys for changing the direction of the carriage, and a movable block provided with a looped strap and a cross-bar guide, of the gravity hook adapted to engage the loop, substantially as stated, and the pair of locking-levers adapted to engage the opposite sides of the stop and the arm on the gravity-latch, substantially as set forth.

No. 25,399. Mechanical Kneading Trough.

(*Pâtin Mécanique.*)

Joseph G. Tourangeau, Quebec, Que., 23th November, 1886; 5 years.

Réclame.—1o. La combinaison du carré C, avec les couteaux E et E', pour les fins et tel que décrit. 2o Les couteaux E et E', adaptés à la largeur de l'ouverture des parties O et des petites ouvertures Q, pour les fins et tel que décrit.

No. 25,400. Wrench. (*Clé à Ecrou*)

Friedrich Kruegermann and Thomas P. Hoban, Scranton, Penn., U. S., 22nd November, 1886; 5 years.

Claim.—In a wrench, the fixed jaw having the rigid walls which inclose the sliding jaw, said walls provided with the T-shaped grooves and perforated to receive a pin on the end of the link, in combination with a sliding jaw which has correspondingly T-shaped tongues to fit into the T-shaped grooves in the wall of the rigid jaw, the links having the nipples cast integral therewith and pivotally

connecting the sliding jaw and handle together, the pivoted handle having therein a hole for the reception of a nipple on the link, and the supplemental removable strengthening strow or bolt *k*; and the thirble *k*, all constructed and combined to operate substantially as set forth.

No. 25,401 Steam Plough. (*Charrue à Vapeur*)

William Lay and David M. Yocum, Omaha, Texas, U. S., 22nd November, 1886; 5 years.

Claim.—1st. A steam plough, provided with shovels mounted to revolve around a shaft, and with disks mounted to revolve eccentrically to the part on which the shovels turn, the said disks being provided with devices for carrying the shovels around, substantially as herein shown and described. 2nd. A steam plough, constructed with a crank shaft, shovels mounted to revolve on the said crank-shaft, disks mounted to revolve eccentrically to the crank, and rods uniting the disks between which rods the shovels project, substantially as herein shown and described. 3rd. In a steam plough, the combination, with a crank-shaft J, of the disks T mounted to revolve eccentrically to the crank-rods uniting the disks, rods mounted to turn on the crank, and of shovels on said rods, which shovels are passed between the rods uniting the disks, substantially as herein shown and described. 4th. In a steam plough, the combination, with a steam engine, a crank-shaft, shovels mounted to revolve on the crank of the shaft, disks mounted to revolve eccentrically to the crank part, rods uniting the disks, between which rods the shovels pass, and of devices for raising or lowering the crank part of the shaft, substantially as herein shown and described. 5th. In a steam plough, the combination, with a frame, of a crank-shaft, shovels mounted to revolve on the crank part of the shaft, disks mounted eccentrically to the crank-rods uniting the disks between which rods the shovels pass, springs secured rigidly on the ends of the crank-shaft, and devices for raising and lowering the ends of the springs, substantially as herein shown and described. 6th. In a steam plough, the combination, with the frame A, of the crank-shaft J, K, shovels mounted to revolve on the crank part, disks mounted to revolve essentially to the crank part, rods uniting the disks between which rods the said shovels pass, sprocket-wheels connected with the disk, an engine, sprocket-wheels operated by the same, and driving-chains passed over the sprocket-wheels and propelling the machine by means of the shovels and disks, substantially as herein shown and described. 7th. In a steam plough, the combination, with the frame A, of the crank-shaft J, K, the shovels Q mounted to revolve on the crank part of said shaft, disks for revolving said shovels, means for revolving the disks, the spring U on the ends of the crank-shaft, chains connected with the ends of said springs, sprocket-wheels over which said chains are passed, and devices for revolving said sprocket-wheels, substantially as herein shown and described. 8th. In a steam plough, the combination, with the frame A, of a crank-shaft, shovels mounted to revolve on the same, devices for revolving the shovels, springs on the ends of the crank-shaft, the curved frames *h* on the sides of the frame A, the shaft *u* on the said frame, sprocket-wheels on the ends of the said shafts, chains passed over the said sprocket-wheels and connected with the ends of the springs on the ends of the crank-shaft, a worm wheel on the shaft *u*, the shaft *h* and the worm *g* on the same, substantially as herein shown and described.

No. 25,402. Grate, (*Grille.*)

James Lanning (assignee of Samuel W. Alston), Philadelphia, Penn., U. S., 22nd November, 1886; 5 years.

Claim.—1st. A grate, having bars, substantially as described, whereby they move with the frame and rock therein, substantially as described. 2nd. A grate, having a frame and bars mounted thereon, substantially as described, whereby when the frame is moved rocking motion is imparted to the bars, as stated. 3rd. A frame, having grate bars rotatably mounted thereon, arms attached to said bars, a connecting piece pivoted to said arms, a bed plate and a deflecting piece mounted on said bed plate, engaging one of said arms, substantially as described, whereby when the frame is moved the bars are carried with it and rotated or rocked thereon, as stated. 4th. A rotary frame and rocking bars thereon, in combination with a rotary bar to which said frame is pivoted, substantially as described, whereby the frame may be moved and the bars rocked thereon, and the frame and bars may be overturned, as stated. 5th. A grate, having a rotary rocking frame, grate bars rotatably mounted on said frame, a slotted bar to which the frame is pivoted, a bed plate sustaining said slotted bar and arms connected with the grate bars and with each other, one of said arms passing through said slotted bar and being deflected, thereby causing the rocking of the grate bars when the frame is rotated or moved, substantially as described. 6th. A rotatable frame carrying rocking bars, and formed with a bottom bar D, which is provided with a pivot D', and a slot H, the bar C receiving said pivot and having a slot J, a bed plate A with hangers B supporting said bar C, arms F, F' attached to the grate bars and connected by a pivoted arm G, one of said arms F, F' passing through the slot J as a lateral deflector, substantially as described. 7th. A rotatable frame, having rocking grate bars thereon, a rotatable bar mounted on a bed plate supporting said frame, and a catch or lever for preventing dumping or overturning of the frame, said parts being combined and operating substantially as described. 8th. In combination with a central supporting bar, a frame pivotally mounted thereon, and having a lateral extension forming a handle, oscillating bars mounted on said frame and provided with arms and links connecting said arms, one or more of the arms of the oscillating bars engaging the supporting bar whereby the said bars may be operated by the lateral movements of the frame, substantially as described. 9th. In a grate, a frame with rocking bars mounted thereon and provided with a pivot at the bottom thereof, in combination with a bed plate, a bar furnishing a bearing for said pivot and sustained on said bed plate, and devices connecting said rocking bars, consisting of arms attached to said rocking bars and links connected to said arms, one of said arms being in engagement with the said pivot-bearing bar, substantially as and for the purpose set forth. 10th. The bed plate A with hangers B and guide L, in combination with the bar C having

slot J, the frame D, with pivot D₁ having bearing in the bar C, the bars E journalled in the frame D, the arms F, F₁ connected by the arms G, said arm F passing through the slot J of said bar C, and the rod K attached to the frame D, all substantially as and for the purpose set forth.

No. 25,403. Electrolyte for Primary Electric Batteries (*Electrolyte pour Batteries Electriques Primaires.*)

James Whittall, (assignee of Henry Weymorsch), London, Eng., 22nd November, 1886; 5 years.

Claim.—1st. An electric battery solution or electrolyte consisting of or containing permanganate of potash, sulphate of potash, bichromate of soda, sulphuric acid and sulphate of magnesia (or chromic acid) dissolved in water, substantially as hereinbefore described. 2nd. An electric-battery solution or electrolyte consisting of or containing the ingredients, as hereinbefore described and claimed, dissolved in water, and in the proportions hereinbefore described. 3rd. An electric-battery solution or electrolyte consisting of the ingredients, as hereinbefore described and claimed, prepared in the manner hereinbefore described. 4th. For an electric-battery solution or electrolyte, the product consisting of or containing sulphate of potash, bichromate of soda, sulphuric acid and chromic acid, for subsequent dissolving in a solution of permanganate of potash, for use substantially as hereinbefore described.

No. 25,404. Permutation Lock.

(*Serrure à Combinaison.*)

Charles A. Begg, Jasper S. Coxe, Tremont, F. D. Booth, Eden W. Booth and Milton Booth, Rice Lake, Wis., U.S., 25th November, 1886; 5 years.

Claim.—1st. The combination, with the notch tumblers and detent lever, of the horizontal slide F, vertical slides G and H having arms g and h, cam lever J and bolt L, substantially as set forth and described. 2nd. The combination, with vertical slide H provided with arm h, of the cam lever K, with spindle n₁ fastened thereto, and provided with a knob and the bolt L, substantially as set forth for the purpose specified. 3rd. In combination with slide F and detent lever c, the vertical slides G, H provided with arms g, h, fast lever J provided with pin p, loose lever K provided with spindle n₁, and bolt L adapted to be moved by either of lever J, K, substantially as shown and described.

No. 25,405. Tank for Storing Turpentine, Naptha, etc. (*Réservoir pour Emmagasinier la Térébentine, le Naphte, etc.*)

Stephen Webster, York, Ont., 25th November, 1886; 5 years.

Claim.—The tank A situated within the water-tank or receiver B, and being provided with a feed-pipe a and an overflow b communicating with an overflow cistern C and outlet c, the said tanks being arranged and operated substantially as shown and for the purpose specified.

No. 25,406. Grain Scouring Machine.

(*Machine à Nettoyer les Grains.*)

George A. Dawson, Cardington, Ohio, U. S., 25th November, 1886; 5 years.

Claim.—1st. An improved riddle-supporting device for a grain-scourer, comprising a standard secured in a vertical position to the framework of the apparatus, a grooved guiding-shoe adjustably secured to the standard, said guiding-shoe engaging a projection or slide upon the side of the riddle-frame, substantially as and for the purpose described. 2nd. An improved device for supporting, adjusting and guiding the riddle of a grain-scourer, comprising the vertical supporting standard D having the elongated slot D₁ in its upper end, the guiding-shoe C having the longitudinal groove E therein, the central connecting bolt C₁ extending through the guiding-shoe, and the slot D₁ in the standard D, and the thumb-nut C₂ engaging the said bolt, and holding the guiding-shoe in the desired position upon said standard, the said shoe C engaging a slide or projection A upon the side of the riddle-frame, all constructed and arranged substantially as shown and described. 3rd. In a grain-scourer, the combination, with the riddle E having slides A secured to its sides, as described, of the grooved guiding-shoe engaging said slides and the perforated standards having centrally-projecting bolts at C₁ or equivalent, extending through elongated slots D₁ formed in vertical standards D secured at their lower ends by bolts to the top beams of the framework of the apparatus, said bolts C₁ being engaged at their ends by thumb-nuts C₂ which hold the guiding-shoe in adjusting position with relation to the standards D, and riddle-actuating mechanism, substantially as shown and described. 4th. An improved riddle-actuating mechanism for a grain-scouring apparatus, consisting of the U-shaped connecting rod H pivoted at its forward ends to the riddle-frame as described, the lever F pivoted at or near its centre to the frame of the scouring apparatus, and to which the connecting rod H is pivoted near its upper end, as shown in figure 1 sheet 1, and the cam-faced collars I removably secured to the main shaft D and between which collars the lower end of the lever F is extended, the adjacent cam-faces of said collars during the revolution of the shaft oscillating or vibrating the lever F upon its axis and through the rod H reciprocating the riddle, substantially as described. 5th. In a riddle-actuating mechanism, the combination with the lever F, and the main shaft D, of the two collars I having adjacent cam-like faces and provided therethrough by means of which they are adjustably secured to the shaft D, all constructed and arranged substantially as shown and described. 6th. In a riddle-actuating mechanism for a grain scouring apparatus, the combination, with the U-shaped connecting rod H pivoted at its forward ends to the riddle-frame as described, and the pivoted lever F having the elongated slot J₁ formed through it near its upper end, of the journal box J in which the rear end of the connecting rod is held as shown, said journal box being

adjustably and removably secured to the upper end of said lever by means of the bolts J₂ extending through the slots J₁ and the set-nuts J₃ which bear against the rear face of the lever F, and hold the journal box in its adjusted position, substantially as shown and described.

No. 25,407. Lamp Chimney Fastening Device or Clutch. (*Griffe de Cheminée de Lampe.*)

Joseph S. Foster, Salem, Mass., U. S., 25th November, 1886; 5 years.

Claim.—The combination, with a lamp-chimney, of spring fastening devices secured to the base thereof, and provided at their lower ends below said base with hooks, and having at their upper ends arms which when forced inward release said hooks, substantially as set forth.

No. 25,408. Horseshoe Machine.

(*Machine à Fers à Cheval.*)

John D. Billings, David Muller and Frank Fuller, New York, N. Y., U.S., 25th November, 1886; 5 years.

Claim.—1st. In a machine for making horseshoes, in combination, a horizontal folding or bonding device, a cutter for forming the ends of the blanks, and separating them from the bar adjustable to and from the folding device, and a pair of feeding and blank-forming rollers and adjustable bearing standards, whereby horseshoes of any shape or size may be made at one operation, substantially as set forth. 2nd. In a machine for making horseshoes, in combination, a pair of feeding and forming rollers, their bearing standards, a driving shaft provided with a coupling in line with one of the rollers, sliding bearing standards for said shaft, and connected gearing and screws for moving all the standards simultaneously, substantially as set forth. 3rd. In a machine for making horseshoes, in combination, two main shafts placed at right angles to each other, driving shaft connected thereto by means of gear wheels, a pair of rollers intermittently driven from one of the main shafts by means of a crank connecting rod and crank arm, and a cutter also operated from this main shaft by means of a cam thereon, and a folding or bonding device operating at right angles to the direction of movement of the bar fed by the rollers and actuated by means of a mutilated gear on the second main shaft, substantially in the manner set forth. 4th. In a machine for making horseshoes, in combination, a pair of feeding and blank forming rollers arranged to feed the blank bar horizontally, a vertically arranged cutter for separating the blanks and forming their ends, and a folding plunger and folders arranged to operate horizontally at right angles to the direction of motion of the feed rollers, substantially as set forth. 5th. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, standards provided with sliding with sliding boxes for the same, a shaft having an open coupling in line with the lower roller, standards and sliding boxes for said shaft, and screws and gearing for raising or lowering the rollers and driving shafts simultaneously, substantially as set forth. 6th. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, a driving shaft in line with the lower roller and coupled thereto, horizontally sliding standards provided with vertically sliding boxes, adjusting screws and gears connecting all of the standards together, whereby they may be simultaneously horizontally adjusted, and adjusting screws and gears connecting the lower sliding boxes, whereby the shaft and rollers may be simultaneously vertically adjusted, substantially as set forth. 7th. In a machine for making horseshoes, in combination, a pair of feeding and blank-forming rollers, a driving shaft in line with the lower roller and coupled thereto, horizontally sliding standards provided with vertically sliding boxes, adjusting screws and gears connecting all of the standards together, whereby they may be simultaneously horizontally adjusted, and adjusting screws and gear connecting the lower sliding boxes, whereby the shaft and rollers may be simultaneously vertically adjusted, a ratchet wheel secured to the shaft, a pawl arm, a rotating crank and adjustable connecting-rod connecting the end of the pawl arm to the rotating crank, substantially as set forth. 8th. In a machine for making horseshoes, a folding device consisting of a horizontally moving former, a pair of folding rollers, a pair of pivoted folders behind the rollers, a horizontal table and trap door formed therein through which the formed shoes are discharged, and a stripping device for forcing the formed shoes off the former, substantially as set forth. 9th. In a machine for making horseshoes, in combination, the rollers f, f₁, sliding boxes f₂, f₃, coupling shaft g, boxes g₁, g₂, screws f₄, f₅, g₃, g₄, miter wheels f₆, f₇, g₅, g₆, the standards a₁, a₂, a₃, a₄, a₅, and shaft g₆, provided with miter wheels g₇, g₈, substantially as set forth. 10th. In combination, the bed a, the standards a₁, a₂, a₃, carrying the rollers f, f₁, the standards a₄, a₅, carrying the coupling shaft g, the screws h, h₁ provided with bevel wheels h₂, h₃, and the shaft h₄ provided with bevel wheels h₅, h₆, substantially as and for the purpose set forth. 11th. In combination, the bed a, the standards a₁, a₂ carrying the rollers f, f₁, the standards a₃, a₄ carrying the coupling shaft g, the screws h, h₁ provided with bevel wheels h₂, h₃, the shaft h₄ provided with bevel wheels h₅, h₆, the sliding boxes f₂, f₃, g₁, g₂ having screws f₄, f₅, g₃, g₄, the miter wheels f₆, f₇, g₅, g₆ and the shaft g₆, g₇ provided with miter wheels g₈, g₉, substantially as and for the purpose set forth. 12th. In combination, the rollers f and f₁, the coupling shaft g, the notched disc i₁ secured thereto, the pawl arm i₂, the connecting rod i₃ and the crank i₄, substantially as and for the purpose set forth. 13th. In combination, the rollers f and f₁, the coupling shaft g, the notched disc i₁ secured thereto, the pawl arm i₂, the connecting rod i₃, the crank i₄, the shaft i₅, the cam i₆, the arm i₇, the punch j, punch j₁, and die m, substantially as and for the purpose set forth. 14th. In a machine for making horseshoes, the combination, with the folding or bonding device, of the adjustable punch and die n, m, and adjustable forming and feeding rollers f and f₁, substantially as and for the purpose set forth. 15th. In combination, the horizontal plunger o, the folding rollers n, n₁, the punch and die p, m the adjustable stop n₂, and the feeding rollers f, f₁, substantially as and for the purpose set forth. 16th. In combination, the horizontal plunger o, the folding rollers n, n₁, the punch and die

J, m, the adjustable stop *n*, the feeding rollers *f, A*, the horizontal table *n* and the folding dies *p, p*, substantially as and for the purpose set forth. 17th. In combination, the horizontal plunger *o*, the folding rollers *n, n*, the punch and die *j, m*, the adjustable stop *n*, the feeding rollers *f, A*, the feeding dies *p, p*, the trap door *q*, and the stripper *e*, substantially as and for the purpose set forth. 18th. In combination, the plunger *c* carried by the slide *o*, the adjustable connecting rod *o*, the crank *o* on the shaft of the pinion *c*, the rollers *n, n*, the stop *n*, punch and plunger *f, A*, tappet and arm *l, l*, and cam *l* on the shaft *cl*, substantially as and for the purpose set forth. 19th. In combination, the plunger *o*, connecting rod *o*, crank *o*, folding dies *p, p*, horizontal table *n*, trap door *q*, lever *r*, and cam *r*, substantially as and for the purpose set forth. 20th. In combination, the plunger *o*, connecting rod *o*, crank *o*, folding dies *p, p*, horizontal table *n*, trap door *q*, lever *r*, cam *r*, and cam *l*, substantially as and for the purpose set forth. 21st. The mutilated wheel *d, d, d, d*, in combination, with the pinion *e*, provided with horned projection *e* having a concave face, substantially as and for the purpose set forth. 22nd. In combination, the plunger *o*, the folding dies *p, p*, the horizontal table *n*, the trap door *q*, the stripper *e*, and the chute *v*, substantially as and for the purpose set forth. 23rd. In combination, the plunger *o*, connecting rod *o*, and crank *o*, folding dies *p, p*, horizontal table *n*, trap door *q*, lever *r*, cam *r*, the punch and die *j, m*, and the feeding rollers *f, A*, substantially as and for the purpose set forth. 24th. In a machine for making horseshoes, in combination, the mutilated wheel *d, d, d, d*, the pinion *e* connected by its shaft to the folding or bending mechanism, the wheel *c* rotating in a plane at right angles to *d* and *e* and connected by its shaft to the feeding rollers and cutting-off punch by means, substantially as described, whereby the feeding rollers and punch and folding devices are alternately operated, and the driving shaft *b*, and connecting gears *b, b, d*, as set forth.

No. 25,409. Milk and Cream Radiator.
(*Garde-Lait.*)

Samuel S. Jamison and Martin V. Patterson, Saltsburg, Penn., U.S., 25th November, 1886. 5 years.

Claim.—1st. The combination, with the outer vat and the milk receptacles, or vats seated therein, of the suction-pipe leading from one end of the said outer vat, the discharge pipe leading into the other end of the said vat, the pipe connecting the outer ends of those two pipes, and the steam pipe, provided with the regulating valve, and having the forwardly-inclined end arranged, as described, within the central portion of the connecting pipe, as and for the purpose set forth. 2nd. The combination, with the outer vat and the milk receptacles or vats seated therein, of the suction-pipe leading from one end of the outer vat, and having the valve near its outer end, the pipe leading into the other end of the outer vat and having the valve near its outer end, the pipe connecting the outer ends of these two pipes and having the valve at its forward open end, and the steam pipe provided with the regulating valve and having the forwardly-inclined end, arranged as described, within the central portion of the connecting pipe, as and for the purpose set forth. 3rd. The combination with the outer vats and the milk receptacle or vats seated therein, of the suction-pipes from one end of the said outer vats, and each having the valve near its outer end, the discharge pipes leading into the forward ends of the outer vats, and having the valves near their outer ends, the pipe connecting the outer ends of the discharge-pipes and suction-pipes, and having at its forward end the valve and the flexible hose and the steam pipe provided with the regulating valve and having the forwardly-inclined end arranged, as described, within the central portion of the connecting pipe, all constructed and arranged to operate in the manner and for the purpose herein set forth.

No. 25,410. Method and Machine for Forming Articles of Flexible Materials.
(*Mode de Façonner des Objets de Matières Flexibles et Appareil pour cet objet.*)

Isaac B. Kleinert, New York (Co-inventor with Arthur C. Squires, Brooklyn, N. Y., U.S., 25th November, 1886. 5 years.

Claim.—1st. The herein described method of forming articles of flexible material, which consists in entering the same into a long narrow coil, then securing the material at the ends of the coil, and finally pressing a stretcher between the walls of the coil, substantially as described. 2nd. The herein-described method of forming articles of flexible material, which consists of first inserting one part of the material into one of a series of cells, then another part into another cell of the series, and another part into another cell, and so on, until the desired number of cells are filled, and then forcing down into said cells simultaneously a series of stretchers, substantially as and for the purpose set forth. 3rd. The herein described method of forming articles of flexible material, which consists in forming the same between a series of partitions or formers, the outlines of whose upper edges are substantially the shape of the edge of the article to be formed, then subjecting the same to vulcanization, and finally cutting said articles apart and trimming the same to shape simultaneously, substantially as described. 4th. The herein described method of forming articles of flexible material, which consists in passing a fold of the material into one of a series of cells, and temporarily holding the same while another cell is filled, then inserting another fold of the material into another of the cells, and repeating said operation until the necessary folds have been inserted into the cells, next pressing simultaneously a series of stretchers into the cells, then submitting the material of a setting operation, and finally cutting the different articles apart and trimming their edges simultaneously, substantially as set forth. 5th. The combination, in a machine for forming articles of flexible material, of a frame provided with a series of partitions, forming cells between them, adapted to receive folds of the material being operated on, means, as the pins *G*, for securing the edges of the material, a series of stretchers constructed to pass between the folds, and means, as the board *D* and fasteners *E*, for holding the stretchers in position, sub-

stantially as described. 7th. The combination, in a shaping machine, of a frame provided with a series of stationary partitions or formers, whose upper edges are substantially the shape of the fold of the article to be formed, a series of movable shapers, whose lower edges are substantially the shape of another fold or edge of the article to be formed, and means, as the board *D* and fasteners *E*, for holding the said shapers in position, substantially as described. 8th. The combination, in a shaping machine, of a frame provided with the side bars *a*, the slotted end bars *b*, the partitions *B*, shapers *C*, top board *D* and fasteners *d, E*, substantially as described.

No. 25,411. Art or Process of Weaving Cloth composed of Jute and Wood, Cotton and Hemp, etc.
(*Art ou Procédé de Tissage des Tissus composés de Jute et de Bois, de Coton et de Chanvre, etc.*)

William C. Parker, William Ineson and Farrer Ineson, Weston, Ont., 25th November, 1886; 5 years.

Claim.—A combined cloth, such as of jute or hemp and wool inseparably interwoven, showing one surface of jute or hemp, and other surfaces of wool or cotton or both, substantially as and for the purposes set forth.

No. 25,412. Subway for Electric Current Wires or Cables.
(*Voie Souterraine pour Fils ou Câbles Electriques.*)

James MacFarlane, Malden, Mass., U. S., 25th November, 1886; 5 years.

Claim.—1st. The combination of the main pipe and the auxiliary pipes arranged therein, as described, with the sets of segmental saddles placed in the main pipe and with respect to it and the auxiliary pipes, substantially as set forth. 2nd. Each section of pipe composed of strips of wood, and wound spirally, and arranged one about another, and having between it and the one about which it is wound a layer of water-proof cement, which is a non-conductor of electricity.

No. 25,413. Shoe Fastener.
(*Agrafe de Soulier*)

John T. Senteney, Blocksburg, Cal., U. S., 25th November, 1886; 5 years.

Claim.—1st. A fastening comprising the plate, having a dovetailed stud projecting therefrom, and a second plate slotted and provided with cuts extending on each side of the slot, near one end, forming wings, and a cross-bar in front of said wings and slot, said wings being bent to one side of the plane of the plate, such slot adapted to receive the stud, as and for the purpose described. 2nd. In a fastening device, the combination, with a plate having a stud punched and depending therefrom, leaving an opening, of an eyelet inserted in said opening forming an attaching fastener, as and for the purpose set forth. 3rd. The herein shown and described fastener, comprising the hook plate having a stud punched and depending therefrom, leaving an opening, an eyelet inserted and held in said opening and projecting in an opposite direction to the stud, an eye-plate having a slot formed therein, and cuts extending on each side of the slot at one end, forming wings which are bent to one side of the plane of the plate, and a flat cross-bar to take the wear of the stud and give direction thereto, substantially as hereinbefore set forth.

No. 25,414. Keg and Barrel.
(*Tonnelet et Baril.*)

George H. Gillette, New York, N. Y., U. S., 25th November, 1886; 5 years.

Claim.—1st. A metallic covering for a keg or barrel stamped up in parts, adapted to be placed over such keg or barrel and joined or united together, whereby such covering is made to conform to the contour of the keg or barrel and completely enclose and protect the same, substantially as described. 2nd. A keg or barrel, the inner part whereof is of wood, or other suitable material, having upon its outer surface a covering of metal, stamped up or formed, as described, and fitted and secured thereon, whereby such keg or barrel is strengthened, and also adapted to be put to the ordinary uses of a wooden keg or barrel, substantially as described. 3rd. A beer keg or barrel, the inner part whereof is of wood or other suitable material, over which is placed a metal covering, having holes therein corresponding to and forming with holes in the wood or inner part, openings adapted to receive bushings, substantially as described.

No. 25,415. Egg Beater.
(*Ferge de Cuisine.*)

Thomas W. Brown, Belmont, Mass., U. S., 25th November, 1886; 5 years.

Claim.—1st. An egg beater, substantially as described, consisting of the compound spindle, composed of two intertwined wires and provided with a shoulder, as described, the tubular handle with its coupling disk arranged on such wires, the agitator fastened on the lower part of the spindle, the endless wire frame extending around the agitator and on opposite sides of and over the spindle, and the cross connections of such frame having spindle bearings, all being essentially as represented. 2nd. An egg beater, consisting of the compound spindle, composed of two intertwined wires, and having one of them at its lower part bent outwardly to form a stop, as described, the shoulder and tubular handle and its coupling disk, arranged as set forth, on such wires, the agitator fastened on the lower part of the spindle, the endless wire frame extended around the agitator and on opposite sides of and over the spindle, and the cross connections of such frame with their spindle bearings, all being constructed essentially as set forth. 3rd. In an egg beater, provided with compound spindle, composed of two intertwined wires, as described, one of such wires at its lower part bent outwardly, as set forth, to form a stop to arrest the agitator, as specified.

No. 25,416. Suction Plate for Artificial Teeth. (*Plaque d'Aspiration pour Dents Artificielles.*)

Charles G. Stackhouse, Ottawa, Ont., 25th November, 1886; 5 years.

Claim.—1st. A suction plate for artificial teeth, having a button formed integral with it for holding the valve, substantially as herein described and shown. 2nd. In a suction plate for artificial teeth, the valve D secured to the suction plate B by means of a button E, cast on or formed integral with the said suction plate, substantially in the manner described and for the purpose herein set forth.

No. 25,417. Manufacture of Shears.

(*Fabrication des Cisaillies.*)

Ira Harris, Cleveland, Ohio, U.S., 25th November, 1886. 5 years

Claim.—1st. The forging dies C, C₁, constructed and operating as herein shown and described, for forging each blade of a pair of bevel-bowed shears from a single piece of steel, as explained. 2nd. The series of dies A, A₁, B, B₁ and C, C₁, constructed and operating as herein shown and describe, for forging bevel-bowed shears. 3rd. The twisting or shaping dies F, F₁, constructed and operating as and for the purpose herein shown and described. 4th. The mode or process of manufacturing bevel bowed shears, each blade of a single piece of steel, which consists in breaking down the blanks with suitable preliminary dies, forging them with the dies C, C₁, punching out the surplus metal in customary manner, and finally shaping and twisting them by means of the dies F, F₁, all as herein described.

No. 25,418. Machine for splitting and Forming Sockets for Shovels, etc. (*Machine à Fendre et Façonner les Douilles des Pelles, etc.*)

Henry M. Myers, Beaver Falls, Penn., U.S., 25th November, 1886; 15 years.

Claim.—1st. In a machine for splitting shovel blanks, a cutter for splitting the tang, in combination with reciprocating jaws for supporting the tang laterally while being split, substantially as described. 2nd. In a machine for splitting shovel blanks, a reciprocating head and a cutter secured thereto, in combination with jaws for supporting the tang laterally, said jaws being moved by said head in unison with the cutter as it advances into the tang, substantially as described. 3rd. In a machine for splitting shovel blanks, a reciprocating head and a cutter secured thereto, in combination with reciprocating tang supporting jaws, and a yielding follower for holding the jaws and head in operative relation to each other, substantially as described. 4th. In a machine for splitting shovel blanks, a reciprocating cutter, in combination with jaws for supporting the tang laterally, and clamping jaws for holding the blank while being split, substantially as described. 5th. In a machine for splitting shovel blanks, a reciprocating head, a reciprocating cutter, in combination with reciprocating jaws for supporting the tang laterally, and a fixed and a movable jaw for holding the blank while split, substantially as described. 6th. In a machine for splitting shovel blanks, a reciprocating head, a cutter and a wedge secured thereto, in combination with tang supporters clamping jaws operated in one direction by said wedge and springs for separating them, substantially as described. 7th. In a machine for splitting shovel blanks, a reciprocating cutter for splitting the tang, in combination with jaws for supporting the tang laterally while being split, clamping jaws for holding the blank, and a rod for raising the blank after it has been split, substantially as described. 8th. In a machine for splitting shovel blanks, a reciprocating cutter, in combination with reciprocating tang supporting jaws, clamping jaws to hold the blank, a yielding follower supporting the first-named jaws, a rod and a spring for operating said follower and rod, substantially as described. 9th. In a machine for splitting shovel blanks, a reciprocating head, having a hammer attached thereto and carrying a cutter, in combination with blank clamping jaws, one of which has an anvil formed thereon in such relation to the hammer on the head that the split tang of one blank may be closed by the same stroke of the head that is splitting another blank, substantially as described. 10th. In a machine for splitting shovel blanks, a reciprocating head having a cutter secured thereto, in combination with blank clamping jaws, reciprocating tang supporting jaws operated in one direction by said head, and a spring for returning them to their normal position, substantially as described. 11th. In a machine for splitting blanks, a detachable saddle provided with a pair of vertically reciprocating jaws, a fixed jaw, a horizontally adjustable jaw and springs for operating the latter jaw in one direction, substantially as described. 12th. In a machine for splitting shovel blanks, a reciprocating head having a cutter and a wedge attached thereto, in combination with a pair of reciprocating tang supporting jaws, a fixed and a movable blank clamping jaw, springs for retracting said movable jaw, and a spring-actuated follower for raising the tang supporting jaws, substantially as described.

No. 25,419. Railway Rail Chair.

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

Horace H. C. Sintzenich, John Lamb and Andrew T. Todd, Toronto, Ont., 25th November, 1886; 5 years.

Claim.—1st. A rail-chair A, formed substantially as described, to support the rail B, in combination with the movable clutch C, substantially as and for the purpose specified. 2nd. A rail chair A, having a bed c, and a recess d formed in it to receive the bottom of the rail D, and the side piece e to butt against the body of the rail B, in combination with the movable clutch C, arranged substantially as and for the purpose specified. 3rd. The rail chair A, formed substantially as described, to receive the rail B, in combination, with the movable clutch C designed to butt against the body of the rail B, and provided with a tail f to fit into the recess g, substantially as and for the purpose specified. 4th. A rail-chair A, formed substantially as described, to receive the rail B, and having a recess g and

rounded shoulder i formed in its base, in combination with the movable clutch C, provided with a tail f to fit into the recess g, and a shoulder h to butt against the shoulder i, substantially as and for the purpose specified. 5th. A rail-chair A, formed substantially as described, to receive the rail B, and having a recess g and a rounded shoulder i formed in its base, in combination with the movable clutch C provided with a tail f to fit into the recess g, and a shoulder h to butt against the shoulder i, the bolt D inserted through the clutch C and chair A, substantially as and for the purpose specified.

No. 25,420. Automatic Candy-Shaping Machine. (*Machine Automatique pour Façonner le Candy.*)

James W. Tester, Montreal, Que., (assignee of Gustavus C. Snyder, New York, N.Y., U.S.), 25th November, 1886; 5 years.

Claim.—1st. In a candy-shaping machine, a rotating roller provided at suitable intervals with rotary knives, and a rotating roller having annular recesses, in combination with a roller having annular recesses and mounted to rotate in boxes which slide laterally, substantially as shown and described. 2nd. In a candy-shaping machine, a rotating roller provided at suitable intervals with rotary knives, a rotating roller having annular recesses and a laterally sliding roller, in combination with an automatically opening and closing hopper, substantially as shown and described. 3rd. In a candy-shaping machine, a rotating roller provided at suitable intervals with rotary knives, a rotating roller having annular recesses, and a laterally sliding roller having annular recesses, in combination with a sizing device and an automatically opening and closing hopper, substantially as shown and described. 4th. In a candy-shaping machine, a rotating roller provided at suitable intervals with rotary knives, a rotating roller having annular recesses, and a laterally sliding roller having annular recesses, in combination with a spring device an automatically opening and closing hopper, and a series of rocking platforms, substantially as shown and described. 5th. In a candy-shaping machine, a rotating roller provided at suitable intervals with rotary knives, and a rotating roller having annular recesses, both rollers being rotated from the main driving shaft, in combination with a roller having annular recesses vertically sliding arms, each having an inclined slot through which passes the shaft of the said roller, and cams operating the said arms and attached to a shaft operated from the said shaft, substantially as shown and described. 6th. In a candy-shaping machine, the rollers D₁ of the sizing device, the hopper O, the shafts F, G and H, the roller F₁ G₁ and H₁, and the rotary knives F₂, in combination with the shaft I, the cams K and M, the vertically sliding arm L having the vertical slots L₁ and the inclined slot L₂, the bent lever N attached to one side of the hopper O and the spring N₁, substantially as shown and described. 7th. In a candy-shaping machine, the platforms Q, Q₁ and Q₂, carried in rocking frame K receiving motion from eccentric T, and rod T₁, substantially as shown and described. 8th. In a candy-shaping machine, the shafts F, G and H, the rollers F₁, G₁ and H₁, and the rotary cutters F₂, in combination with the vertically sliding arm L having the vertical slots L₁, and the inclined slot L₂ and the cams K mounted on the slowly rotating shaft I, substantially as shown and described. 9th. In a candy-shaping machine, the shafts F, G and H, the rollers F₁, G₁ and H₁, and the rotary knives F₂, in combination with the vertically sliding arms L having the vertical slots L₁ and the inclined slots L₂, the cams K mounted on the slowly rotating shaft I, the pulleys P₁, P₂, G₃ and G₄ and H₃ and H₄, and the belts P₃, G₄ and H₄, substantially as shown and described.

No. 25,421. Waxed End or Thread.

(*Bout ou Fil Poisé.*)

William B. Arnold, North Abington, and J. R. Loeson, Boston, Mass., U.S., 25th November, 1886; 5 years.

Claim.—1st. The improved manufacture of waxed sewing thread, substantially as described, composed of one or more corrugated metallic wire or wires, and one or more strands of a fibrous vegetable or animal material intertwisted, and a covering of shoe-maker's wax, or its equivalent applied thereto, all being for use as set forth. 2nd. A sewing thread composed of one or more corrugated metallic wire or wires, and one or more strands of flax or a fibrous vegetable or animal material intertwisted together, all essentially as set forth. 3rd. A sewing thread composed of one or more corrugated wires, and a covering of one or more strands of a fibrous, vegetable or animal material wound or twisted about such corrugated wire or wires. 4th. A sewing thread composed not only of one or more corrugated wires, a covering of one or more strands of a fibrous, vegetable or animal material wound or twisted about such wire or wires, but of an additional covering of shoemaker's wax, as set forth.

No. 25,422. Method of, and Means for Making Shovels, etc. (*Méthode et Moyens de Fabrication des Pelles, etc.*)

Henry M. Myers, Beaver Falls, Penn., U.S., 26th November, 1886; 5 years.

Claim.—1st. The improvement in the art of making shovels from heated blanks which consists in partially reducing the blade and rolling out the tang to its proper dimensions for the handle straps between wet rolls, and completing the rolling and pointing the blade between dry rolls, substantially as described. 2nd. The improvement in the art of making shovels to the shearing point hereinbefore described, which consists in heating a bar of metal and cutting blanks therefrom, splitting the tang of the blank and forming the socket for the handle, partly reducing the blank and rolling out the tang to its proper dimensions for the handle straps between wet rolls, and completing the rolling and pointing the blade between dry rolls, substantially as described. 3rd. The improvement in the art of making shovels to the shearing point hereinbefore described, which consists in heating a blank, splitting the tang and forming the socket for the handle, partly reducing the blank and rolling out the tang to

its proper dimensions for the handle straps between wet rolls, and completing the rolling and pointing the blade between dry rolls, substantially as described. 4th. The improvement in the art of making shovels to the shearing point, which consists in heating a blank, splitting the tang and forming the socket for the handle, partly reducing the blank and rolling out the tang to its proper dimensions for the handle straps between wet rolls, reheating the blank, completing the rolling, and pointing the blade between dry rolls, substantially as described. 5th. The improvement in the art of making shovels to the shearing point, which consists in heating a bar of metal and cutting blanks therefrom, splitting the tang of the blank, and forming the socket for the handle partly reducing the blank, and rolling out the tang to the proper dimensions for the handle straps between wet rolls, then pickling the blank, reheating the same, completing the rolling and pointing the blade between dry rolls, substantially as described. 6th. The improvement in the art of making shovels to the shearing point, which consists in heating a blank, splitting the tang and forming the socket for the handle, partly reducing the blank and rolling out the tang to the proper dimensions for the handle straps between wet rolls, then pickling the blank, reheating the same, completing the rolling and pointing the blade between dry rolls, substantially as described. 7th. The process of making shovels to the shearing point, which consists in splitting the tang of a heated blank and forming the socket for the handle, partly reducing the blank by passing it through rolls tang foremost, then through other rolls first tang foremost, then blade foremost, then reducing the tang to proper dimensions for handle straps, pickling the blank, then reheating the same, and finally completing the rolling and pointing of the blade, substantially as described. 8th. The means herein described for reducing shovel blanks, which consists in the combination of breaking down rolls, a pair of rolls having a plain surface and an eccentric portion water-distributing pipes for said rolls, and a third pair of rolls having an eccentric portion in one of the rolls, substantially as described.

No. 25,423. Blank for Shovels, etc.

(Ebauche de Pelles, etc.)

Henry M. Myers, Beaver Falls, Penn., U.S., 26th November, 1886; 5 years.

Claim.—As a new article of manufacture, a shovel, scoop or spade-blank, as shown, in which the part marked E from the point B to the point C is substantially equal to the width intended for the shovel-blade, as herein described and for the purpose set forth.

No. 25,424. Flanging Machine.

(Machine à Mater.)

John O'Brien, St. Louis, Mo., U.S., 26th November, 1886; 5 years.

Claim.—1st. In a machine for flanging boiler-heads, the combination of a frame, a vertical shaft having a flanging disk, and adapted to be raised and lowered, a table on which the blank is supported, and the button by which the shaft is held down, as set forth. 2nd. In a machine for flanging boiler-heads, the jam-nut U, in combination with a frame, a vertical shaft on which the jam-nut is threaded having a flanging disk a lever connected to the shaft and a table, the jam-nut adapted to hold the shaft with its disk down on the table, as set forth. 3rd. In a machine for flanging boiler-heads, a shaft having a flanging disk made in sections to facilitate the removal of the boiler-head after it is formed thereon, as set forth. 4th. In a machine for flanging boiler-heads, the flanging disk composed of three sections, the main sections being formed with lugs, and the other sections supported on the main section, and having openings through which the lugs are passed, the sections being secured together by keys passed through the lugs, as set forth. 5th. In a machine for flanging boiler-heads, the combination of the table, shaft, and disk, the shaft and disk being connected together and having friction balls placed between them, substantially as set forth. 6th. In a machine for flanging boiler-heads, the combination of the table, shaft, and disk, the shaft and disk being connected by a short shaft and key, and having friction balls placed between them, substantially as set forth. 7th. In a machine for flanging boiler-heads, the combination of a frame having the radial arms A', formed with perforations A² to receive pins A³, and a table revolving independently of the arms, as set forth. 8th. In a machine for flanging boiler-heads, the combination of a frame having the radial perforated arms A¹, revolving table and adjustable roller A², substantially as set forth. 9th. In a machine for flanging boiler-heads the flanging device consisting of the radially sliding head O having lead-screw P to adjust it to and from the flanging disk, block M, journalled to the forward end of the head by guidepins M¹, cog-segment M² formed on the rear of the block roller N journalled in the block, and vertical shaft M³, having a worm-screw M⁴ and journalled in the rear part of the head, as set forth. 10th. In a flanging machine in which the flange is bent downward, the combination of the sliding-blocks V, former U, U¹, roller W, frame W², segment W³, block W⁴, worm W⁵, and means for adjusting said blocks back and forth, substantially as set forth.

No. 25,425. Semaphore. (Semaphore.)

John Brien, Hemmingford, Que., 26th November, 1886. 5 years.

Claim.—1st. The combination of the arm B, rope wire-cord or chain E, eccentric G with the rod K having projection N, knee G and lantern P, and inclined eye M, the whole constructed and arranged substantially as and for the purposes described. 2nd. The combination of the rod K having projection N, knee O and lantern P, with inclined eye M, and eccentric G, the whole constructed, arranged and operating substantially as described.

No. 25,426. Drawer Check and Support.

(Arrêt et Support de Tiroir.)

James A. Fraser, (assignee of Simon J. Fraser), Lowell, Mass., U.S., 29th November, 1886; 5 years.

Claim.—1st. The combination, with a drawer and its case, of a

T-shaped strip C, a slide D provided with blocks E, F that are formed to engage with the flanges of the strip C, and a T-shaped lug F secured to the bottom of the drawer and arranged to ride in a longitudinal groove formed in the slide D, substantially as described. 2nd. The combination, with a drawer and its case, of a T-shaped strip C secured to the case by plate c, a slide D provided with blocks E, E¹ and lugs F, H, secured to the bottom of the drawer, and arranged to ride in a longitudinal groove formed in the top of the slide D, substantially as described. 3rd. The combination, with a drawer and its case, of a T-shaped strip C, a slide D held to and arranged to slide upon the strip C, a lug F fixed to the under side of the drawer and arranged to ride in a longitudinal groove formed in the slide D, and a stop J, all substantially as described. 4th. The combination, with a drawer and its case, of the following elements: strip C, slide D formed with groove d, blocks E, lugs F and H, and plate I carrying stop J, all arranged and combined substantially as described. 5th. The combination, with a drawer and its case, of the following elements: strip C, slide D formed with groove d, blocks E, lugs F and H rounded off at s, plate I, spring l and lug J, substantially as described. 6th. The combination with a drawer and its case, of the following elements: strip C, slide D formed with groove d, blocks E, E¹, lugs F and H rounded off at s, plate I and lug J formed with a round face, substantially as described. 7th. The combination, with the drawer and its casing, of the slide connected to the draw and having blocks and springs, one arranged at the forward end of the draw-casing and the other arranged at the rear end of the said casing, substantially as and for the purpose set forth.

No. 25,427. Blank for Plain Back Shovels, etc. (Ebauche de Pelle, etc., à Dos Uni.)

Henry M. Myers, Beaver Falls, Penn., U.S., 26th November, 1886; 5 years.

Claim.—A new article of manufacture, a shovel, scoop or spade blank reduced in thickness lengthwise, and having an increased thickness at its centre extending its entire length, and gradually diminishing in thickness from the centre toward each side of the blank, substantially as herein described and for the purposes set forth.

No. 25,428. Plant for Manufacturing Shovels, etc. (Matériel de Fabrication des Pelles, etc.)

Henry M. Myers, Beaver Falls, Penn., U.S., 26th November, 1886; 5 years.

Claim.—1st. For the manufacture of shovels, scoops, or spades, a plant consisting of a furnace for heating billets, rollers for reducing them to bars, a machine for cutting the blank, a machine for splitting the tang to form the handle straps, and socket rollers for reducing the blank, and a point-reducer, all arranged and operated with relation to each other, substantially as described. 2nd. For the manufacture of shovels, spades, or scoops to the shearing point, a plant comprising a furnace, a machine for splitting the tang of the blank to form the handle straps and the socket, a pair of "breaking down rolls," a pair of "finishing rolls," and a pair of "pointing rolls," all arranged and operating with relation to each other substantially as herein described. 3rd. For the manufacture of shovels, spades, or scoops to the shearing point, a plant comprising a furnace, a blank-cutting machine, an auxiliary furnace, a machine for splitting the tang of the blank to form the handle straps and the socket, a pair of breaking-down rolls, a pair of finishing rolls, and a pair of pointing rolls, all arranged and operating with relation to each other, substantially as herein described.

No. 25,429. Grain Binder Attachment.

(Appareil de Lieuse à Grains.)

Joseph P. Bullock, Milwaukee, Wis., U.S., 27th November, 1886; 5 years.

Claim.—1st. The combination, with the compressor and its shaft, of an adjustable plate for connecting said shaft with the tripping-lever and the actuating wheel, as set forth. 2nd. The combination, with the compressor-shaft having the stored arm B¹, of the adjustable plate C, and mechanism for connecting it with the tripping arm and the actuating wheel, as set forth.

No. 25,430. Machine Belting.

(Courroie de Machine.)

William L. Tator, Philadelphia, Penn., U.S., 30th November, 1886; 5 years.

Claim.—1st. In a woven machine-belt, three or more cotton layers of warps, every alternate layer being furnished with a series of metal warp, in combination with filling and binding threads to unite the several layers of warp to form a compact belt, substantially as and for the purpose specified. 2nd. In a woven machine-belt, three or more cotton layers of warp, every alternate layer being furnished with a series of metal warps, and in which the two outer layers are of cotton only, in combination with filling and binding threads to unite the several layers of warp to form a compact belt, substantially as and for the purpose specified. 3rd. A machine-belt composed of one or more layers of combined metallic and cotton warp, and three or more layers of cotton warp, the metallic warp being inclosed between the cotton layers of warp, and in which the wearing surface or that which runs next to the pulleys is made with a double layer of cotton warp, substantially as and for the purpose specified. 4th. A machine-belt composed of one or more layers of combined metallic and cotton warp, and three or more layers of cotton warp, the metallic warp being inclosed between the cotton layers of warp, and in which the wearing surface or that which runs next to the pulleys is made with a double layer of cotton warp, in combination with a single filling thread which passes successively between the warp of each layer, substantially as and for the purpose specified. 5th. A machine-belt consisting the combination of the cotton warp H, the cotton and me-

talic warp P, interposed between them suitable filling threads and binding warp, substantially as and for the purpose specified. 6th. In a woven machine-belt, one or more layers of metallic warp interposed between two or more layers of cotton warp, in combination with suitable filling-threads and binding warp, the latter passing entirely across all the layers or warp binding them together, substantially as and for the purpose specified.

No. 25,431. Bill File. (*Serre-Papier.*)

Samuel H. Fish, Hinsdale, Ill., U. S., 30th November, 1886; 5 years.

Claim.—1st. The combination, in a bill and letter file, of curved needles rigidly attached to the same shaft, the handle or pull-rod pivoted to each of said needles for turning the same, fixed arms or hooks opposed to said needles respectively, and stop mechanism carried upon said handle for holding the file closed, substantially as shown and described. 2nd. The combination, with the frame having the upright pieces and horizontally projecting bearings, of the shaft mounted on said bearings, the hooks or arms *t*, *s* secured to the upper portion of the frame, the needles *f*, *g* secured rigidly near the end of the shaft, and opposed to said arms, and a handle or pull-rod pivoted at *h*, *h*, and serving as a handle to open and close the file, substantially as and for the purpose specified. 3rd. The combination, with the frame consisting of the bar *l*, upright pieces *c* and bearings *d*, of the shaft mounted on said bearings, the needles attached rigidly to the shaft, the opposing wires or arms *i* attached to said frame, and provided with sockets corresponding to the needle points, and the handle or pull-rod *g* pivoted to said needle at *h*, *h*, and provided with stops or catches *k*, whereby the file may be opened and closed, and the bills placed thereon may be examined or removed, substantially as and for the purpose specified. 4th. The combination, in a bill file, with the handle or pull-rod *g* provided with catches *k* and teeth *m*, of the needle *f* to which said handle *g* is connected, the shaft to which the needles are attached, and a frame for supporting the shaft, substantially as and for the purpose specified. 5th. The combination, with the curved needles and their opposing curved arms or hooks, of the central shaft to which said needles are attached, the handle or pull-rod pivoted to the needles, the frame and the stop mechanism carried by the handle, and operated thereby, whereby the file is opened and closed, and held closed, and the motion of the needles limited, substantially as and for the purpose specified. 6th. The combination, with the upright pieces *c*, *c*, provided with pins *n* for limiting the upward motion of the handle or pull-rod *g*, provided with stops or catches *k*, *k* and *m*, *m*, said handle or pull-rod being pivoted at *h*, *h* to hook- or needles *f*, the shaft *e* journaled to the frame and carrying said needles, the curved arms *i*, *i* attached rigidly to the frame, and with said needles when closed forming about three-fourths of the circumference of a circle, substantially as specified. 7th. The combination, with the upright pieces *c* of pins *n* fitting loosely, the handle *g* pivoted at *h* to the needles, said needles and thread inserted thereat, whereby on moving the pins outwardly the handle may be raised and pulled back to draw the points of the needles back through the bills or letters to string the same upon the thread, substantially as described.

No. 25,432. Combined Truck and Step-Ladder. (*Carçon-Echelle.*)

James Hill, Wilkesbarre, Penn., U. S., 30th November, 1886; 5 years.

Claim.—1st. The herein described combined truck and step-ladder, consisting of the parallel side bars connected by cross-pieces, and having bevelled ends, the wheels located near the ends of said side-bars, the truck-frame having the handle ends and a lifting plate, the angular foot-rests and the pins secured on the step-ladder, said truck-frame and step-ladder being pivotally connected by a nutted rod, substantially as shown and described. 2nd. In a combined truck and step-ladder, the angular foot-rests for supporting one end of the truck, in connection with pins secured on the step-ladder frame for holding the truck in an approximately upright position, substantially as shown and described. 3rd. The combination of the truck-frame, having foot-rests, the step-ladder having pins to register with said foot-rests, and wheels disposed substantially as shown and for the purpose described. 4th. The combination, with a step-ladder, having a pin on each side thereof, and the side bars bevelled on their lower ends, of the truck having foot-rests, and the nutted bar pivoting said ladder and truck, substantially as shown and described. 5th. The combination, with the truck-frame and step-ladder having apertured plates, of the clasp or frame having opposite extensions, the shelf and the hinging rod, substantially as shown and described. 6th. The combination, with the step-ladder having the apertured plates, of the fixed clasp or frame, the pivoted clasp or frame and the shelf having pins on its upper end, substantially as shown and for the purpose described.

No. 25,433. Reflector and Dash-Board Attachment for Lanterns. (*Support de Reflecteur et de Lanterne Applicable aux Garde Crottes.*)

Lewis F. Botts, New York, N. Y., U. S., 30th November, 1886; 5 years.

Claim.—1st. In combination with a tubular lantern, the reflector having the side walls curved or bent at their margins, as explained, the said bent portions being made to fit upon the lantern tubes, substantially as and for the purpose set forth. 2nd. In combination with a tubular lantern, a reflector having the side walls bent at their margins, as explained, the said bent portions being made to fit the lantern tubes, and a catch for locking the reflector upon the lantern, substantially as set forth. 3rd. In combination with a tubular lantern, the reflector having the side walls bent at their margins to fit upon the tubes, the ledge for bearing upon the oil fount of the lantern, and the hinged hook for engaging with the lower part of the lantern, substantially as shown and described. 4th. The herein-described attachment for tubular lanterns, consisting of a concave reflector, having the curved marginal portions for fitting the inclined lantern tubes, the ledge hook and spring, all constructed and arranged substantially as shown and described.

No. 25,434. Chill for Casting Car Wheels.

(*Coquille pour Couler les Roues des Chars.*)

John R. Whitney, Radnor, Penn., U. S., 30th November, 1886; 5 years.

Claim.—1st. A chill, consisting of an outer and an inner ring or plate, the latter being divided into segments or sections by the process of casting, and the segments connected by webs with the outer ring or plate, all the parts being of such thickness as to be of equal or nearly equal density throughout, and all forming together one complete and undivided casting, substantially as set forth. 2nd. A chill, consisting of an outer ring, an inner ring or plate divided into sections of uniform thickness throughout, and of one or more connecting webs between each inner section and the outer ring, all formed in one complete casting, substantially as set forth. 3rd. A chill, consisting of a solid continuous casting, with its chilling surface separated into segments or sections by the process of casting, and having air passages, whereby the heat alone of the molten metal poured into the chill will cause its inner diameter to contract while the air prevents the expansion of its outer diameter, substantially as set forth. 4th. A chill, consisting of an outer ring, an inner ring composed of a series of sections of uniform density and connecting webs all forming one complete casting, substantially as set forth. 5th. A chill, consisting of an outer and an inner ring and connecting webs, the outer ring having an unobstructed circular perforary for the purpose described. 6th. A chill, provided with an outer ring and an inner ring composed of sections, supported by webs with intervening slots, less than one-sixteenth of an inch in width, all formed in one complete casting, for the purpose described. 7th. The combination in a moulding flask of a cope drag and of a chill, consisting of an inner and an outer ring connected by webs arranged to form openings *y*, arranged to permit upward draughts of air to pass without artificial or mechanical aid of any kind, substantially as set forth. 8th. The combination of the cope drag and the chill, having vertical openings between its inner and outer rings arranged with the said openings beyond the outer faces of the cope and drag, substantially as described.

No. 25,435. Hog Cholera Remedy.

(*Remède pour le Cholera les Porceaux.*)

Cyrus S. Griffith, Murphysborough, Ill., U. S., 30th November, 1886; 5 years.

Claim.—The herein described composition of matter to be used for treating and preventing cholera and kindred diseases in swine or hogs and other domestic animals, consisting of red Dutch madder, opson salts, asafoetida and lamp black, in proportions specified.

No. 25,436. Fish Hook. (*Hameçon.*)

Cornelius Lie, Chicago, Ill., U. S., 30th November, 1886; 5 years.

Claim.—1st. The combination, with an artificial bait, of a bar held in the same to have longitudinal movement, of two hooks pivoted to said bar and having diagonal slots to receive a fixed part of said bait, and of a spring acting on said bar, substantially as shown and described, whereby the hooks are normally held within the bait, and projected therefrom when tension is put on a line to which the bait is attached, as set forth. 2nd. The combination, with an artificial bait, of a bar having its outer end adapted for attachment to a fish line, and slotted near its inner end, two hooks pivoted at their lower ends to the inner end of the said bar, and provided each with a diagonal slot, a pin or rivet passing through the said bait and through the slots in the bar, and hooks, and of a spring attached to said bar and taking against the head end of the bait, substantially as shown and described. 3rd. The combination with the bait *A*, of the bar *G* having slot *I*, the hooks *L* and *M* pivoted at *K* to said bar and provided with the slots *N* and *O* respectively, the rivet *F* and the spring *J*, substantially as shown and described. 4th. The combination with the artificial bait *A*, painted with luminous paint, of the bar *G* held to have longitudinal movement in said bait, the hooks *L* and *M*, having diagonal slots, the spring *J* and the rivet or pin *F*, substantially as shown and described. 5th. A combined artificial bait and hook, consisting essentially of the slotted body *A*, the bar *G* having slot *I*, the hooks *L* and *M* pivoted to the inner end of bar *G*, and having the diagonal slots *N*, *O*, the pin or rivet *F* and the spring *J*, all constructed and arranged substantially as shown and described and for operation, as set forth.

No. 25,437. Petroleum Burner.

(*Foyer à Pétrole.*)

Elias B. De La Matyr, Chicago, Ill., U. S., 30th November, 1886; 5 years.

Claim.—1st. The combination, with a reversible petroleum burner, substantially as described, of a steam pipe, arranged to supply steam to the burner, substantially as described. 2nd. The combination, with a reversible petroleum burner having duplicate chambers or channels arranged reversely to each other, and provided with the shifting bottom rods or pieces, of a steam pipe for supplying steam to said burner, substantially as described. 3rd. The combination, with a reversible petroleum burner, substantially as indicated, of a distributing chamber located above the burner for discharging the contents of the chamber at different points in the burner, substantially as set forth. 4th. The combination, with a reversible petroleum burner, of a distributing chamber located above the burner, and steam pipes arranged to supply steam at different points of said distributing chamber, substantially as described. 5th. The combination with a casing and a reversible petroleum burner held therein, of a steam generator located within the casing, and steam pipes arranged to supply steam to the burner, substantially as described.

No. 25,438. Cattle Stanchion. (*Stalle à Bétail.*)

Jackson A. Barber, North Adams, Mich., U. S., 30th November, 1886; 5 years.

Claim.—1st. In a stanchion for cattle, the combination, with the

sill A and top rail B having a slot between them, of stanchion bars D, D', independently pivoted to the sill and within the slot of the top rails by screw-threaded hooks upon which said bars are adjustable, substantially as and for the purpose set forth. 2nd. In combination with the sill A and the top rails B having a slot between them, of stanchion-bars D, D', independently pivoted at top and bottom in the slot and sill by hinged hooks E, screw-threaded, and the hook F having an arm provided with perforations and resting in a slot in the lower end of one of the bars, the said bars being adjustable to and from each other on the screw-threaded hooks, and perforated arm, and adapted to turn upon said pivots, substantially as and for the purpose set forth.

No. 25,439. Corset Shaping Machine. (Machine à Façonner les Corsets.)

Seymour H. Rosenberg, New Haven, Conn., U. S., 30th November, 1886; 5 years.

Claim.—1st. The combination of a hollow former B, adapted to receive steam or hot water therein, its outer surface corresponding to the shape of the part of the corset to be pressed, said former stationary, a series of rubbers arranged each side of the former attached to the upper end of levers, the said levers extending below the former, each lever constructed with a vertical slot *e*, and hung upon a fulcrum *d* through said slot, the said levers movable up and down upon their fulcrum, the said slots curved correspondingly to the shape of the former, and mechanism substantially such as described, to impart up and down movement to said levers and the rubbers which they carry, substantially as described, and whereby said rubbers will be forced upon the surface of the corset on the former, and rub thereon to bring the corset to the shape of the former. 2nd. The combination of the hollow former B, adapted to receive steam or hot water therein, its outer surface corresponding to the shape of the part of the corset to be pressed, said former stationary, a series of levers E, F, on each side the former, the said levers carrying upon their upper end respectively, rubbers *a*, *b*, and *c*, the said levers extending downward, and each constructed with a slot *e* and hung upon a fulcrum *d* through said slot, whereby up and down movement is permitted to said levers and rubbers, a lever H below the fulcrum connecting corresponding levers on opposite sides, the said levers H hung upon a fulcrum, whereby a rocking or evening movement is permitted to said lever H, and mechanism, substantially such as described, to impart up and down movement to said levers H, substantially as specified. 3rd. The combination of a hollow former B adapted to receive steam or hot water therein, its outer surface corresponding to the shape of the part of the corset to be pressed, a series of levers E, F, and *c* on each side, the former extending downward and carrying at their upper end respectively rubbers *a*, *b*, the said levers each constructed with a slot *e* and hung upon a fulcrum *d* through said slots, said fulcrums being below the former and adjustable toward and from said former, the said levers extending below the fulcrum, with a lever H connecting the said levers on one side with corresponding levers on the opposite side, and mechanism, substantially such as described, to impart up and down movement to said levers and rubbers, substantially as specified.

No. 25,440. Gas Heater for Sad Irons. (Chauffeur à Gaz pour Fers à Repasser.)

John W. Oldin, Kingston, Ont., 30th November, 1886, 5 years.

Claim.—1st. A sad-iron gas-heater, consisting of a base 1, having bearings 2, tubular chamber 3, having gas orifices 8 and valves 4, adjustable by thumb-screw 15, supply-tube 6, having valve 7 connecting with lever 9, terminating in a stand 10, having arms 12 provided with nuts 14, and a spring 11, whereby the supply of gas to the burners is automatically controlled by the removal and placement of the sad-iron and the supply of gas regulated, as set forth. 2nd. In a sad-iron gas heater, a tubular chamber 3 connecting with the gas supply, and having transverse slots 8 inclining alternately in opposite directions to distribute the heat generated by combustion, and converge two flames, as set forth. 3rd. The combination, with the base 1 and bearing 2, supporting a tubular gas burner, and lever 9 having a stand 10, of the cover 17 pivoted to bearing 2 and provided with a slit for exposing the handle of a sad-iron, as set forth.

No. 25,441. Wire Coiler. (Mandrin pour Rouler le Fil de Fer.)

Charles A. Hart, Toronto, Ont., 30th November, 1886; 5 years.

Claim.—A wire coiling spindle, having its coiling grooves *a*, *b*, with one or more dips *d* in it, substantially as and for the purpose specified.

No. 25,442. Staining Machine. (Machine à Teindre.)

Charles Bechly, Sheboygan, Wis., U. S., 30th November, 1886, 5 years.

Claim.—1st. A machine for staining cigar-box lumber that comprises one or a series of staining rollers journaled in a suitable frame, and revolved within a receptacle containing liquid stain, and one or a series of pressure rollers also journaled in the frame immediately above and parallel to the first-named roller or series of rollers, as set forth. 2nd. A machine for staining cigar-box lumber, that comprises one or a series of staining rollers journaled in a suitable frame, and revolved within a receptacle containing liquid stain, and one or a series of vertically-yielding pressure rollers also journaled in the frame immediately above and parallel to the first-named roller or series of rollers, as set forth. 3rd. A machine for staining cigar-box lumber, that comprises one or a series of staining rollers journaled in a suitable frame, and revolved within a receptacle containing liquid stain, any one of these staining rollers provided with spiral beads and grooves, and one or a series of pressure rollers also journaled in the frame immediately above and parallel to the first-named roller or series of rollers, as set forth. 4th. A machine for staining cigar-box lumber, that comprises two staining rollers journaled in a suitable frame parallel to each other on a horizontal

plane, each of these rollers having keyed to one of its journals a gear wheel that meshes with an interposed pinion on a power shaft, also journaled in the frame, and one of said rollers provided with spiral beads and grooves, two vertically-yielding pressure-rollers also journaled in the frame parallel to each other on a horizontal plane and immediately above the staining rollers, and a receptacle for liquid stain suspended below the last named rollers and provided with a discharge faucet, as set forth. 5th. A machine for staining cigar-box lumber, that comprises one or a series of rough-faced staining rollers journaled in a suitable frame, and revolved within a receptacle containing liquid stain, and one or a series of pressure-rollers also journaled in the frame immediately above and parallel to the first-named roller, or series of rollers, as set forth.

No. 25,443. Safe Edge Scoop.

(Ecope à Arête de Sûreté.)

Augustus R. Hynson, St. Louis, Mo., U. S., 30th November, 1886; 5 years.

Claim.—As an improved article of manufacture, a scoop, provided with tapering tubes at its edges, substantially as shown and described for the purpose set forth.

No. 25,444. Oar, Scull, or Sweep.

(Rame, Aviron ou Gondelle.)

George W. Green, London, Eng., 30th November, 1886; 5 years.

Claim.—The manufacture of oar, sculls, or sweep blades of any sheet metal substance, bent, pressed, or spun into shape, and provided with a wooden handle, as shown upon the drawings, and herein described and for the purpose set forth.

No. 25,445. Heating Drum. (Poêle Sourl.)

Matthew Ryan, Washington, D. C., U. S., 30th November, 1886; 5 years.

Claim.—1st. A heating drum dumb-stove or heater, constructed with a zig-zag flue or passage, continuously tapering or contracting in the direction of the current, the partitions forming same projecting at the sides of the casing. 2nd. A heater, consisting of a casing containing a zig-zag flue or passage, having the capacity of the stove-pipe at the inlet, and contracting or tapering continuously towards the outlet, the plates forming said passage exposing part of their surface for the purpose of radiating the conducted heat, substantially as shown and described. 3rd. The combination of the casing A, inlet B, outlet C, covered openings C₁, door C₁, plates D, substantially as shown and described. 4th. The combination of casing A, partitions formed of several thin layers *d*, their ends *d*₁ projecting through the sides of the casing and splayed, and such partitions forming a continuous zig-zag passage P tapering in the direction of the current, substantially as shown and described. 5th. The combination of a series of sheets *d*, covered with a coating of lamp black, and placed together to form a partition D, substantially as shown and described. 6th. The combination of a casing A, inlet B, outlet C, tapering passage P, partitions D, plates *d*, splayed ends *d*₁, openings C₁ and door C₁, substantially as shown and described.

No. 25,446. Composition for Architectural Purposes. (Composition pour des fins d'Architecture.)

Carl Straub, Syracuse, N. Y., U. S., 30th November, 1886, 5 years.

Claim.—1st. The herein described composition of matter, to be used with plaster of Paris and water for forming an artificial building material, consisting of glue, boiled linseed oil, water and acid, substantially as set forth. 2nd. The herein described artificial building material, consisting of glue, boiled linseed oil, water, acid and plaster of Paris, compounded in substantially the proportions and manner specified. 3rd. The herein described composition of matter, consisting of glue, water, boiled linseed oil and muriatic and sulphuric acids, combined substantially in the proportions specified. 4th. The herein described composition of matter to be used with calcined sulphate of lime, and calcined carbonate of lime, consisting of glue, boiled linseed oil and muriatic and sulphuric acids, all combined substantially in the proportions specified.

No. 25,447. Reacting Car Brake. (Frein de Char à Réaction.)

Charles W. Martin, Milton, Ont., 30th November, 1886; 5 years.

Claim.—1st. A re-acting brake, composed of a friction disc firmly fastened to one end of the axle of the car, and operated by a friction face formed on the side of the ratchet-wheel next it, the said ratchet-wheel being held in position by a suitable dog, the other side of the ratchet-wheel having a barrel formed on it to receive a spiral spring one end of which is fastened to the ratchet-wheel, while the other end of the spring is fastened to a disc, having a barrel formed on it, the same as that formed on the ratchet wheel, in combination with a lever, the forked end of which is designed to fit into a recess in the collar formed in the other side of the centre disc, and a lever K, having a dog-shaped end L arranged to engage with the ratchet wheel situated next to the disc for imparting a forward movement to the wheels, substantially as and for the purpose specified. 2nd. A ratchet wheel loosely journaled on the axle and held in position by a suitable dog, the said ratchet wheel having one end of a spiral spring fastened to its inner surface, while the other end of the spring is fastened to a disc having formed with it a collar with an annular recess formed in it to receive the forked end of the lever for adjusting the movable friction discs on the axle, in combination with a lever having a dog-shaped end arranged to engage with the ratchet-wheel on which the friction face is formed to come in contact with the disc for imparting a forward movement to the wheels, substantially as and for the purpose specified. 3rd. The dog *d* and lever K, having a dog-shaped end L arranged to engage with the ratchet-wheels D and J, respectively, substantially as and for the purpose specified.

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

721. S. HUTCHISON, 3rd 5 years of No. 6,727, from the 6th day of November, 1886. Improvements on Steam Boiler and other Furnaces, 2nd November, 1886.
722. D. O. FRANCKE (reissue) 2nd 5 years of No. 18,654, from the 12th day of November, 1886. Improvement on the Manufacture of Paper Pulp, 2nd November, 1886.
723. THE REND ROCK POWDER CO., (assignee), 2nd 5 years of No. 13,668, from the 10th day of November, 1886. Improvements in Explosive Compounds, 5th November, 1886.
724. THE REND ROCK POWDER CO., (assignee) 2nd 5 years of No. 13,669, from the 10th day of November, 1886. Improvements on Blasting and Blasting Cartridges, 5th November, 1886.
725. T. HAGAR, (assignee) 2nd 5 years of No. 15,465, from the 13th day of September, 1886. Improvements on Devices for and Method of Attaching Buttons to Shoes, Clothing, etc., 8th November, 1886.
726. T. HAGAR, (assignee), 2nd 5 years of No. 16,460, from the 7th day of March, 1886. Improvements in Apparatus for Fastening Buttons, 8th November, 1886.
727. J. W. FOWLER and D. F. LEWIS, 2nd 5 years of No. 13,654, from the 9th day of November, 1886. Improvements in Registering Apparatus, 9th November, 1886.
728. W. DELANY, 3rd 5 years of No. 6,761, from the 14th day of November, 1886. Improvements in the Construction of Lamp Posts, 9th November, 1886.
729. G. F. KNIGHT, 2nd 5 years of No. 13,690, from the 12th day of November, 1886. Improvements on Dogs for Saw Mill Carriages, 10 November, 1886.
730. J. S. GUTHERIE, 3rd 5 years of No. 6,817, from the 24th day of November, 1886. Improvements on Corsets, 10th November, 1886.
731. G. F. FILLEY, 2nd 5 years of No. 13,852, from the 20th day of December, 1886. Improvements on Cooking Stoves and Ranges, 11th November, 1886.
732. G. F. FILLEY, 2nd 5 years of No. 13,853, from the 20th day of December, 1886. Improvements on Cooking Stoves and Ranges, 11th November, 1886.
733. G. F. FILLEY, 2nd 5 years of No. 13,854, from the 20th day of December, 1886. Improvements on Ranges, 11th November, 1886.
734. G. F. FILLEY, 2nd 5 years of No. 13,855, from the 20th day of December, 1886. Improvements on Cooking Stoves, 11th November, 1886.
735. G. F. FILLEY, 2nd 5 years of No. 13,856, from the 20th day of December, 1886. Improvements on Stove and Range Ovens, 11th November, 1886.
736. G. F. FILLEY, 2nd 5 years of No. 13,857, from the 20th day of December, 1886. Improvements on Stove and Range Ovens, 11th November, 1886.
737. G. F. FILLEY, 2nd 5 years of No. 13,858, from the 20th day of December, 1886. Improvements on Cooking Stoves, 11th November, 1886.
738. G. F. FILLEY, 2nd 5 years of No. 13,859, from the 20th day of December, 1886. Improvements on Cooking Stoves, 11th November, 1886.
739. G. F. FILLEY, 2nd 5 years of No. 13,884, from the 23rd day of December, 1886. Improvement on Ranges, 11th November, 1886.
740. G. F. FILLEY, 2nd 5 years of No. 13,910, from the 23rd day of December, 1886. Improvements on Ranges, 11th November, 1886.
741. R. H. TUCKER, (assignee), 2nd 5 years of No. 13,769, from the 30th day of November, 1886. Improvements on Vehicle Springs, 13th November, 1886.
742. J. MAUNDER, 2nd 5 years of No. 13,712, from the 17th day of November, 1886. Improvements on Iron Harrows, 13th November, 1886.
743. E. A. A. MERRIMAN, (assignee), 2nd 5 years of No. 13,745, from the 24th day of November, 1886. Improvements on Covering for Steam Pipes, Boilers, etc., 15th November, 1886.
744. A. LEITCH and M. TURNBULL, 3rd 5 years of No. 13,783, from the 2nd day of December, 1886. Improvements on Hoisting Machines, 19th November, 1886.
745. M. J. WOODWARD, 2nd and 3rd 5 years of No. 25,301, from the 30th day of October, 1886. Improvements on Process of Refining Petroleum and other Substances Containing Sulphur or Phosphorus, 20th November, 1886.
746. THE MASSEY MANUFACTURING CO., (assignee) 2nd 5 years of No. 13,756, from the 28th day of November, 1886. Improvements on Harvesting Machines, 25th November, 1886.
747. A. DAY, 3rd 5 years of No. 6,893, from the 21st day of December, 1886. Improvements in a Machine for Clearing Railway Tracks, 29th November, 1886.
748. E. W. VANDUZEN, 2nd 5 years of No. 13,900, from the 26th day of December, 1886. Improvements on Steam Water Elevators, 30th November, 1886.
749. W. SANDERSON, 2nd 5 years of No. 13,986, from the 16th day of January, 1887. Improvements in Ploughs, 30th November, 1886.
750. THE BELL TELEPHONE CO., (assignee) 2nd and 3rd 5 years of No. 15,134, from the 19th day of July, 1887. Improvements on Telephone Exchange Instruments, 30th November, 1886.
751. THE BELL TELEPHONE CO., (assignees) 2nd and 3rd 5 years of No. 14,151, from the 9th day of February, 1886. Improvements in Combined Telephone and Automatic Switches, 30th November, 1886.
752. THE GEORGE T. SMITH MIDDINGS PURIFIER CO., (assignee) 2nd and 3rd 5 years of No. 13,832, from the 14th day of December, 1886. Improvements for Automatic Feed for Middings Purifiers, 30th November, 1886.

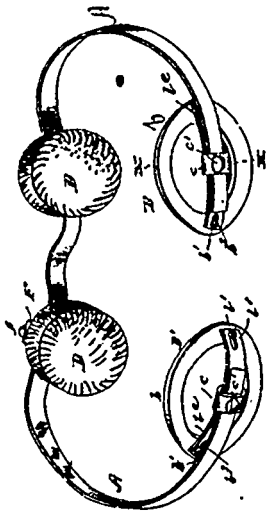
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ILLUSTRATIONS.

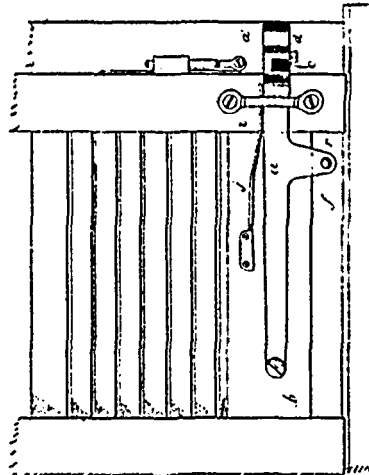
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DECEMBER, 1886.

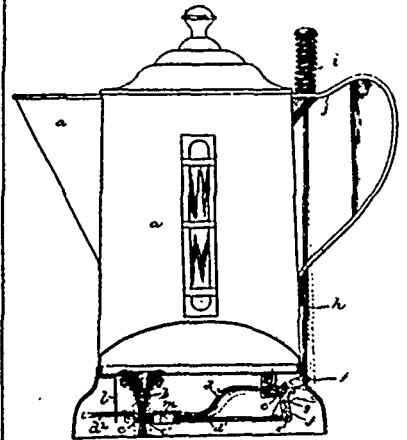
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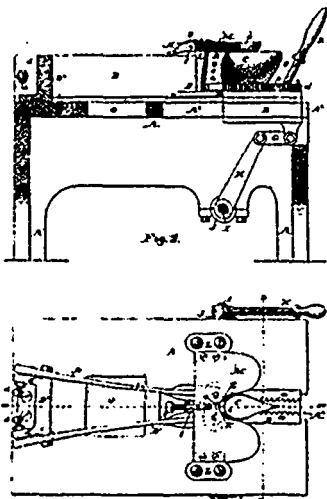
25302 Bell's Truss.



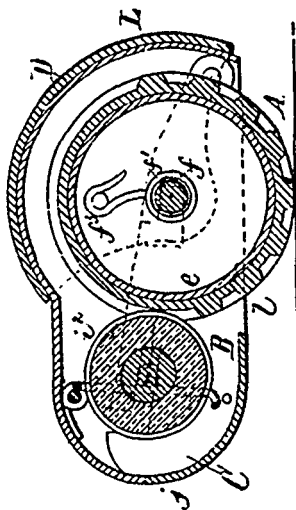
25303 Abbott's Shutter Fastener.



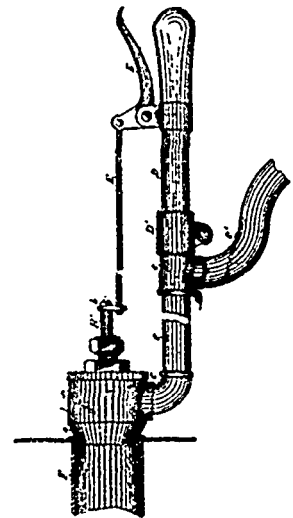
25304 Abbott's Valve for Liquid Receptacles.



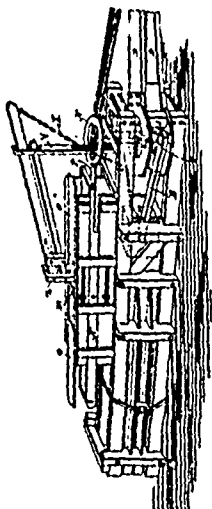
25305 Colé's Heel Stiffener.



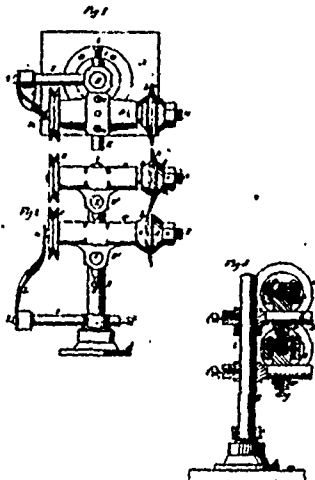
25306 Keeler's Revolving Pocket Hand Stamp.



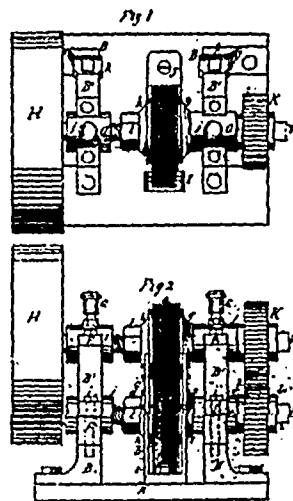
25307 Harley's Fluo Cleaner.



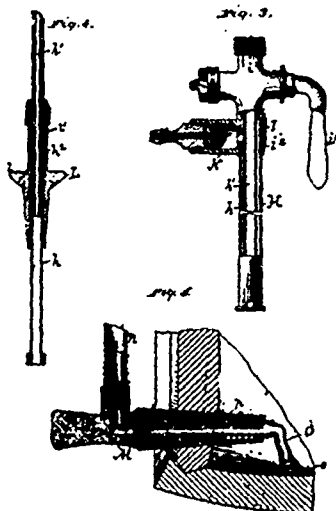
25308 Dedrick's Baling Press.



25309 Holden's Machine for Removing Plumage from Feathers.



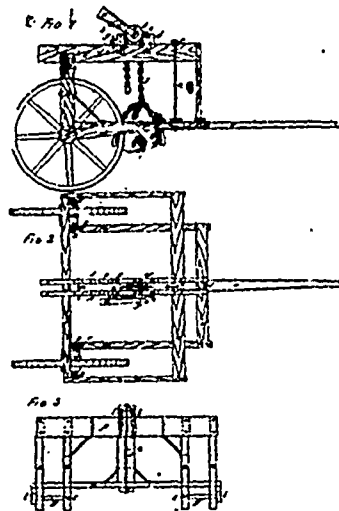
25310 Holden's Machine for Reducing Quills, etc., to Fibre.



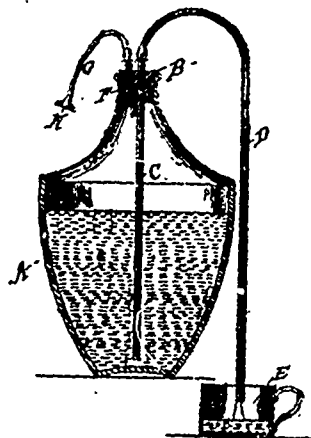
25311 Collins & Weatherhead's Beer Apparatus.



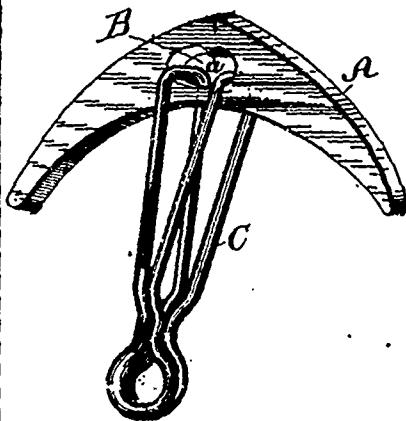
25312 Hollidge's Pio Plate Lifter.



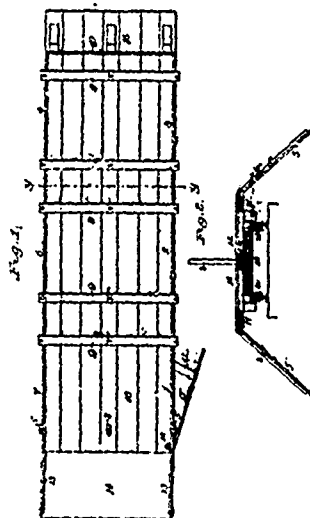
25313 Kemp's Wheeled Stump and Stone Lifter.



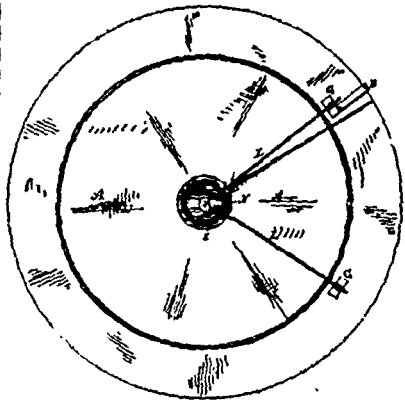
25314 Lippincott's Siphon Oil Can.



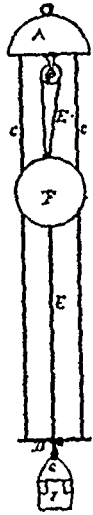
25315 Cox's Spring Link for Chains.



25317 Woolley's Railway Snow Car.



25318 Nye's Pot Cover.



25319 Kew's Machine for Holding Chalk for Billiard Table.

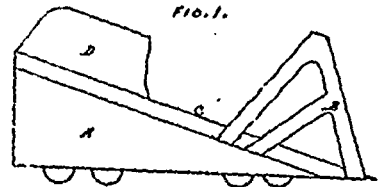
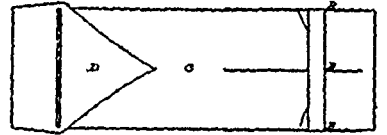
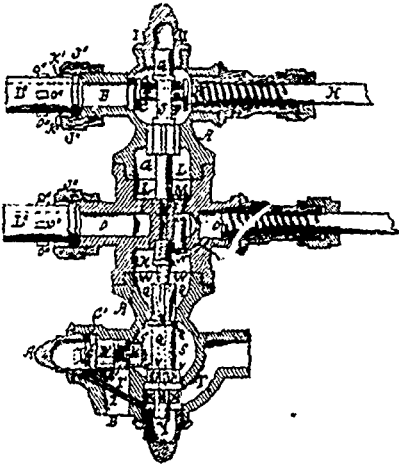


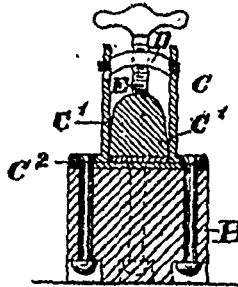
FIG. 1.



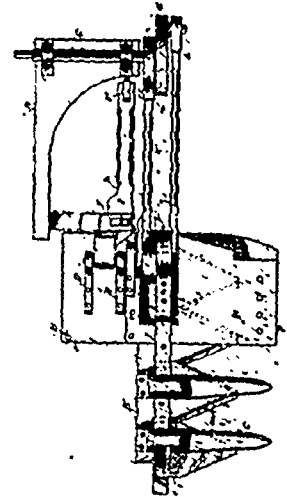
25320 Morningstar's Snow Plough.



25321 Schnelder, Trenkamp & Flammang's Injector.



25322 Seeley's Sleigh Shoe.



25323 Quilliam's Mowing Machine.

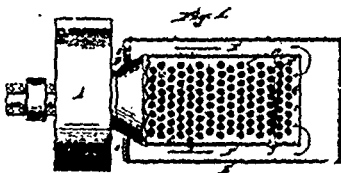


Fig. 1.

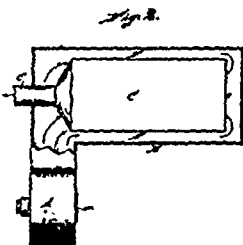
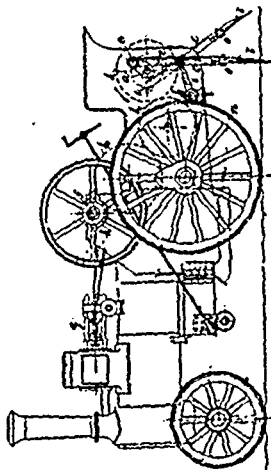


Fig. 2.

25324 Huyet's Heater and Fan Blower.



25325 Proctor's Machinery for Cultivating Land.

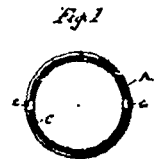


Fig. 1.

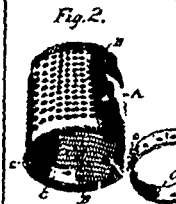


Fig. 2.

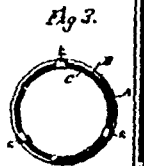


Fig. 3.



Fig. 4.

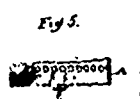
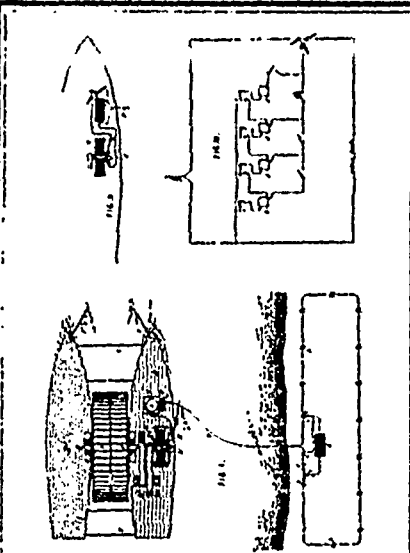
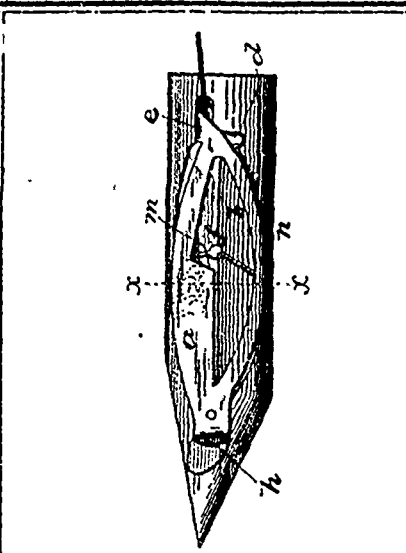


Fig. 5.

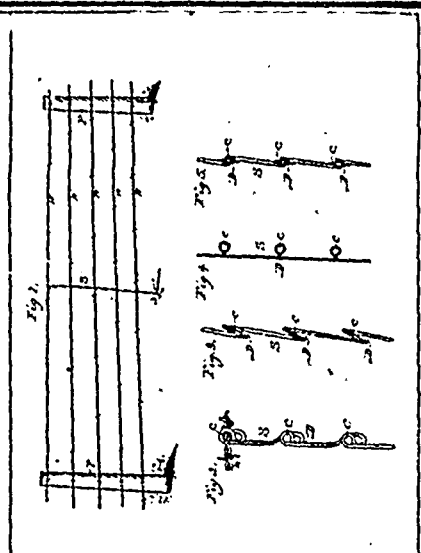
25326 Burnet's Wick Carrier.



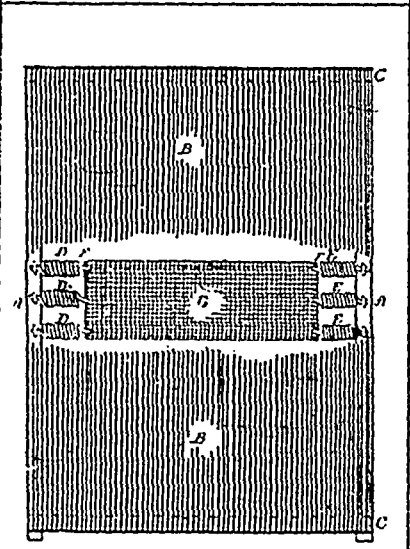
25327 Brady's Apparatus for Utilizing Water Power.



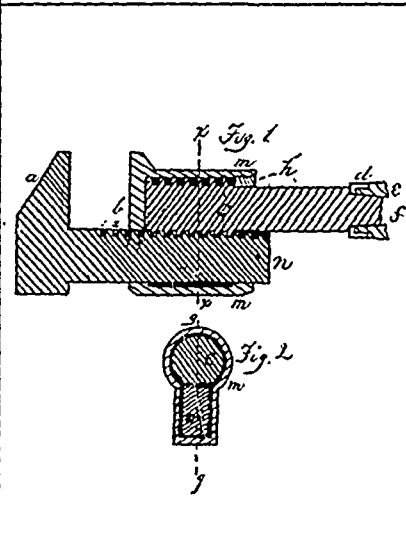
25328 Cheacy's Shuttle for Sewing Machines.



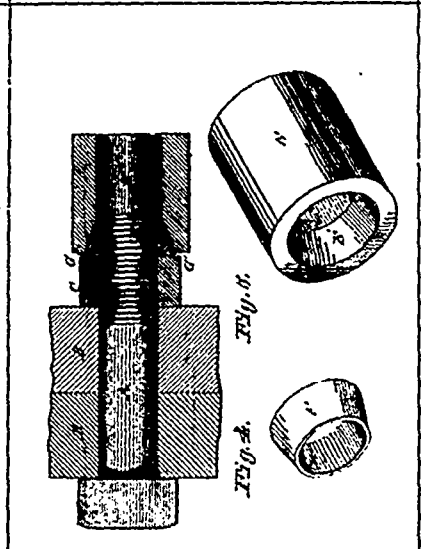
25329 Adam's Wire Fence Stay.



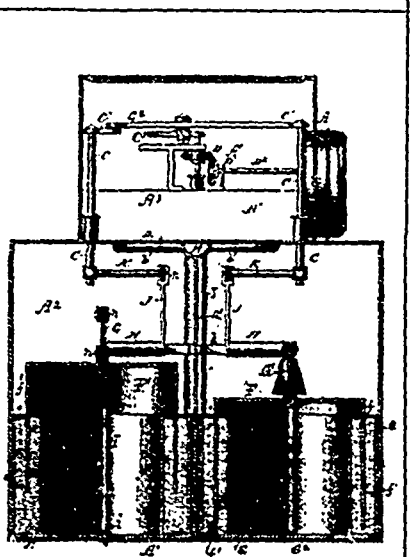
25330 Knowlton's Bed Bottom.



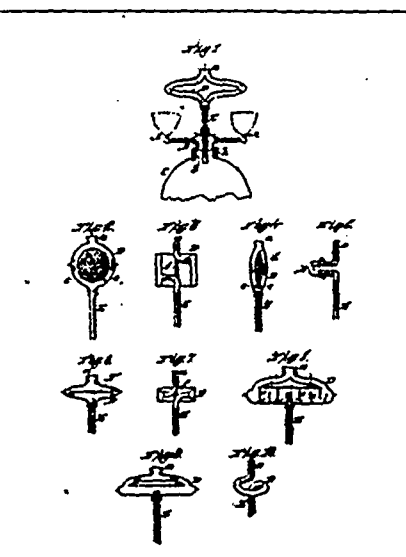
25331 Fairbank's Wrench.



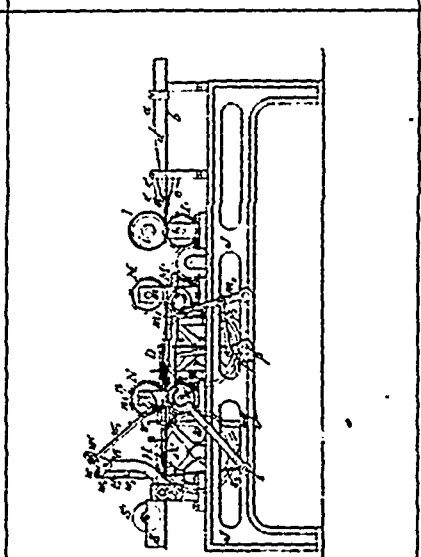
25332 Shellenberger's Nut Lock.



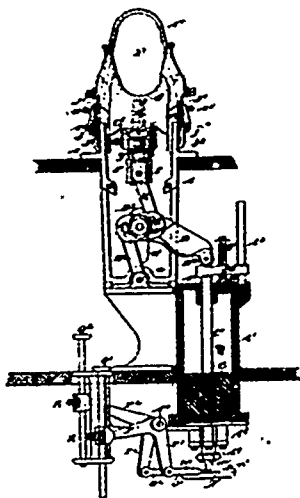
25333 Langlais & English's Gas Meter.



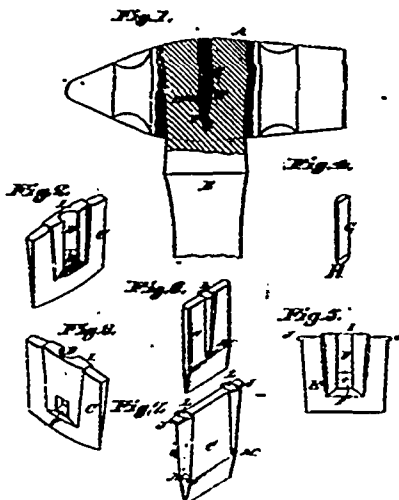
25334 Kidd's Carburetting Attachment for Gas Fixtures.



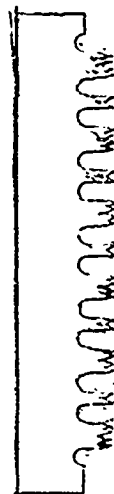
25335 Kilgour's Paper Bag Machinery.



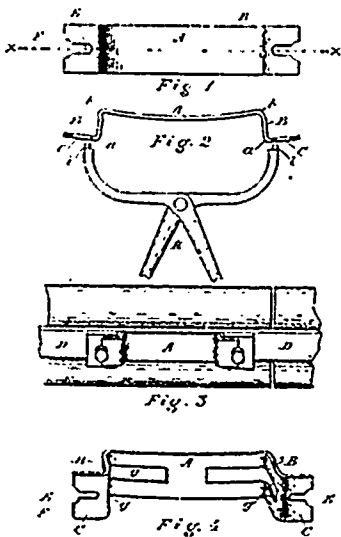
25336 Greeno's Steam Power for Bundling Wood.



25337 Grellner's Hammer.



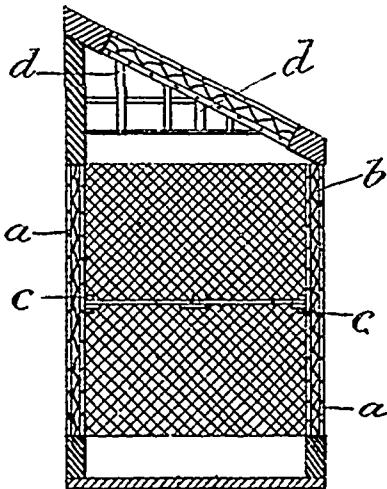
25338 Toles' Cross-Cut Saw.



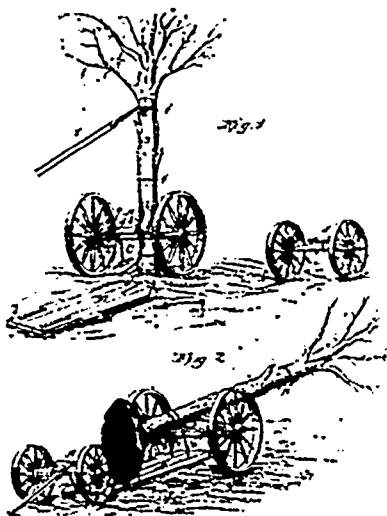
25339 Sylvester's Nut Lock.



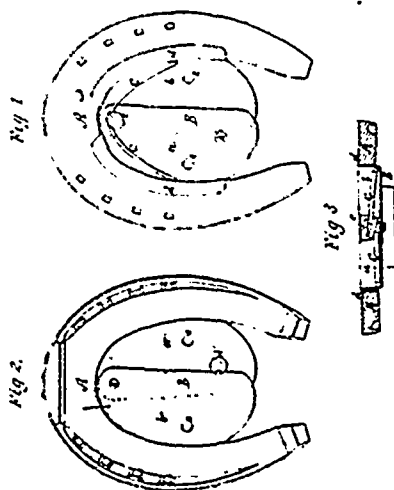
25340 Anderson's Running Gear for Vehicles.



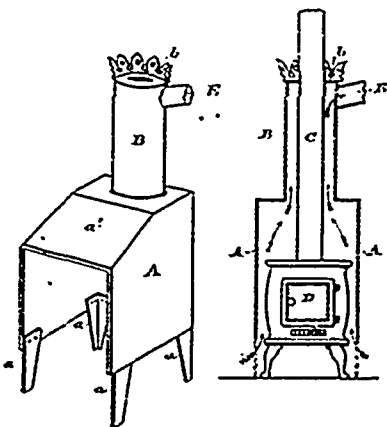
25341 Shaw's Meat Safe.



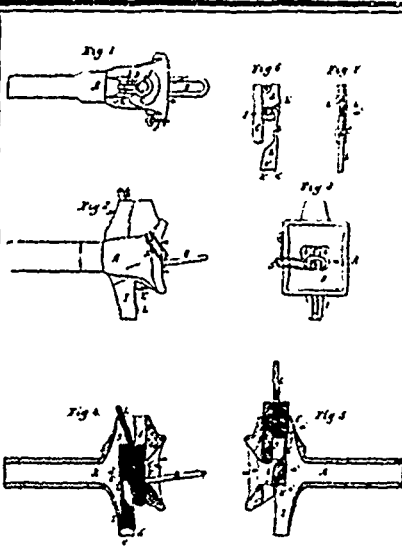
25342 Hall's Stump-Extractor.



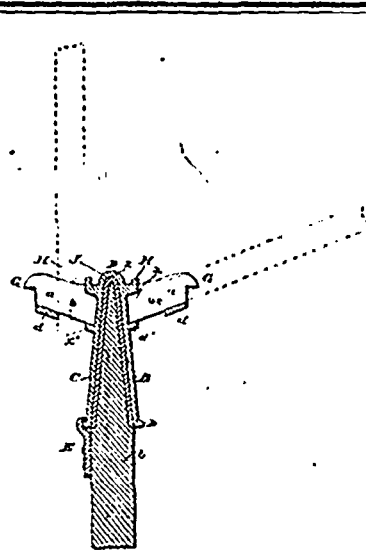
25343 Mulloy's Hoof Pad



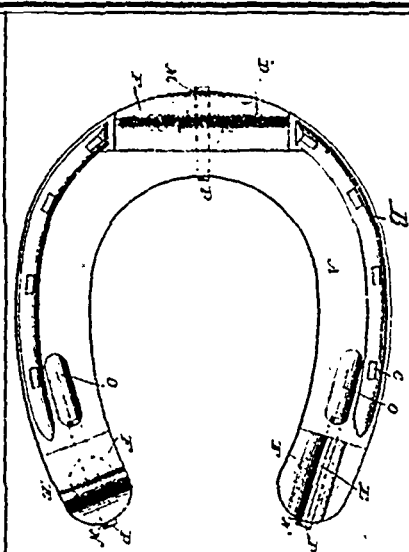
25344 Martin's Heating Drum for Stoves.



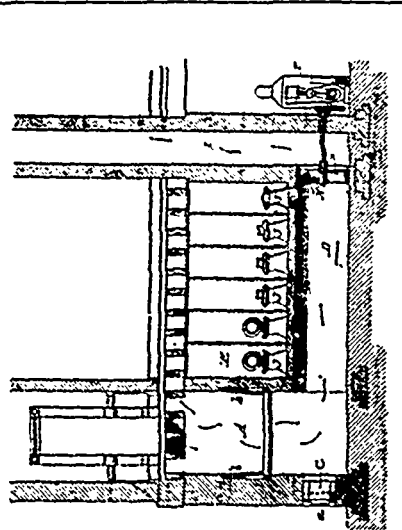
25345 Richards' Railway Car-Coupling.



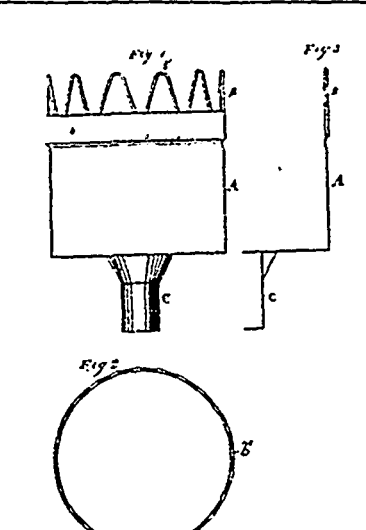
25346 Smith's Clothes Drier.



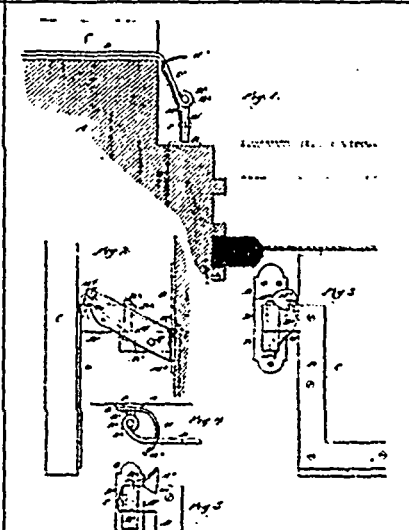
25347 Stevens' Horse Shoe.



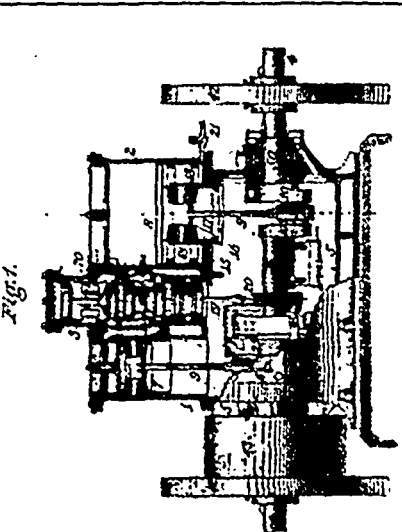
25348 Smead's Dry Closet.



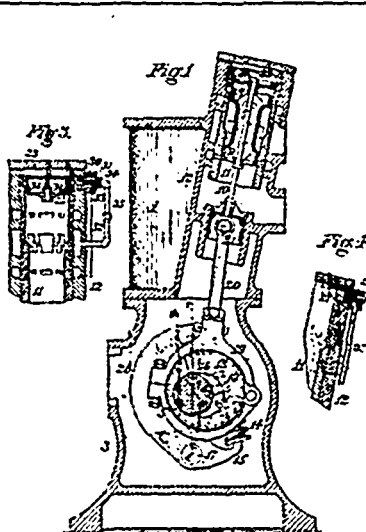
25349 Burgess' Fruit Picker.



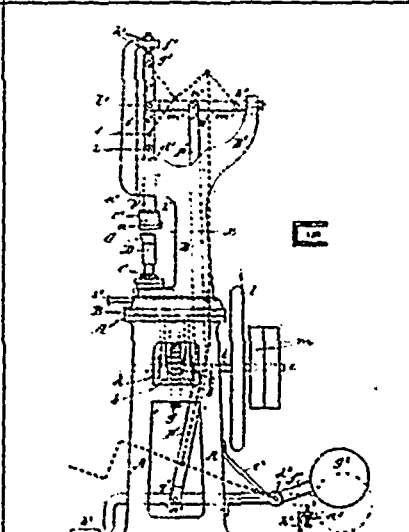
25350 Taylor's Lock Hinge.



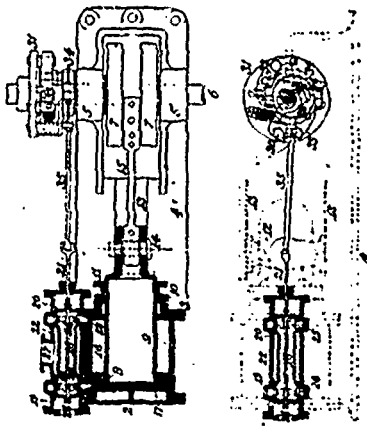
25351 Westinghouse's Steam Engine.



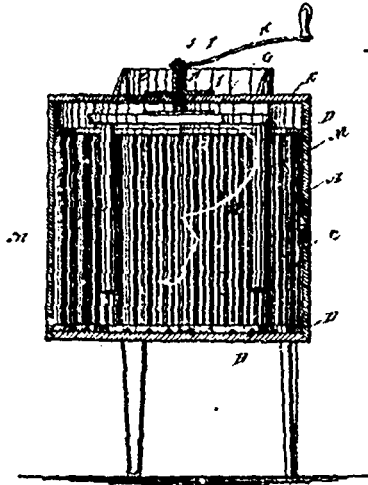
25352 Rite's Steam Engine Governor.



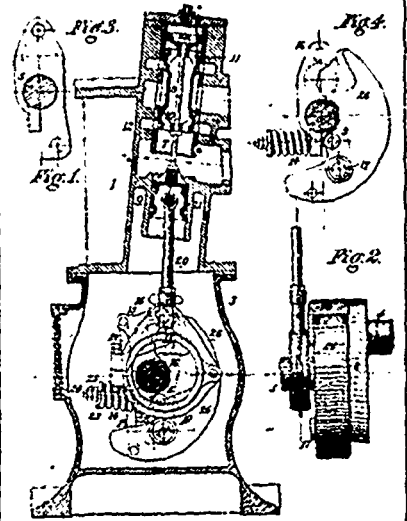
25353 Coto's Boot Nailing Machine.



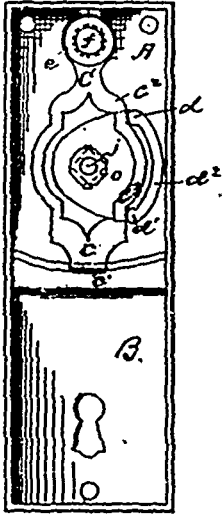
25364 Westinghouse's Steam Engine.



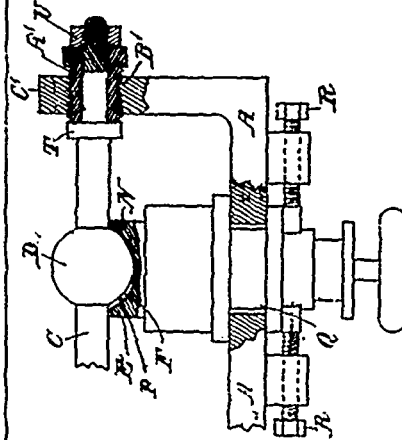
25355 Greiner's Washing Machine.



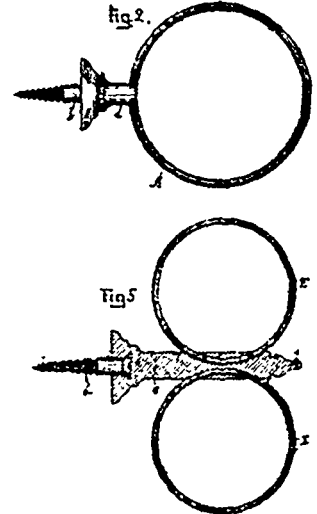
25356 Ritto's Steam Engine Governor.



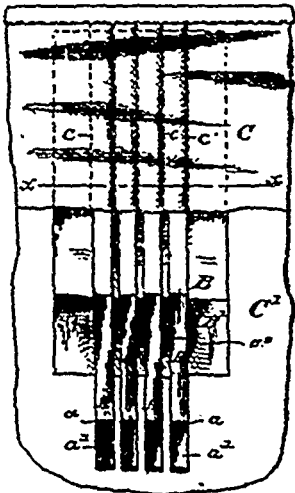
25357 Gilbert's Latch-Operative Device



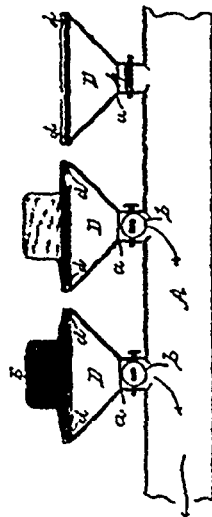
25358 Cole's Heel Counter Machine.



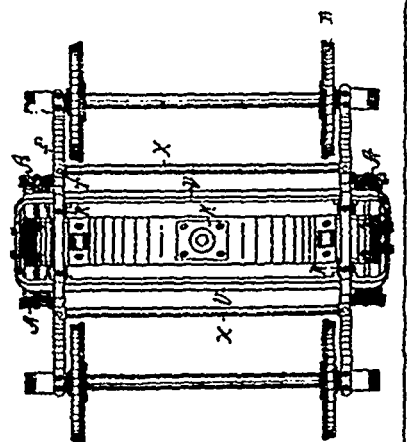
25359 Ulings' Umbrella Holder.



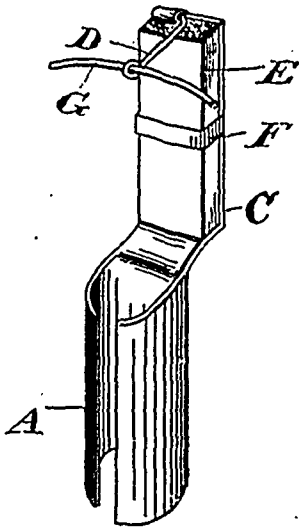
25850 Stone & Gardner's Corset.



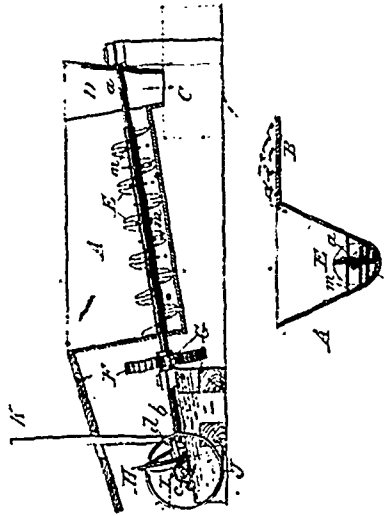
25351 Kendall's Apparatus for Drying Hats.



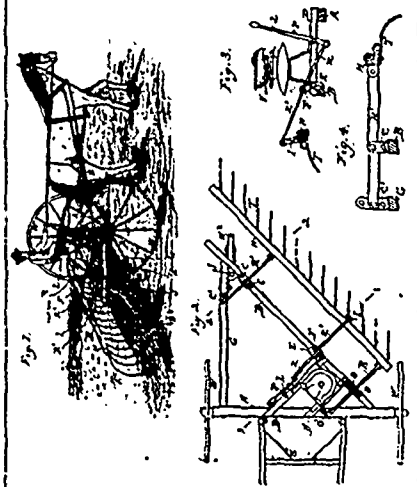
25352 Balnes' Car Truck.



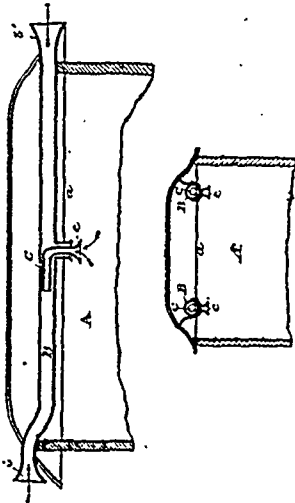
25363 Candler's Gas Burner.



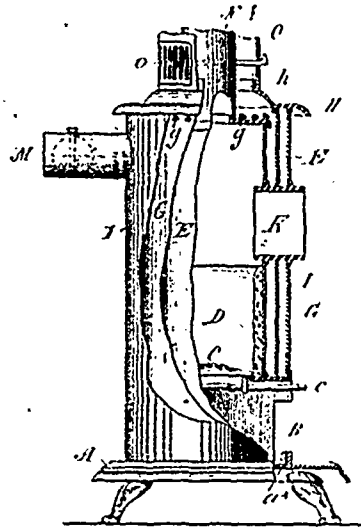
25364 Emen's Granulating and Feeding Device for Brick Machines.



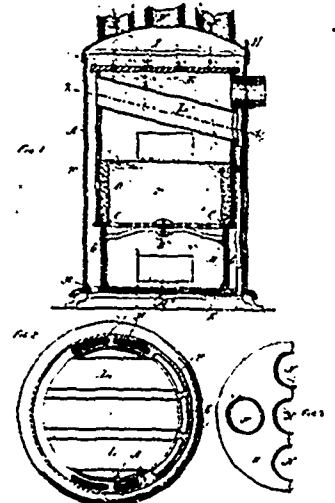
25365 McPherson's Horse Hay Rake.



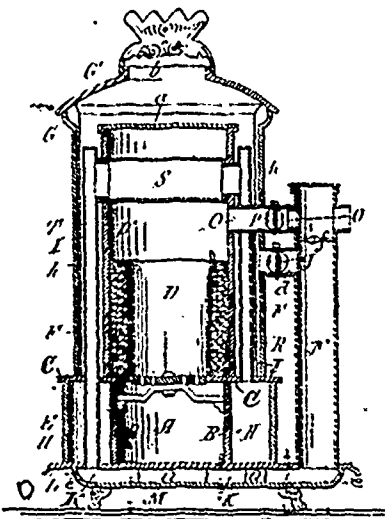
25366 Sproule's Car Ventilator.



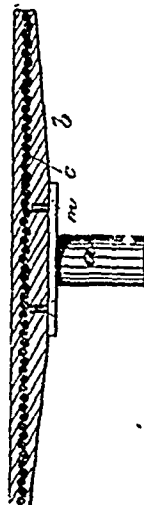
25367 Van Wormer's Heating Stove.



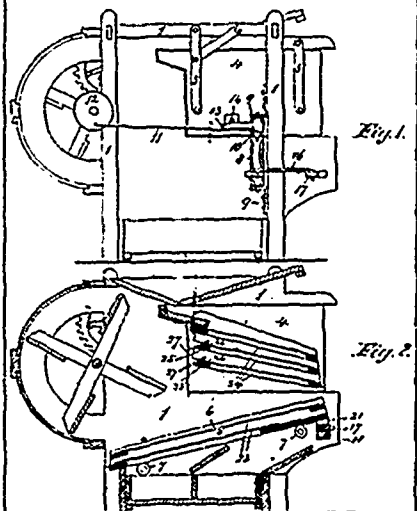
25368 Van Wormer's Heating Stove.



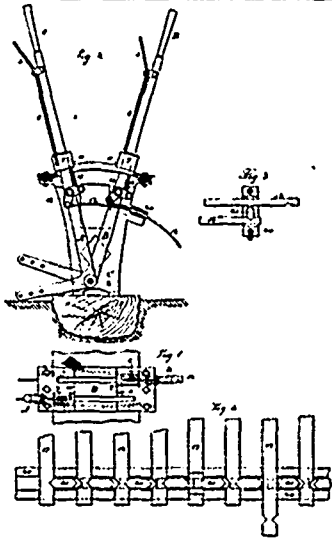
25369 Van Wormer's Heating Stove.



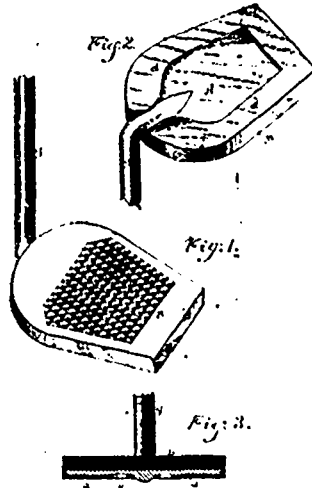
25370 Coursen's Mason's Hawk.



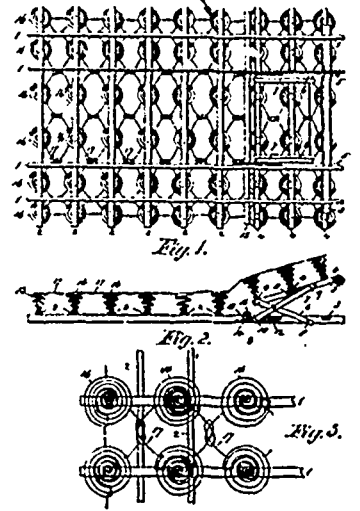
25371 Jackson's Panning Mill.



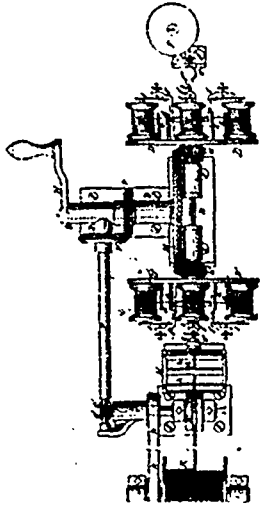
25372 May's Railway Switch and Signal Lock.



25373 Dickey's Carriage Step Pad.



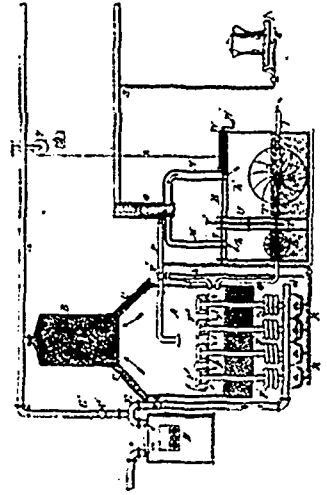
25374 Leighton's Spring Bed Bottom.



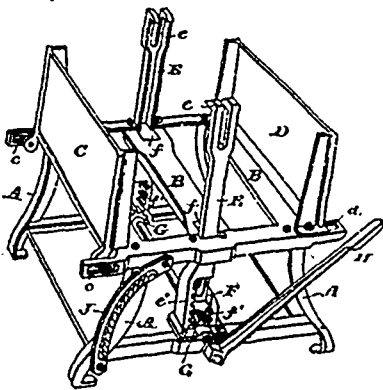
25375 Belk's Machine for Covering Wire, etc.



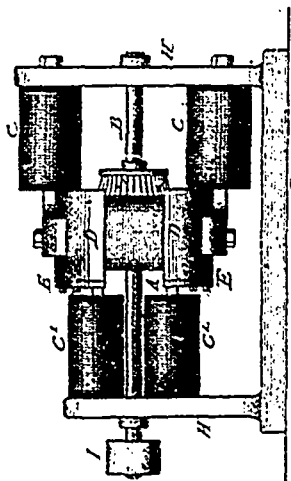
25376 Mansfield's Fire-Extinguisher.



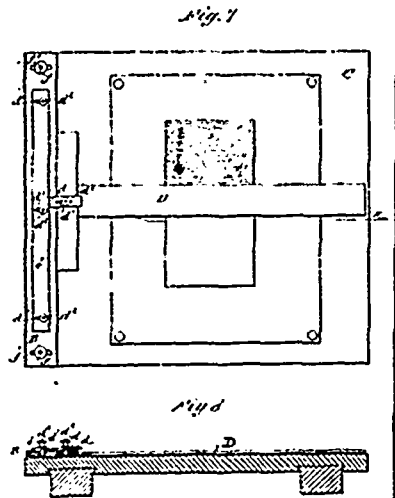
25377 Cottrell's Apparatus for Carburetted Gas and Air.



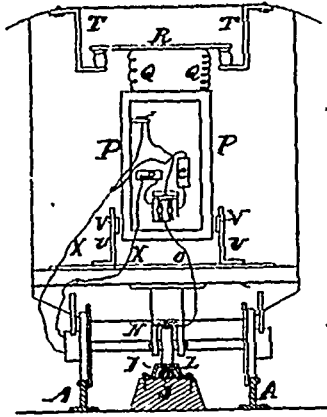
25378 House's Shingle Packer.



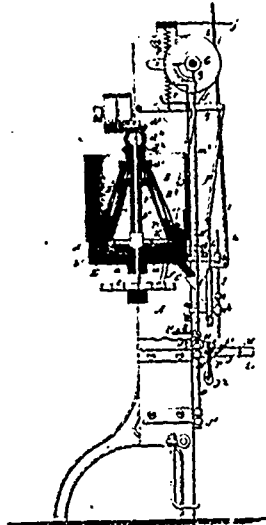
25379 Clark's Dynamo Electric Machine.



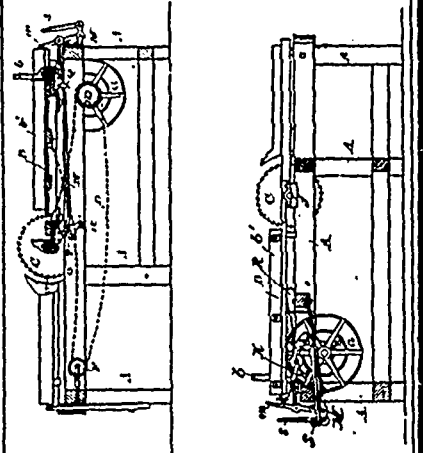
25380 Podgoraki's Scale Divider.



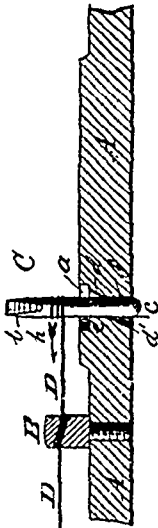
25381 Vogel's Railway Telegraphing and Telephoning.



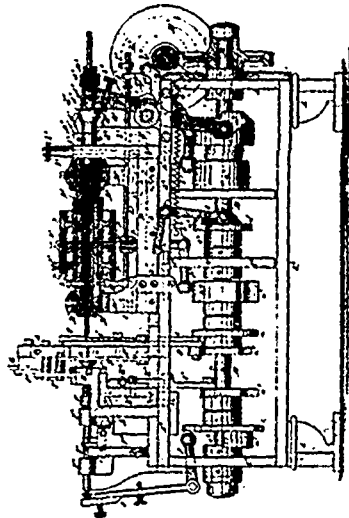
25382 Borgfeldt's Cigar-Bunching Machine.



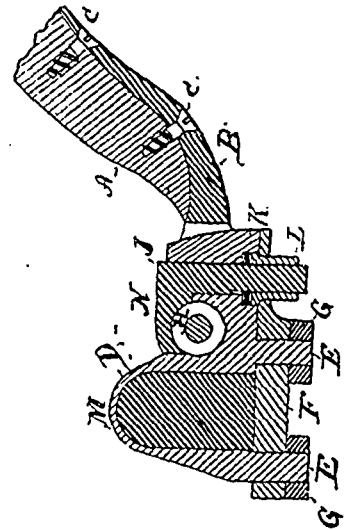
25383 House's Lath Holter.



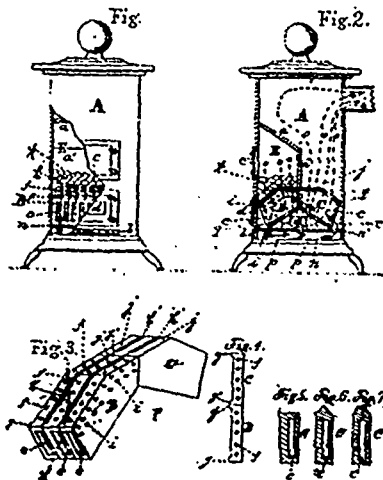
25384 Felldin's Device for Stretching Strings.



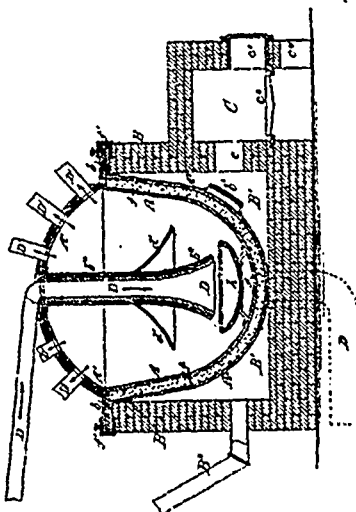
25385 Stehl's Metal Screw Machine.



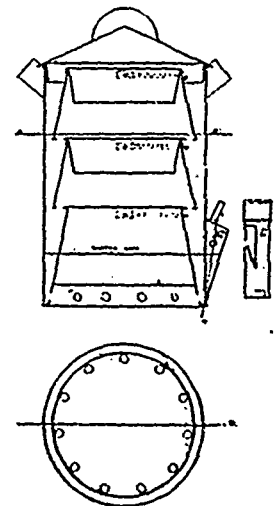
25386 Whitney's Car-Coupling.



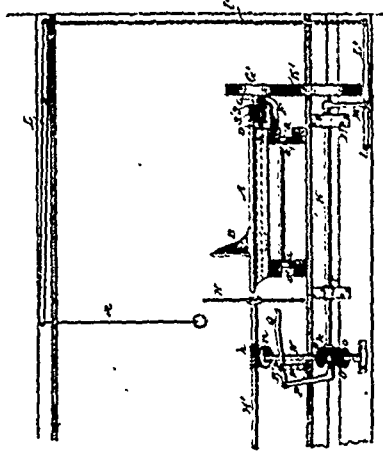
25387 Weston's Fuel Support for Stoves, etc.



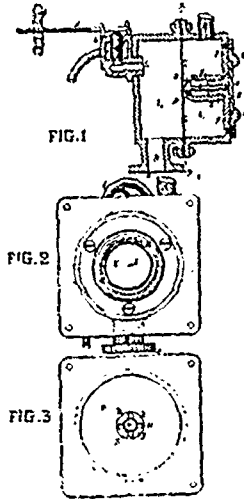
25388 Chesebrough's Hot Air Furnace.



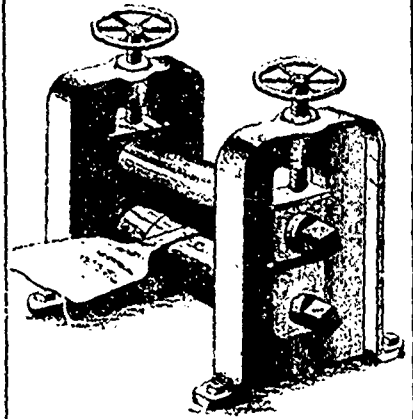
25389 Cameron's Steam Cooker.



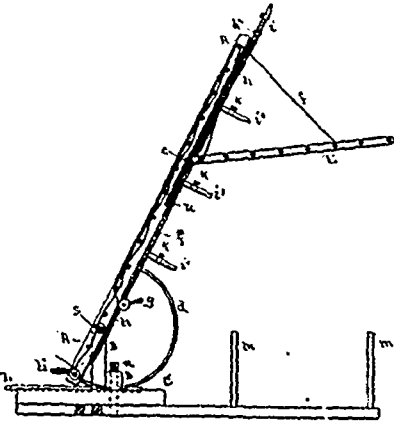
25390 Gleason's Saw Mill Carriage.



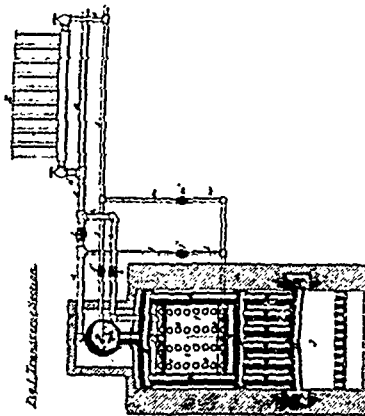
25391 Brouillet's Safety Joint for Steam Boilers.



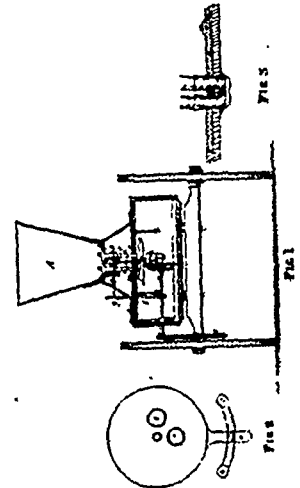
25392 Myer's Apparatus for Manufacturing Shovel Spades, etc.



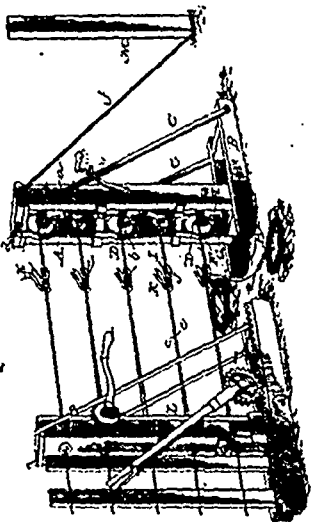
25393 Craig & Strachan's Extension Fire Ladder.



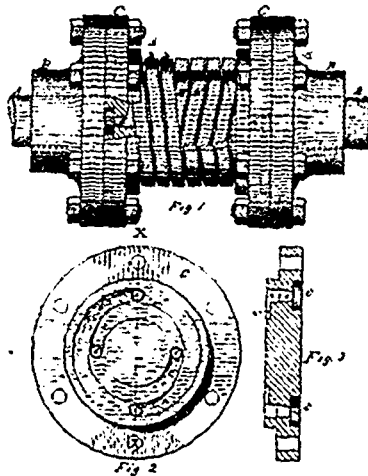
25394 Foreman's Steam Heating Apparatus.



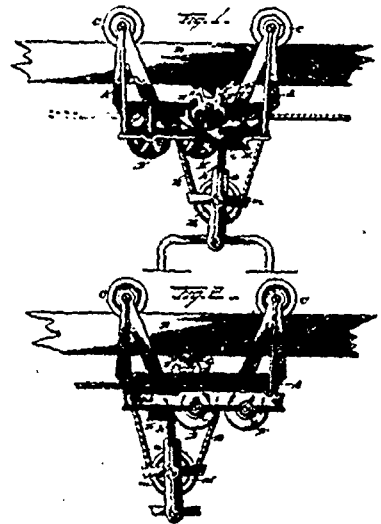
25395 McBride's Seeding Machine.



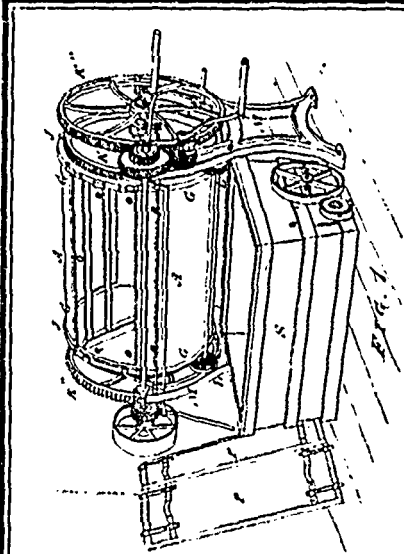
25396 Hanley's Tension Device for Fence Machines.



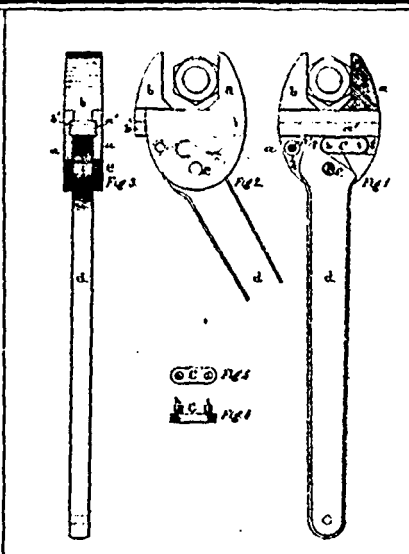
25397 Leaman's Shaft Coupling.



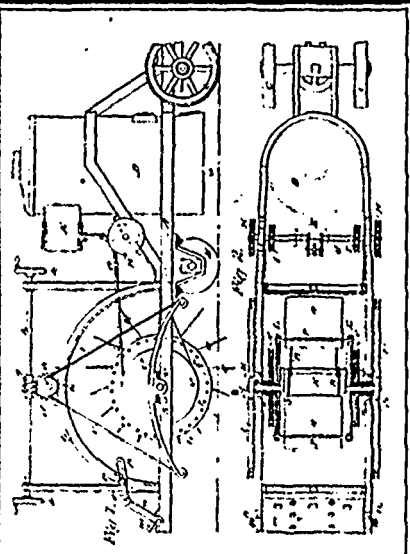
25398 Oborn's Hay Elevator.



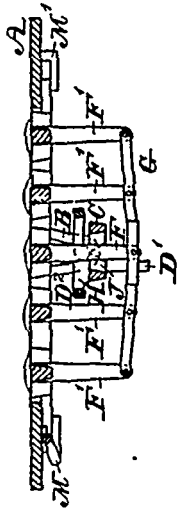
25399 Tourangeau's Mechanical Kneading Trough.



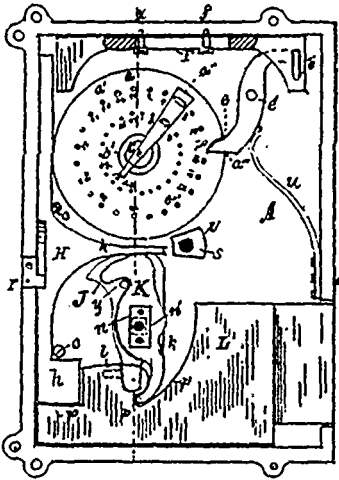
25400 Kruegermann's Wrench.



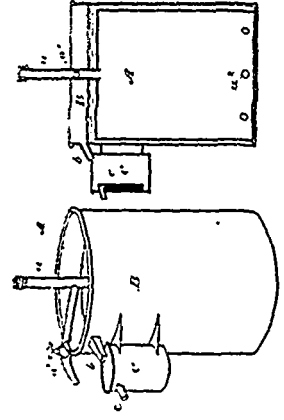
25401 Lay's Steam Plough.



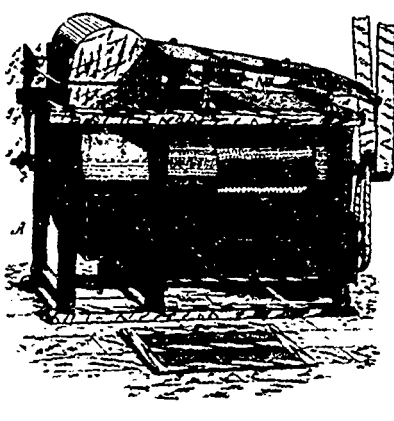
25402 Alston's Grate.



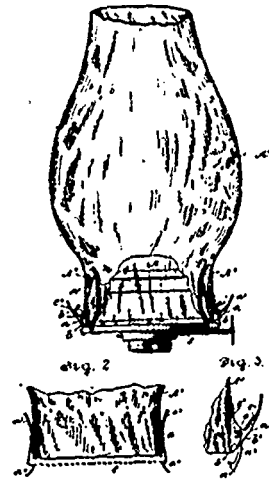
25404 Beggs & Coxey's Permutation Lock.



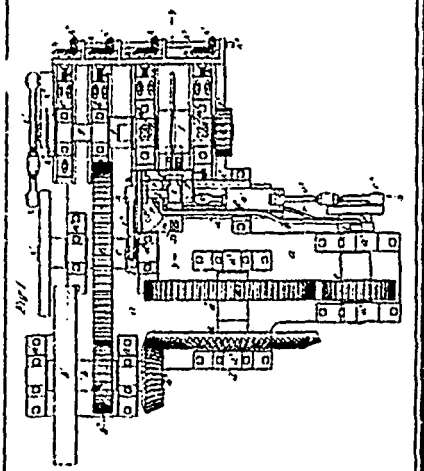
25405 Webster's Tank.



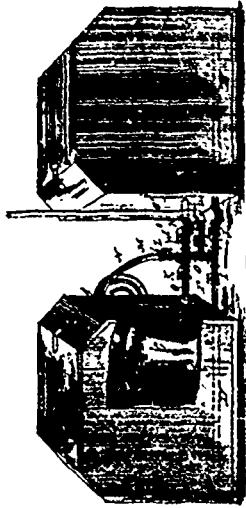
25406 Dawson's Grain Scouring Machine.



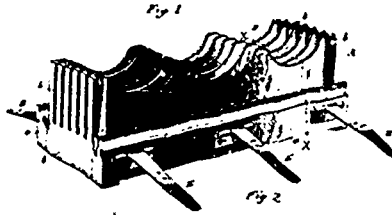
25407 Foster's Lamp Chimney Clutch.



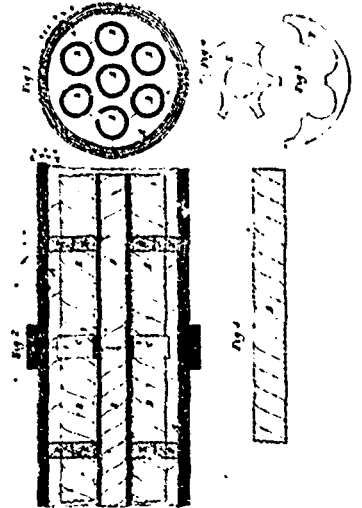
25408 Billings & Mueller's Horse Shoe Machine.



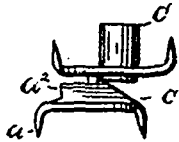
25409 Jamieson's Milk and Cream Radiator.



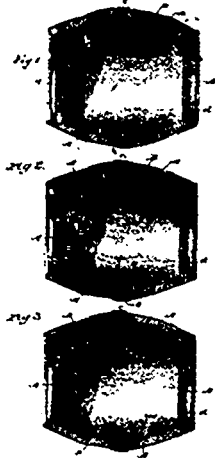
25410 Squires' Machine for Forming Flexible Articles.



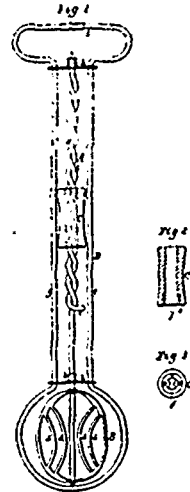
25412 MacFarlane's Subway for Electric Wires.



25413 Senteney's Shoe Fastener.



25414 Gillette's Keg and Barrel.



25415 Brown's Egg Beater.

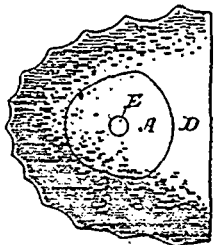


Fig. 1

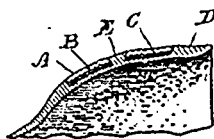
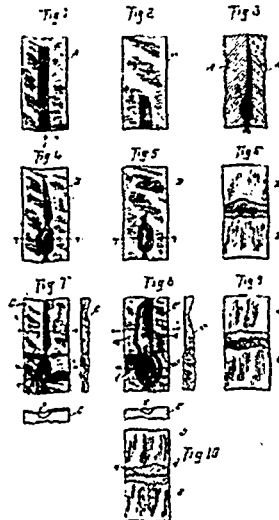
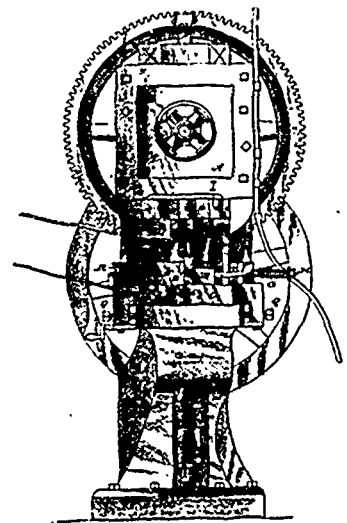


Fig. 2

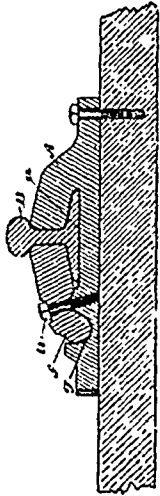
25416 Stackhouse's Suction Plate for Artificial Teeth.



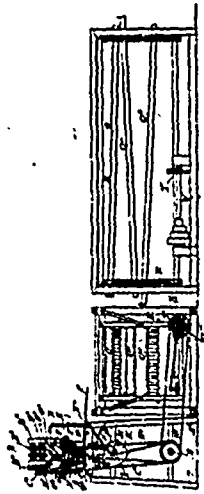
25417 Harris' Shears.



25418 Myer's Machine for Manufacturing Shovels, etc.



25419 Sintzenich's Railway Ball Chair.



25420 Snyder & Tester's Candy-Shaping Machine.



25421 Bennett's Waxed Ends.

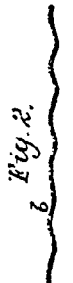
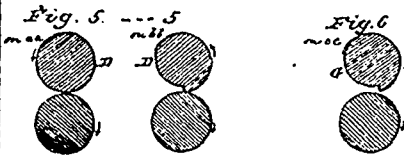
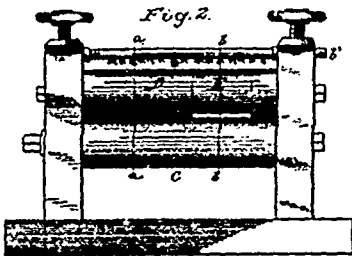


Fig. 2.



25422 Myers' Means for Making Shovels, etc.

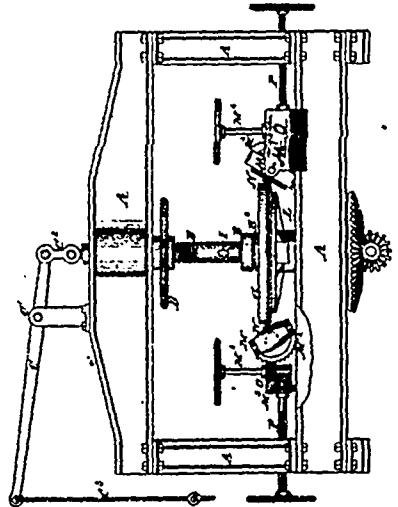


Fig. 1.

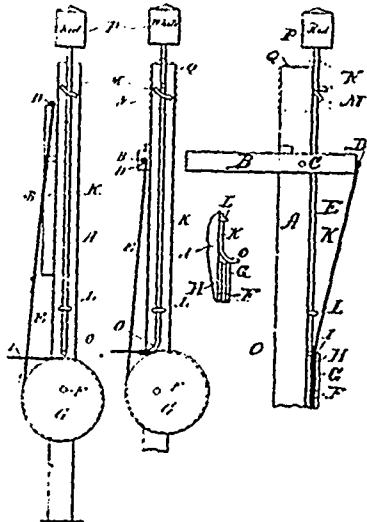


Fig. 2.

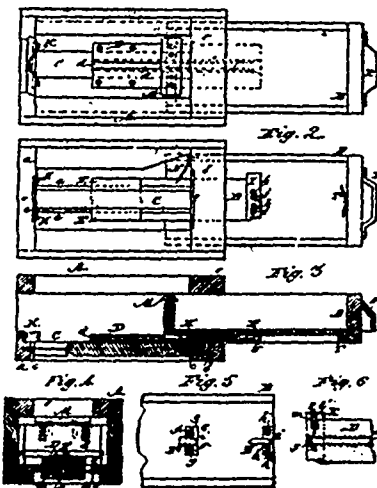
25423 Myers' Blank for Shovels, etc.



25424 O'Brien's Flanging Machine.



25425 Brien's Semaphore.



25426 Fraser's Drawer Check and Support.

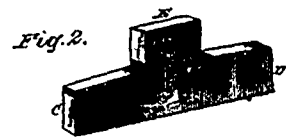


Fig. 2.

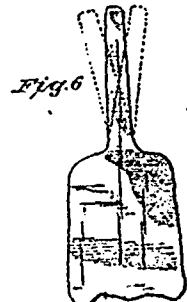
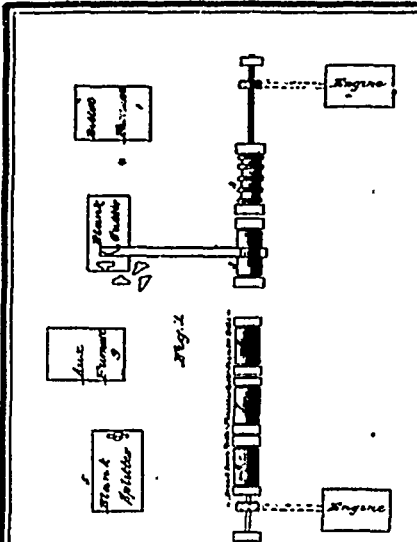


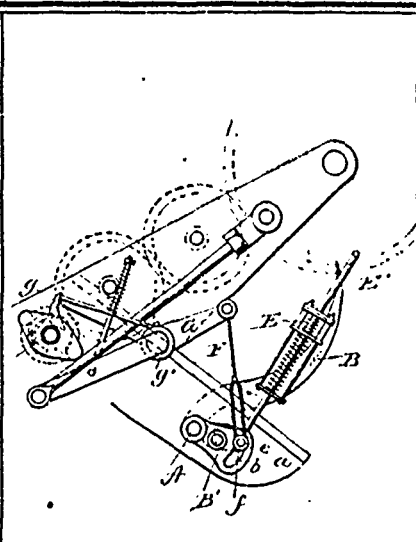
Fig. 6.

Fig. 9. Fig. 8.

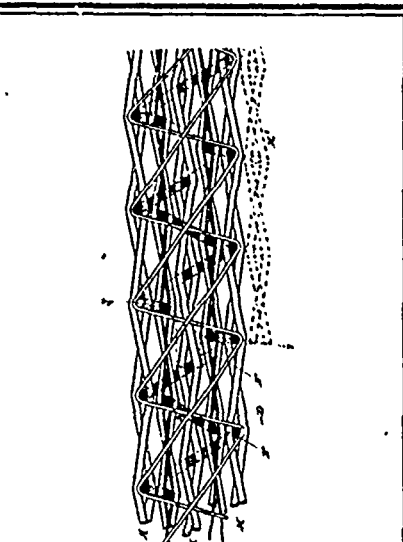
25427 Myers' Blank for Shovels, etc.



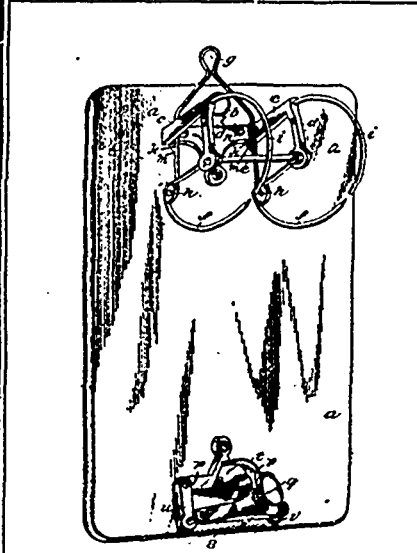
25428 Myers' Machine for Manufacturing Shovels, etc.



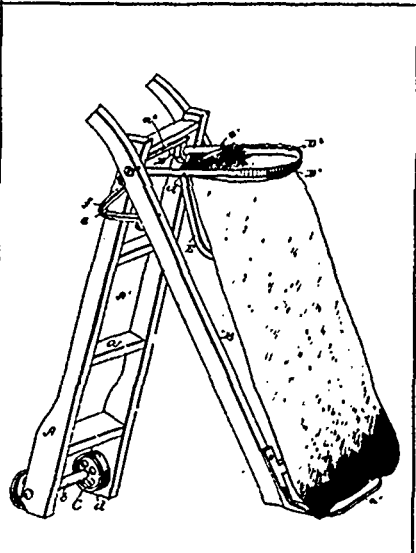
25429 Bullock's Grain Binder Attachment.



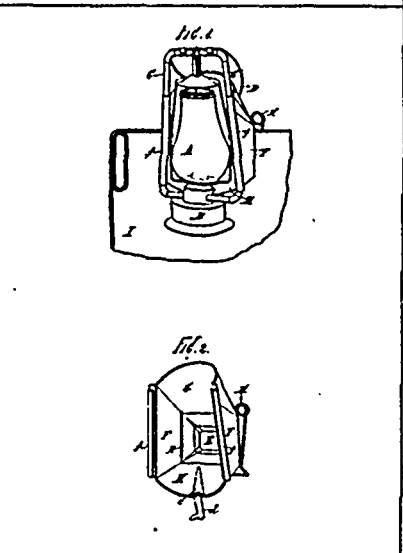
25430 Teter's Machine Bolting.



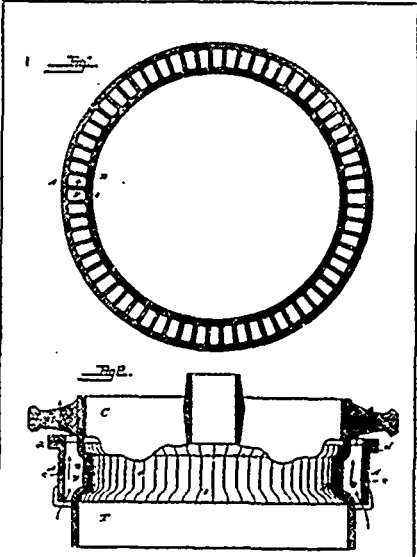
25231 Fish's Bill-File.



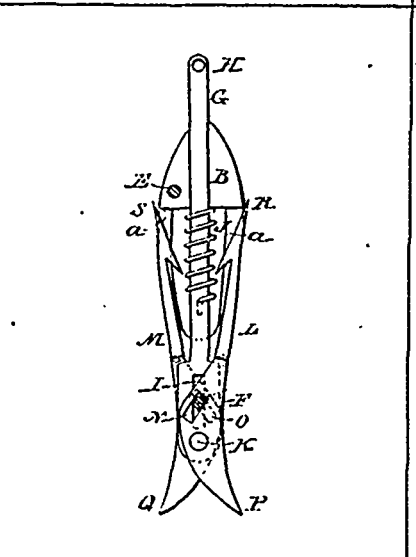
25432 Hill's Combined Truck and Stop Ladder.



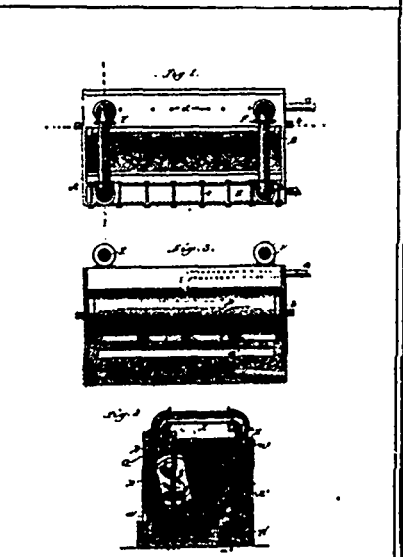
25433 Belts' Reflector and Dash-Board Attachment for Lanterns.



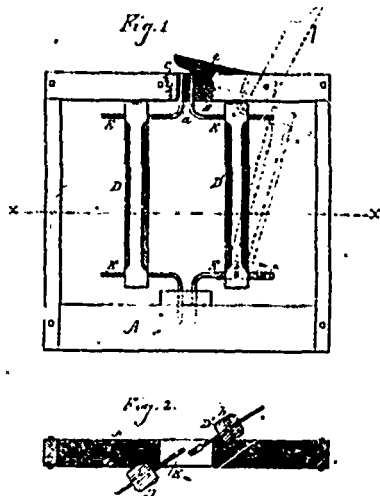
25434 Whitney's Chill for Casting Car Wheels.



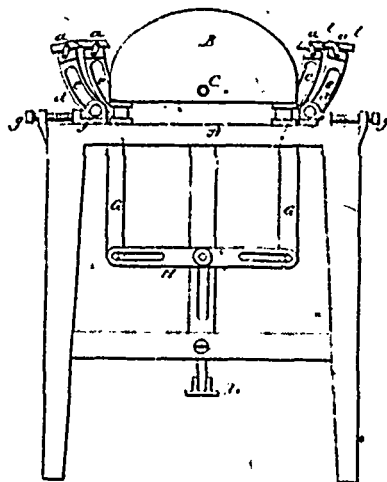
25436 Lie's Fish Hook.



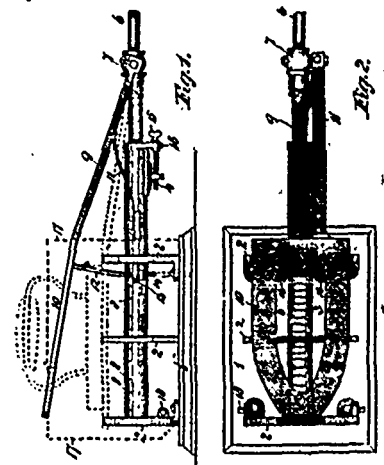
25437 Matyr's Petroleum Burner.



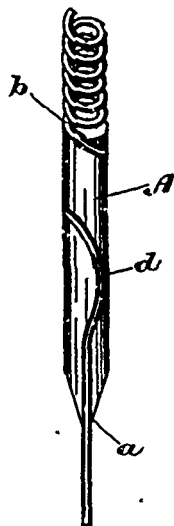
25438 Barber's Cattle Stanchions.



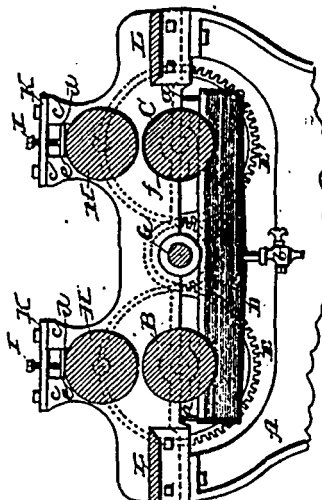
25439 Rosenberg's Corset-Shaping Machine.



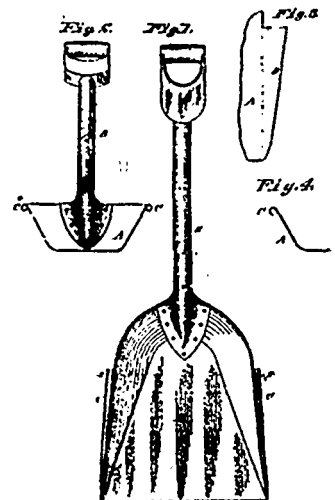
25440 Oldin's Galvaneator for Sad Irons.



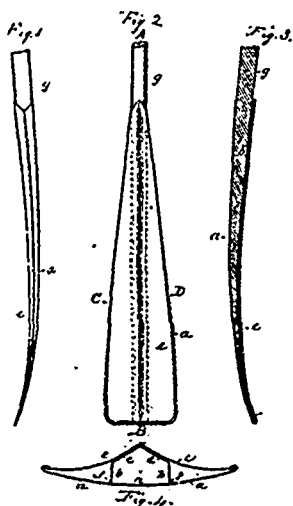
26441 Hart's Wire Collar.



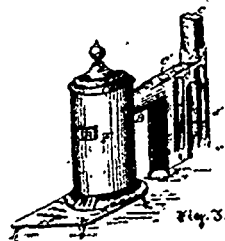
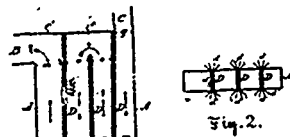
26442 Bochly's Staining Machine.



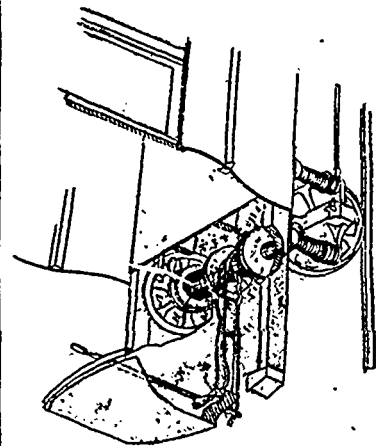
26443 Hynson's Safe Edge Scoop.



26444 Green's Oar, Scull or Sweep.



26445 Ryan's Heating Drum.



26447 Martin's Reacting Car Brake.