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INVENTIONS PATENTED.

No. 8686. Improvements on Wind Mills.

(*Perfectionnements aux moulins a vent.*)

Issac H. Palmer, Lodi, Wis., U.S., 25th April, 1878, for 5 years.

Claim.—1st. The wheel support consisting of the trunk C, provided with the friction rollers *c* and having attached to it the sleeve *b* and the plate B, and step *a* in combination; 2nd. The combination of the vanes *l* arranged in converging sets or groups, and attached to the pivoted bars *k*, the rods *n*, sleeve *o* and regulating spring *q*, 3rd. The combination of the bow springs Q with the vane regulating mechanism, 4th. The combination of the weighted arms *m* with the vanes *l* 5th. The combination of the curved forked lever *S* with the vane regulating mechanism.

No. 8687. Improvements on Churns.

(*Perfectionnements aux barattes.*)

Samuel Bair, Spencerville, Ind., U. S., 25th April, 1878, for 5 years.

Claim.—The combination of the concentric frames carrying thin blades driven edgewise, the outer ones being slightly inclined to induce circulation, in combination with mechanism, for causing their rapid rotation.

No. 8688. Improvements on Picture Exhibitors.

(*Perfectionnements aux porte-images.*)

Oliver Williamson, Covington, Ohio, U.S., 25th April, 1878, for 5 years.

Claim.—The cabinet or case A, provided with openings *a a* in combination with the mat *d* and the mat holders *c c*, provided with the handles *b b*.

No. 8689. Improvement in Pruning Knives.

(*Perfectionnement aux sécateurs.*)

Justus Smith, Hamilton, Ont., 25th April, 1878, for 5 years.

Claim.—The combination of the handle A, hook C, knife D, saw B, lever E and connecting rod G.

No. 8690. Improvements on Thill Couplings.

(*Perfectionnements aux armons des limonieres.*)

Benjamin P. Morrison, Abingdon, Virginia, U. S., 25th April, 1878, for 5 years.

Claim.—1st. The combination of the hook B and pin F with the clip bolt E, having the flat portion, and pivoted eccentrically in the ears C 2nd. The combination of the hook B, with the clip bolt E, having the flat portion and pivoted eccentrically in the ears C.

No. 8691. Improvements on Saw Guides.

(*Perfectionnements aux guide-scies.*)

Francis Clark, Springfield, Mo., U. S., 25th April, 1878, for 5 years.

Claim.—1st. A saw guide self adjusting when in operation and pivoted or hung at the front with its axis in the plane of the saw-slit so that the axis around which the guide moves, in adjusting itself when in use on a machine, will be coincident with or near the line of the front of the saw blade; 2nd. The combination of the holder, having slotted and annularly grooved jaws, and the guide provided at the front, with segmental journals adapted to, and turning in the annular grooves of the said jaws.

No. 8692. Improvements on Furnaces.

(*Perfectionnements aux caloriferes.*)

Cornelius Ryan, Montreal, Que., 25th April, 1878, for 5 years.

Claim.—The combination of the upper half of the fire-pot B, having water space I, inlet pipe E and outlet pipe F, with the lower half H.

No. 8693. Improvements in Marking Pots.

(*Perfectionnements dans les pots a marquer.*)

William H. Rodden, Toronto, Ont., 25th April, 1878, for 5 years.

Claim.—1st. The mouth tube C, 2nd. The ring or thumble D and 3, the device F, for hinging the stopper E, in combination with the improved marking pot.

No. 8694. Improvement in Buggy Tops.

(*Perfectionnement dans les soufflets des voitures.*)

Peter H. Lindsey, Lockport, N. Y., U. S., 25th April, 1878, for 5 years.

Claim.—1st. The movable part A, in combination with the bows *d d*; 2nd. The movable part A, in combination with the bolt E, rubber spring *h* and thumb nut *i*, 3rd. The piece D holes *c c c*, in combination with the movable part A and stud *g*, 4th. The rubber spring *h*, in combination with the parts A D and bolt E, 5th. The piece D, in combination with the rubber spring *h* and bolt E.

No. 8695. Apparatus for Rescuing Goods from Fire.

(*Appareil a sauver des effets de l'incendu.*)

George W. Staker, Monroe, Iowa, U.S., 25th April, 1878, for 5 years.

Claim.—1st. The truck A, in combination with the folding shelving B C and the door E, having spring catch or lock *e*, 2nd. The combination of the inclined track G, truck A, having folding shelving B C E, upright I, hooks *s k* and staples *h h*, the latter arranged upon shelving C, and door E, respectively.

No. 8696. Blind Stile Boring and Mortising Machine.

(*Machine a percer et mortaiser les bois de persiennes.*)

William H. Doane and George W. Bugbee, Cincinnati, Ohio, U. S., 25th April, 1878, for 5 years.

Claim.—1st. Endwise moving cutter spindle which is pivoted at one end in order that it may also be vibrated to move the cutters at its other end to and fro in mortising, 2nd. The combination of the pivoted cutter spindle, the vertically moving bearing block for the lower pivoted end thereof and the journal box near its upper end adapted to be reciprocated horizontally, 3rd. The combination of the cutter spindle, the vertically moving bearing block for the lower end, and the journal box near its upper end adapted to be reciprocated horizontally, and the guide block which determines the line of motion of the said journal box when reciprocated, 4th. The combination of the cutter spindle, the vertically moving bearing block for the lower end thereof, the journal box near its upper end, the guide block which determines the line of motion of the said journal box when reciprocated, and a mechanism of the character described, adapted to either hold the said journal in a fixed position, or to reciprocate it according as it is desired to bore or to mortise the stile, 5th. The combination of the cutter spindle the vertically moving bearing block for the lower end thereof, the journal box near its upper end, the guide block which determines the line of motion of the said journal box when reciprocated, the lever operated upon by an adjustable crank pin adapted to either hold said lever in a fixed position or to vibrate it, and a connecting rod which connects said lever to said journal box, 6th. The combination of the pair of cutter spindles, the journal boxes for the tool carrying ends thereof, the T-lever whose center stern is operated upon by an adjustable crank pin adapted to either hold said lever in a fixed position or to vibrate it and the rods which connect the limbs of the T-lever to the said journal boxes, and move the latter in opposite directions when the T-lever is vibrated, 7th. The combination of the bed, the presser bar the lever and slide bars for supporting the presser bar, and the cam and spring acting adversely on said lever, 8th. The duplex clamp composed of a yoke, carrying two pairs of spring tongs, and an adjustable wedge frame for simultaneously closing said pairs of tongs, 9th. The combination of the feed bar and the duplex clamp, 10th. The combination of the feed bar a clamp for securing a stile thereto the side guide of the stile, and the friction lever for pressing on the stile, 11th. The combination of the cutter spindle, the bearing block or the lower end thereof, the adjustable lifter rod and lifting cam.

No. 8697. Improvements on Circular Saws.

(*Perfectionnements aux scies circulaires.*)

Donald B. McRae, Bay, Mich., U. S., 25th April, 1878, for 5 years.

Claim.—1st. The toothed ring B or B' attached to a centro disc or body-plate A of not greater thickness than the toothed ring; 2nd. A saw com-

posed of a toothed ring and a centre body disc, attached as described, in which the disc is made thick at the center as the ring, and diminishes in thickness therefrom to the ring.

No. 8698. Improvements on Car-Couplers.
(*Perfectionnements aux attelages de wagons.*)

James F. McCoy and Alphonso Tyler, Ayer's Flat, Que., 29th April, 1878, for 5 years.

Claim.—1st The inclined plane O, provided with a friction-roller N, and having handles P; 2nd. The inclined plane O, provided with sliding base R, and projection X3, having notched-groove bar on its underside; 3rd. In combination with the car coupler, the automatic uncoupling bar E, having shoulder X2 and spring S, 4th The coupling block F, having friction roller N, uncoupling bar J and uncoupling rod V.

No. 8699. Improvements on Reservoirs.
(*Perfectionnements aux réservoirs.*)

Godfrey Moreau, Victoriaville, Que., 30th April, 1878, for 5 years.

Claim.—The reservoir or tank A, having a filtering apparatus C, at one or both ends, and furnished with feed pipe E and waste pipe F, in combination with the eaves trough B, having conducting pipes D.

No. 8700. Improvements in Harness Bearers.
(*Perfectionnements dans les barres des harnais.*)

Joseph N. Collin and George W. Bond, Biddeford, Me., U. S., 30th April, 1878, for 5 years.

Claim.—1st. A bearer for harness formed of the plate A and loop or keep B, cast in one piece, and having a buckle C and fastener D, cast upon the ends of the said plate A, 2nd. The fastener D, of the harness-bearers A B C D, made with a shoulder or off-set, recessed to receive the end of the street-leather, and with a slot to receive a piece of leather for the stitches to pass through in sewing the said fastener in place.

No. 8701. Process of, and Apparatus for Making Bread.
(*Procédé et appareil pour faire le pain.*)

James Wylie, Bowmanville, Ont., 30th April, 1878, for 5 years.

Claim.—Baking the dough in close cases, or pans of a cylindrical, rectangular or any other desired section, provided with detachable end caps.

No. 8702. Improvements on Drying Kilns.
(*Perfectionnements aux fourneaux de dessiccation.*)

Ernest T. Genert, New York, U. S., 30th April, 1878, for 5 years.

Claim.—1st. A furnace in a drying kiln, covered with heat conducting plates D, halved to each other at their adjacent edges, to admit of their free expansion and contraction, 2nd. The combination of the furnace C, the heating plates D and the air heating pipe H, with the kiln A, and the grate B, 3rd The combination of the angular plates J with the furnace C, the heating plates D, the air heating pipe H, the kiln A and the grate B.

No. 8703. Method of Preserving Cured Fish and Potatoes together.
(*Méthode de conservation du poisson mariné et des patates mélangées.*)

Shebnah Rich, Boston, Mass., U. S., 30th April, 1878, for 10 years.

Claim.—1st. Washing the fish in tepid water and cleaning it of superfluous salt and other impurities, then reducing it to pulp, then mixing it with cooked hashed potatoes and raw chopped onions, tallow, condiments and saltpetre in the proportions specified, and then, while warm, sealing the compound hermetically in cans and boiling as described.

No. 8704. Improvements on Pumps.
(*Perfectionnements aux pompes.*)

Frederick Watkins and Charles Watkins, Woodstock, Ont., 30th April, 1878, for 5 years.

Claim.—1st The toggle jointed bars J K, in combination with lever H, pump rod E, and standard I, 2nd. The combination of the lever H, toggle bars J K, pump rod E and standard I; 3rd. The plunger M, extending above and below the discharge spout G, on the pump rod E, and operating by displacement of the water to cause it to rise and flow at the descent of the pump rod.

No. 8705. Improvements on Grain Raking and Grain Binding Machinery.
(*Perfectionnements aux machines à râtelier et à lier le grain.*)

Moses A. Keller, Fremont, Ohio, U. S., 30th April, 1878, for 5 years.

Claim.—1st. An intermittently revolving gatherer for elevating the grain from the ground; 2nd. The intermittently revolving gatherer B B having two or more rows of gathering teeth, 3rd. The intermittently revolving gatherer having its gathering teeth pivoted, 4th. The combination with an intermittently revolving gatherer, the cambeads F, 5th. The combination with an intermittently revolving gatherer, the automatic stop G3 or its equivalent, 6th The combination with an intermittently revolving gatherer, the shifter N4, or its equivalent thereof, 7th. The shifter N6, 8th. The combination with an intermittently revolving gatherer, the disc wheel P3, or its equivalent; 9th. The arrangement of the cog gears M and M2, in combination with an intermittently revolving gatherer, 10th. The combination with an intermittently revolving gatherer, the knot tying mechanism, 11th. The stationary binding mechanism, in combination with an intermittently revolving gatherer, 12th. The binding mechanism secured to the axis of the revolving gatherer; 13th. The tubular axis or shafts D2, in combination with an intermittently revolving gatherer; 14th. The fenders R, or their equivalent; 15th. The supporting fingers K K K, or their equivalent; 16th. The combination with an elevating device, the supporting fingers K K K, 17th. The combination with a vibrating binding or cord carrying arm A, the supporting fingers K K K, 18th. In an automatic grain binding machine, the

oscillating segment and cam P; 19th. In an automatic grain binding machine, the slotted connecting rod E; 20th. The binding mechanism, secured to the axis of the elevating device and a secondary shaft B h, or its equivalent, for transmitting power to the binding mechanism, 21st. In an automatic knot tying mechanism for automatically binding grain, the combination of the looper A y, intermittently stationary revolving recessed hooked-head A d, reciprocating grippers A b, 22nd. In an automatic knot tying mechanism for binding grain, the reciprocating grippers; 23rd. In an automatic knot tying mechanism, the combination with the reciprocating gripper, the angular cam A k and roller A e to reciprocate the grippers, 24th. The construction of the grippers A b; 25th. The automatic switches A u and A v, 26th The reciprocating cord cutter and holder A f, 27th The yielding cord holder B d; 28th. The rack bar A m, constructed to operate the cog wheel A l, 29th The slot A w of binding shuttle for admitting the end of the cord carrying arm.

No. 8706. Improvements on Churns.
(*Perfectionnements aux barattes.*)

Francis J. T. Dixon, St. Alphonse, Que., 30th April, 1878, for 5 years.

Claim.—1st. A machine driven by the motive power of a horse or other animal, travelling in a circular track where a friction roller or wheel is adapted to work on said track, and convey the motion thus generated by suitable mechanism to a central upright shaft; 2nd. The combination of a friction roller or wheel e, working on a circular track B B, with the arm F propelled by a horse or other animal, the shaft E, crank or wrist plate a, pitman or connecting rod b, the sliding rod D passing through the centre of the main upright axle C, with joint g h and working beam G.

No. 8707. Improvements on Furnaces.
(*Perfectionnements aux calorifères.*)

William E. Henderson, Winona, Minn., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The improved hot air furnace composed of a stove, a central vertical and hollow-head, with interior horizontal diaphragm, two groups or sets of tubes or flues connecting said centre head with front and rear heads, and arranged in alignment; 2nd The centre head G G1, cast in two parts with the horizontal diaphragm m m1, cast one-half with each part of the centre head; 3rd. The centre head G G1, cast in two parts with the horizontal diaphragm m m1, cast one-half with each part of the centre head in combination with the series of horizontal pipes J J1, and the front and rear heads H and I, 4th. The centre head, cast in two parts G G1, with shoulders 1, around their edges, and the interior horizontal diaphragm cast in two parts m m1, one-half with each part of the head, so that the parts will overlap each other and be fastened together by bolts h, passing through projecting lugs f, 5th. The combination of the end heads H I, having collars n n, cast therewith the central head G G1, having collars n n cast on each section thereof, and having interior partitions m m1, and shoulders 1, cast therewith, the horizontal flue tubes J J1, and the double set of connecting rods p p, 6th. The check draft L, provided with the operating rod l, in combination with the central head having a central diaphragm, the end heads H I, tubes J J1, and exit flue E, 7th. The detachable evaporator P, provided with the pivoted pans R, connected and operated by the rod w, suspended under the pipes J1 and attached to the end of the furnace.

No. 8708. Apparatus for Casting Metal.

(*Appareil à couler les métaux.*)

Charles Dusenbury and Benjamin H. Dusenbury, New York, U. S., 30th April, 1878, for 5 years.

Claim.—1st. The tank B having partition l and spout a, and combined with the hollow pump plunger C, having the valve i and the aperture above said valve; 2nd. The shaft e, made with the projecting ribs g g, and plates h h, one of the plates h having the hole d, all arranged for combination with the solid journal box f and constituting a mould for lining said journal box.

No. 8709. Improvements on Riveting Machines.
(*Perfectionnements aux machines à river.*)

John F. Allen, Brooklyn, N. Y., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The novel combination of the levers A and B, die D, weight W, riveting machine M and cylinder C, with piston and rod, or wheel S, with screws T T; 2nd. The levers A and B turning on a fulcrum F, having on one arm a riveting machine M, and in the other arm a die D and suitable weight W, attached directly opposite each other, in combination with a cylinder C, provided with suitable valves, piston and piston-rod, said cylinder being connected to one arm, and the piston-rod to the other arm opposite; 3rd. In combination with two levers A and B, the screws T T, with wheel S, 4th. A holding-on bar composed of two levers A and B, turning on a fulcrum, in combination with a pressure cylinder, or other suitable mechanical contrivance to open or close the ends of said levers.

No. 8710. Improvements in Pumps.
(*Perfectionnements dans les pompes.*)

John A. McMartin, Montreal, Que., 30th April, 1878, for 5 years.

Claim.—1st. The head A, and enlarged at base and with channel A1 formed thereon, 2nd. The plate I interposed between the pump chamber above and piston and side chambers below and perforated as shown, 3rd. The plate K forming the bottom of the piston and side chambers, 4th. In combination with the piston-rod of a pump, the links Q pivoted to it at their upper ends, and at their lower pivoted (in such a manner as never to be at right angles thereto) to the forked shorter arm of the working lever, also pivoted to an extension of the frame, 5th. The pump lever O pivoted as shown, having its shorter arms extended beyond the point of junction with the links connecting the forks with the piston, and carrying at each end an eye.

No. 8711. Improvements on Hay Presses.
(*Perfectionnements aux presses à foin.*)

Royal H. McQuoid, Frankford, Ont., 30th April, 1878, for 5 years

Claim.—1st. The combination with the frame A, of the follower B, levers C and D, 2nd. The combination of the drum wheel H, winding shaft G, rollers F and ropes I J, for operating the toggle levers, 3rd. The brake K

applied to the drum wheel H having pins C; 4th. The bolts M, having bent ends engaging with the posts and operated by a lever N, for securing the doors L; 5th. The rod P, secured to the door O, having bent ends to prevent the spreading of the posts. 6th. The clevis fastenings R, engaging with the bar Q for securing the door O.

No. 8712. Machine for Making Circular Saws.

(Machine à faire des scies circulaires.)

William E. Nickerson, Somerville, Mass., U. S., 30th April, 1878, for 5 years.

Claim.—1st. In a punching machine the combination of the inner dies A B, and a suitable clamping device with the outer die E. 2nd. In a punching machine, the outer die E, having its cutting edge so formed as to act with a shearing cut.

No. 8713. Instrument for Curing Piles. (Instrument pour guérir les hémorroïdes.)

Robert Strange, Point Edward, Ont., 30th April, 1878, for 5 years.

Claim.—A pierced cone-shaped instrument A having perforated dome shaped detachable cap B at one end, and a suitably shaped stop D at the other.

No. 8714. Cash Recording Machine. (Machine à contrôler la caisse.)

John Moss, New York. John H. Smith and George J. Hill, Buffalo, N.Y., U.S., 30th April, 1878, for 5 years.

Claim.—1st. The combination of a registering machine of the type wheel C, racks g₂, spring levers h₂, and means for lifting off and stopping the said racks and wheels; 2nd. The combination with the racks g₂ of the guide bar m₂, having the nib r₂ and pin p₂, the hook c₃, spring catches w₂ and disengaging pins b₄; 3rd. The block g₃, having spring pins i₃, having L-shaped head b₃ and the slide levers n₃, in combination with the wheel operating racks g₂, having the spring catches e₁; 4th. The combination of the returning rod z, with the guide bars n₂; 5th. The combination of the levers m₃, spring actuated pins i₁, hook c₂, guide bar n₁, spring catch n₂ and disengaging pins b₁; 6th. The combination of the figured indicating strips o₁, with the wheels actuating racks g₂; 7th. The lever handle G having the roller t, the arm F carrying the platen g₁, in combination with the figure wheels C; 8th. The type wheels C, and the wheel adjusting devices mounted in the movable frame B, the arm F carrying the platen g₁ and the table H, in combination, for giving a double impression by a single stroke of the lever G. 9th. The forked lever m carrying the rod l, and having cams c₂, in combination with the wheel C having notches k and the arm F having the pin d; 10th. The combination of the movable spring-pressed roller s, the stationary roller g, the ratchet k, pawl h, sliding bar m and lever arm u, 11th. The ribbon rolls p, q, and the guides s t u in combination, for carrying the inking ribbon r around the printing wheels C. 12th. The combination of the ratchet a, pawl b and bar m, with the ribbon roll p, 13th. The casing A having the slotted table d, and a portion elevated above the end of the table, for receiving the operating lever G, and the platen g₁. 14th. The casing A, having a movable slide s secured by a locking device, 15th. A type wheel having radial slots for receiving type; 16th. A type wheel provided with radial slots and having the type secured thereon by swaging the metal of the wheel into the neck of the type; 17th. A type wheel having the registering notches k, 18th. The combination in a cash recording machine, of a series of printing wheels, a movable frame, a movable platen and stationary table and devices for operating the platen and movable frame, whereby an impression may be taken simultaneously from opposite sides of the printing wheels.

No 8715. Improvements on Fruit Dryers.

(Perfectionnements aux séchoirs à fruits.)

William S. Plummer, Portland, Oregon, U. S., 30th April, 1878, for 5 years.

Claim.—The case A provided in its lower part with a lining B, set at a little distance from its wall, the large door G, the small door H, the cleats or slides J, to receive the fruit frames or trays, and the cover and cap L M to allow the moisture-laden air to escape.

No. 8716. Improvements on Temporary Binders.

(Perfectionnements aux reliures volantes.)

Henry E. Thompson, Jr., Pittsfield, Mass., U. S., 30th April, 1878, for 5 years.

Claim.—The combination of the semi-tubular plate C, semi-circular perforated end plates D D, hinged arms F F and detached rod E with each other, and with the back B and sides A A of the case.

No. 8717. Improvements of Burial Caskets.

(Perfectionnements aux cercueils.)

James Chittock, Cleveland, Ohio, U. S., 30th April, 1878, for 10 years.

Claim.—The combination of a glass top or cover having a flange c to be inserted, with the edge of the glass, into the groove B of the body A, and secured in a bed of lead and oil, and with a packing d by a band D, screwed or bolted thereto.

No. 8718. Improvements on Evaporating Pans.

(Perfectionnements aux chaudières évaporatoires.)

Ernest T. Genuert, New York, U.S., 30th April, 1878, for 5 years.

Claim.—1st. An evaporating pan A provided with detachable cross-bars B, held in place by uprights C attached to the bottom of said pan; 2nd. The gates E constructed to adapt them for use, for closing the lower part of the gateways and thus regulating the depth of the stratum of liquid left in the pans; 3rd. The downwardly projecting flanges attached to the pans at their gate ways, to adapt them to be connected in a continuous series.

No. 8719. Improvements in Fish Traps.

(Perfectionnement dans les pièges à poisson.)

James M. Lasater, Manchester, Ten., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The glass vessel A provided with the funnel-shaped top a, the slide b, the bait hook B suspended on the cord D; 2nd. The combina-

tion of the glass vessel A provided with the funnel shaped top a, the slide b, the cord D and the bait hook B, with any suitable vessel for the reception of the fish. 3rd. The combination of the glass vessel A provided with the funnel-shaped top a, the slide b, the cord D and the bait hook B, the perforated vessel E provided with the flange top or rim H, the slide c and the ball I, and the bucket G provided with the bail F.

No. 8720. Mode of Heating With Steam.

(Système de chauffage à la vapeur.)

Birdsill Holly, Lockport, New York, U. S., 30th April, 1878, for 5 years.

Claim.—In combination with steam tight ship jointed sections of a street main, saddles placed near the middle of their length, for confining the respective sections from longitudinal displacement, at or near the points where the service pipes leading from the mains are located, and thereby preventing very great lateral deflection of said service pipes.

No. 8721. Improvements on Garden Implements.

(Perfectionnements aux instruments de jardinage.)

John Kinleyside, Matthew Wilson and Charles Schoonmaker, Hamilton Ont., 30th April, 1878, for 5 years.

Claim.—1st. The reversible blade N M in combination with the notched stud A. 2nd. The spindle B, in connection with the screwed sleeve G, in connection with the notched stud A and the pin E, for retaining the handle K in position on the blade N M.

No. 8722. Improvements on Band Saws.

(Perfectionnements aux scies à ruban.)

William H. Doan and George W. Bugbee, Cincinnati, Ohio, U.S., 30th April, 1878, for 5 years.

Claim.—1st. A band saw in which the support of the bearing of the upper saw pulley arbor is adapted for adjustment, whereby the upper saw pulley can be set to rotate in a plane, either coincident with, or obliquely intersecting the plane of rotation of the lower saw pulley; 2nd. The combination of the column provided with vertical ways, the bearing of the upper saw pulley arbor, and the two sets of anti friction rollers, one set being arranged near the top of the bearing to run on the interior side of the ways, and the other set near the bottom of the bearing to run on the exterior side of the ways; 3rd. The combination of the column provided with vertical ways, the bearing of the upper saw pulley arbor provided with fixed pins or studs f₁ f₂, the two sets of anti friction rollers arranged as set forth, and the adjusting screw; 4th. The combination of the two saw pulley arbors the outside sleeve bearings on the overhanging ends thereof, and the straining rod adjustable in length; 5th. The combination of the two saw pulley arbors the outside sleeve bearings on the overhanging ends thereof, and the straining rod adjustable in length and adapted to automatically change in length to a limited extent to compensate for the contraction and expansion of the saw; 6th. The combination of the upper and lower saw guides, and an independent and permanently fixed supporting standard common to both guides; 7th. The combination of an independent and permanently fixed supporting standard the vertically adjustable slide, the guide proper riding on a horizontal way or ways on the slide, and means for adjusting the guide proper horizontally; 8th. The combination of the upper saw guide and the lever for adjusting it vertically from the front side of the machine; 9th. The combination of the movable feed rolls, the sliding rack connected with the frame thereof the pinion the weighted lever, the hinged pawl thereof, and the ratchet wheel on the arbor of the pinion; 10th. The combination of the fixed friction pinion, the friction disc the rod connected by knuckle joint at one end to the shaft O, and adapted to be swung laterally for shifting the friction disc it carries at the other end and the internally adjustable bearing of the rod, 11th. The combination of the shaft O, the rod connected thereto by a knuckle joint and carrying the friction disc, the laterally adjustable bearing of said rod, the rock shaft, the arm thereon, and the lever for operating the rock shaft.

No. 8723. Machine for Engraving and Chasing Metals, and for Engraving and Cutting Stone and Wood.

(Machine à graver et ciseler les métaux, et à graver et tailler la pierre et le bois.)

Harvey K. Flagler, (Assignee of Robert B. Atchison), Boston, Mass., U. S., 30th April, 1878, for 5 years.

Claim.—The combination with the rotating hollow shaft e and cam groove l of chisels or tools and slide rods provided with rigid arms extended into the cam groove, the rotating hollow shaft e with its slide rods h and tools, and mechanism to reciprocate the tools, in combination with a vertically movable slide c and mechanism to lower the head B into working position in the head carrying slide c, and the rotating hollow shaft e with its slide rods h and tools i adapted to be reciprocated as described, in combination with the lever to move the slide and an adjusting device u to change the position of the slide, with reference to the end of the arm v to govern the descent of the head and tools according to the thickness of the material and the depth of the cut required thereon, the rotating hollow shaft e and reciprocating tools carried thereby, in combination with a support for the material and mechanism to raise and lower the head; the rotating hollow shaft e and reciprocating tools, in combination with a pipe, to conduct air to discharge the cuttings from the face of the material, the rotating hollow shaft e and reciprocating tools, in combination with a supporting surface, and a guide o and pattern plate.

No. 8724. Apparatus for Constructing Sewers.

(Appareil à construire les égouts.)

Mason G. Field and James Finegan, Syracuse, N.Y., U.S., 30th April, 1878, for 5 years.

Claim.—The elevator A composed of main frame provided with wheels r and ways a, blocks b provided with hook h, pulleys b₁ b₂ b₃, carriage c provided with pendant swivel hook e, line F and bucket B, and of the material lowerer A composed of main frame provided with wheels r and ways a, carriage C provided with pulleys b and hook y, blocks b₂ provided with pulleys b₁, bucket B, lines d d', windlasses w and brakes v.

No. 8725. Improvements in Steam Generators.

(*Perfectionnements dans les générateurs de vapeur.*)

Birdsall Holly, Lockport, N. Y. U. S., 30th April, 1878, for 5 years.

Claim.—1st. A train or series of steam boilers connected together and to a feed water supplying apparatus and to a draft flue, by pipes and flues furnished with cocks or valves and dampers, whereby, at the will of the engineer, all of the boilers can be used for generating high pressure steam or a portion of the train or series to be used for generating high pressure steam, and the others for heating and supplying feed water for those generating high pressure steam. 2nd. A train or series of steam boilers connected together and to a feed water supplying apparatus, and to a draft flue, by pipes and flues furnished with cocks or valves and dampers, whereby, at the will of the engineer, all of the boilers can be used for generating high pressure steam, or a portion of them to be used for generating high pressure steam and the other portion for generating low pressure steam. 3rd. A train or series of boilers connected together and to a feed water supplying apparatus and to a draft flue, by pipes and flues furnished with cocks or valves and dampers, whereby, at the will of the engineer, all of the boilers can be used for generating high pressure steam, or a portion of them to be used for generating high pressure steam, a portion for generating low pressure steam, and a portion for heating and supplying feed water for the high and low pressure boilers. 4th. The combination of the smoke flue D b b, waste heat pipes D₁ D₂ and the dampers c₁ c₂ c₃ c₄ c₅ c₆, with two or more boilers A₁ A₂ and stack D₁. 5th. The combination of the smoke flue D b b, having dampers c c, waste heat pipe D₁ and its damper c₁, two or more boilers A₁ A₂ and stack D₁. 6th. The combination of the boilers A₁ A₂, smoke flue D b b, waste flues D₁ D₂ and the dampers c₁ c₂ c₃ c₄ c₅ c₆ and the stack D₁. 7th. The combination of the pump C, pipe B, train or series of boilers, and the feed water pipes and cocks belonging to boiler A₁. 8th. The combination of the pump C, pipe B, train or series of boilers, and the feed water pipes and cocks belonging to boiler A. 9th. The combination with a train, series or battery of boilers, of the high and low pressure steam conveying pipes E G and their cocks.

No. 8726. Improvements on Gas Lighters.

(*Perfectionnements aux allumeurs à gaz.*)

George H. Kitchen, John F. Kitchen, Rye, N. Y., and Frederick Mc Lewee, New York. (Assignees of John R. Scattargood, Newark, N. J. U. S.), 30th April, 1878, for 5 years.

Claim.—1st. The tube A provided with the nozzle b and air opening d at or near opposite ends, to constitute a gas lighter of which the flame is supplied by gas; 2nd. The combination of the tube A having the nozzle b at one end, and the air opening d at or near the other end, with the valve or cock e. 3rd. The combination of the key or wrench B, with the tube A having the nozzle b and air opening d.

No. 8727. Improvements on Hose Reels.

(*Perfectionnements aux rouets à tuyaux élastiques.*)

Frederick M. Sheppard, New York. (Assignee of Butley B. Douglas, Newark, N. J.), U. S., 30th April, 1878, for 5 years.

Claim.—The combination of the standards A supported upon a four wheeled truck, the bolts C, rungs E, nozzle holder J, nut U and latch L.

No. 8728. Improvement on Lubricating Compositions.

(*Perfectionnement aux composés lubrifiants.*)

Bridget French, (wife of John French), Rochester, N. Y., U. S., 30th April, 1878, for 5 years.

Claim.—A compound composed of petroleum or other oil, plumbago, bees-wax, Brazil or myrtle wax, tar or pitch, tallow and carbonate of soda, or other alkali.

No. 8729. Apparatus for the Manufacture of Salt.

(*Appareil pour la fabrication du sel.*)

Henri Ransford, Brighton, Eng., 30th April, 1878, for 5 years.

Claim.—1st. The combination with the pan A, of the upper pan or evaporator B, in such manner that the steam rising from the lower pan may be condensed on the under side of the upper pan or evaporator, at the same time heating its contents whilst the water resulting from such condensation is conveyed away. 2nd. The combination of the pan A with the upper pan or evaporator B and the gutter C.

No. 8730. Improvements on Fruit Dryers.

(*Perfectionnements aux séchoirs à fruits.*)

Rufus Moore, Kingsville, Ont., 30th April, 1878, for 5 years.

Claim.—1st. The reservoirs B and E having their tops made in the form of trays. 2nd. The pipe legs D D connecting the reservoirs B and E. 3rd. The funnel C communicating with the reservoir B.

No. 8731. Improvements on Tobacco Pipes.

(*Perfectionnements aux pipes à tabac.*)

Jonathan Davis, St. Paul, Min., U. S., 30th April, 1878, for 5 years.

Claim.—1st. In a pipe bowl, the combination of the inner shell A divided into two compartments, by the partition C, and provided with spiral grooves a on the outside, communicating with ducts leading to said compartments, and the outer shell over said inner shell, and the fire pot D sitting within said inner shell. 2nd. In a pipe stem, the combination of the body G divided into two compartments by the partition g, said compartments communicating with each other, by means of spiral channels on the outside of said body, and the outer casing and supplemental stem H secured in the lower part of the body.

No. 8732. Improvements on Calendars.

(*Perfectionnements aux calendriers.*)

William W Kitchen, Grimsby, Ont., 30th April, 1878, for 5 years.

Claim.—A calendar composed of the plate A and revolving wheel B, the former divided into seven sections, each section containing letters and numerals of months and days, and the latter, letters indicating the seven days of the week, spaced correspondingly to such sections, so that from date of day and date of one period, the day and date of another period within the year may be ascertained.

No. 8733. Improvements in Meter Valves.

(*Perfectionnements aux valves-manomètres.*)

Birdsall Holly, Lockport, N. Y., U. S., 30th April, 1878, for 5 years.

Claim.—1st. The longitudinally adjustable valve plug of cone form which is applied to be uninfluenced by the direct pressure of the steam upon it within its chamber, in combination with a valve chamber, having a perforated diaphragm across it for the cone plug to work in back and forth and an inlet passage between one end or head of the chamber and the said diaphragm and an outlet passage between the other end or head of the chamber and said diaphragm, whereby a suitable receiving chamber on one side of the diaphragm for high pressure steam is provided, and a like chamber for low pressure steam on the other side of the diaphragm is also provided, and the passage of the steam which is at high pressure, into pipes which are to conduct the steam at variant pressures or at low pressure, is controlled. 2nd. The valve plug chamber, made in two parts, and with its diaphragm confined beneath the ends of these parts by a coupling device.

No. 8734. Improvements on Postal Cards.

(*Perfectionnements dans les cartes postales.*)

Franklin W Brooks, New York, U. S., 30th April, 1878, for 5 years

Claim.—1st. A return postal card composed of two separable parts with message blanks or surfaces on the respective parts, said message blanks or surfaces being so arranged as to be used successively without inclosing any writing, while each message can be retained by the party to whom it is addressed. 2nd. A return postal card composed of two separable parts, each having a stamped address blank or surface, and adapted to receive successively two messages without inclosed writing, the first message with its appropriate address and post-mark being on one part of the card so as to be retained by the party who receives it, while the other part of the card is adapted to receive the reply and its appropriate address and post mark. 3rd. Two separable parts, each having a blank or surface for a message to appear on the exposed back of the card, the reply blank or surface being inclosed and protected during the transmission of the first message by the removable part bearing said message. 4th. Two separable parts, each having a blank or surface for a message to appear on the exposed back of the card with the reply blank or surface on a card of sufficient stiffness, and the blank or surface for the first message on thin and light paper. 5th. A return postal card composed of a double card or sheet of thin paper with a fold at one edge, and a reply card inclosed within said double card, each card having a full size stamped address blank or surface, and a full size message blank or surface, so arranged that neither message will be inclosed, and so that the message of each card will be permanently connected with its appropriate address and post-mark. 6th. A double card or sheet having closed longitudinal edges and open ends, and a reply card inclosed within said double card, and confined therein, but so as to be inspected through said open ends of the double card, each card having a full size of stamped address blank or surface, and a full size message blank or surface for carrying two messages successively without inclosed writing. 7th. A double card or sheet, having closed longitudinal edges, and a reply card inclosed within said double card, and united therewith at one of said closed edges, this edge being perforated or partially severed so that by tearing off said edge, the inclosed card will be simultaneously disclosed and detached.

No. 8735. Bark Cutting Machine.

(*Machine à couper l'écorce.*)

William Shaw, Kingman, Me., U. S., 30th April, 1878, for 5 years.

Claim.—In a revolving cutting drum, a screen d surrounding the lower half of said drum, and operating in connection with the revolution of the drum, to screen the bark and return to coarser portions to be recut

No. 8736. Improvements on Slates.

(*Perfectionnements aux ardoises.*)

Harry C. Goodrich, Chicago, Ill., U. S., 30th April, 1878, for 5 years

Claim.—A slate frame having cord passed through and over its edge to form a muffler thereon

No. 8737. Improvements on Horse Shoes.

(*Perfectionnements aux fers à cheval.*)

Jacob Russell, Newark, John J. Reimer and Christian E. Moller, Hoboken, N. J., U. S., 30th April, 1878, for 5 years.

Claim.—1st. Rolling the bar with a ledge or offset along one edge, next forming a crease in said ledge, bending the bar into form, and finally by direct pressure forming the solid toe and heel calks and reducing the bar between the calks; 2nd. Forming the creases e in the bar, for making a horse-shoe by obliquely set dies. 3rd. A machine-made horse-shoe constructed with inclined creases e e. 4th. A horse-shoe constructed with solid toe calk and an offset or ledge extending in front of the toe-calk and adapted to supply the metal for the toe-clip.

No. 8738. Improvements on Compressed Lamps.

(*Perfectionnements aux lampes comprimées.*)

Thomas T. Turnbull and Charles N. Armstrong, Montreal, Que., (Assignees of Emile Grivel, Paris, France), 2nd May, 1878, for 5 years.

Claim.—1st. Compressed cakes of solid soap, composed of salt, flour or meal, ground piment, ground white pepper, meat, suet, onions, without broth added thereto. 2nd. In compressed cakes of soap, composed of salt, flour or meal, ground piment, ground white pepper, meat, suet, onions and broth added thereto.

No. 8739. Improvements in the Manufacture of Tubing.

(*Perfectionnements dans la fabrication des tuyaux.*)

William McKenzie, New York, U. S., 2nd May, 1878, for 5 years

Claim.—1st. A tube or tube blank, having a solid end and a hook for engaging the tube drawing machinery. 2nd. The method of cleaning tubes by drawing them while hot through a scraping die. 3rd. The process of refining and welding imperfect tubes, by heating them to a welding heat, and while hot passing them repeatedly through rolls. 4th. The process of making new and perfect tubes from old or imperfect tubes without altering their cylindrical form.

No. 8740. Improvements in Steam Boilers.
(*Perfectionnements dans les chaudières à vapeur.*)

Patrick Fitzgibbons, Oswego, N.Y., U.S., 2nd May, 1878, for 5 years.
Claim.—1st. The throat D having the shape of an inverted arch formed by the bottom portion of the shell of the boiler proper at the top, the curved top portion at of the water leg a at the sides and a segmental or crescent shaped top of the throat sheet d at the bottom and the rear smoke box A having a correspondingly curved bottom. 2nd. The back flue sheet f extended in width, to cause its side edges to coincide with the sides of the throat D, and attached to the bottom portion of the shell of the boiler proper and to the curved top portion at of the water leg a, by means of the angle-iron or L-shaped band e extended across the bottom portion of the boiler shell, and over the curved top portion at of the water leg: 3rd. The flue sheet f and the throat sheet d having the rearward projecting flange v forming one continuous flange, and the smoke box A attached with its top and sides to the exterior of the flange on the flue sheet, and with its semi-circular bottom to the interior of the flange on the throat sheet.

No. 8741. Improvements on Lifting Jacks.
(*Perfectionnements aux crics.*)

John B. Fayette, Oswego, N.Y., U.S., 2nd May, 1878 for 5 years.
Claim.—The combination of the base A hollow standard B tubular shouldered nut C, screw stud D, upper slide E, two pairs of pivoted connecting bars F H and forked lever G, with each other

No. 8742. Improvements on Boot Jacks.
(*Perfectionnements aux tire-bottes.*)

Jesse Roberts, Leon, Iowa, U.S., 2nd May, 1878, for 5 years.
Claim.—The tread A with its wedge shaped spreader attachment E, the jaw pieces B and H and the springs D D.

No. 8743. Improvements in Invalids' Chairs.
(*Perfectionnements dans les chaises d'invalides.*)

Edward C. Jones, Warrensburg, Mo., U.S., 2nd May, 1878, for 5 years.
Claim.—The axle g with lever in catch n, arms h and i, the connecting rods k and l, rod d, side piece e and f and board G, in combination with the foot rest H, back rest F, seat E, sides A and B with rod c, holes n n, clamps q and q and cross pieces C and D.

No. 8744. Device for Cleaning Railway Rails.
(*Appareil à nettoyer les rails de railroutes.*)

George Royal, Trukee, Cal., U.S., 2nd May, 1878, for 5 years
Claim.—1st. The combination of the hangers g, sleeves h, cutters i and springs; 2nd. The combination of the hangers g, sleeves h, springs and connecting rod j, with an elevating lever or device; 3rd. In combination of the cutters i, connected together by means of a cross-bar and guided by means of a rod which is connected to the track.

No. 8745. Barrel Trussing Machine.
(*Machine à armer les barils.*)

Horace W. King, Alden, N.Y., U.S., 2nd May, 1878, for 5 years.
Claim.—1st. The annular head D provided with supporting hooks n and rabbit m, in combination with the movable hollow cone B; 2nd. The combination with the separable bed E, of the semi-circled plates d11 d11 provided with mechanism, for moving them simultaneously in opposite directions: 3rd. The curved arms l and triangular pieces m, in combination with the plates d11 d11; 4th. The combination of the spring m1 with the curved arms l; 5th. The separable bed E having formed in it an inverted hollow truncated cone b1 having a flaring mouth, for supporting the lower truss hoops and contracting the partly formed barrel; 6th. The combination, in a barrel trussing machine, of the wheel l, pinions h, racks C, cone B and head D; 7th. The combination, in a barrel trussing machine, of the plates d11 d11, racks h1 f1 and pinion j; 8th. The combination, of two hollow truncated cones B F.

No. 8746. Improvements on Grain Threshing Machines.
(*Perfectionnements aux machines à battre les grains.*)

Jonathan Brown, Malahide, Ont., 2nd May, 1878, (Extension of Patent No. 7546,) for 5 years.

No. 8747. Improvements on Grain Threshing Machines.
(*Perfectionnements aux machines à battre les grains.*)

Jonathan Brown, Malahide, Ont., 2nd May, 1878, (Extension of Patent No. 7546,) for 5 years.

No. 8748. Improvements on Clothes Dryers.
(*Perfectionnements aux séchoirs à linge.*)

George W. Ainsworth, Montpelier, Vt., U.S., 4th May, 1878, (Extension of Patent No. 2315,) for 5 years.

No. 8749. Sap Pan Elevator and Car.
(*Élévateur et charriot pour les casseroles à sucre.*)

Edw W Lee, Stanstead, Que., 6th May, 1878, (Extension of Patent No. 2332,) for 5 years.

No. 8750. Improvements on Turbine Wheels.
(*Perfectionnements aux roues-turbines.*)

Theodore H. Ridsden and William W. Tyler, Mount Holly N J., U.S. 7th May, 1878, for 5 years.
Claim.—1st. In a cylinder-gate turbine wheel a crown plate E supported close to the top of the wheel by means of goose necks E which pass over the gate 2nd. The arrangement of the crown plate E, goose necks E and gate P, which moves within said goose-necks; 3rd. In combination with the gate P, a sleeve J and spider K carrying the gate, sliding upon a central stem G erect

ed upon the crown plate, and operated by a rack and pinion L, L1 to open or close the gate; 4th. The combination of the stationary cylinder H and the piston I connected with the gate P, whose weight is partly balanced by the upward pressure of the water on said piston; 5th. In combination with the cylinder gate P a garniture Q, the top of which is downwardly and outwardly inclined in order to shed obstructions, while its bottom inclines inwardly to form the top of a contracting chute; 6th. The garniture Q constructed with a centrally converging ditch Q1; 7th. The garniture Q constructed with recesses S in its sides; 8th. A double water wheel T, the upper section of which surrounds the central shaft F, without interior dividing diaphragm or partition whatever.

No. 8751. Improvements in Harvesters.
(*Perfectionnements dans les moissonneuses.*)

Thomas S. Brown and John P. Adriaance, Poughkeepsie, N.Y., U.S., 7th May, 1878, for 5 years.

Claim.—1st. In a harvester, a tongue G, in combination with a brace G2, extending to, and hinged upon the front and inner corner of the main frame and the binding cross piece G1, the outer extension of which forms a foot-rest g for the driver. 2nd. The tongue cross-piece G1, in combination with and as a support for the double pedal X, and pedal crank-rod and crank z; 3rd. A mechanism intermediate between the foot of the driver and the latch which controls the rake cam gate, consisting of a lever and link, or other equivalent mechanism, viz. double pedal X, pedal shaft z, pedal crank z1, link z2, double lever z3, spring controlled shifter-rod Y, lug y and sliding latch stem V, the whole organized in such manner that at rest the latch is held in equilibrium, but can be raised into or lowered out of the path of any or all the rake arms by pressure in one or the other direction upon the pedal. 4th. A driver's seat E supported by loosely hinging its spring support Ex upon an extension of the drive wheel axle b2, and by bracing to a guard board J extending from the tongue cross-piece G1 to the seat, and there adjustably connected by a pin J; 5th. The lever H hinged to the crank-frame B, upon the sleeve b thereof, in combination, by means of a link 10, with the inner end of the pole G, which latter is hinged to the front cross piece of the main frame A; 6th. As a means of connecting the arm b1, or free forward part of the crank frame B, rigidly to the main frame A, when the platform 14 adjusted to a desired height of cut, a gag-piece F, hinged to the main frame and consisting of two internal parallel ratchet bars, the teeth of each bar pointing toward the teeth of the other, and a double pawl F1 pivoted to the arm b1 of the crank frame, and adapted to engage the ratchet teeth on each side so as to lock with the gag-piece and prevent either an upward or downward movement of the platform. 7th. In combination with the driving wheel C, the driving gear wheel D, mounted loosely upon the hub of the driving wheel and provided with a ratchet d upon its side, adapted to receive and bite into (in the forward movement of the driving wheel) a pawl c lying parallel with the axis, and contained within bearings in the drive wheel, so that said pawl engages with said ratchet to operate the driving gear-wheel, and thence the train in the forward movement of the drive wheel, and adapted to slide back over said ratchet in the backward movement of the drive wheel. 8th. As a device for locking the pawl c in the drive wheel out of bite with the ratched d, in the main drive wheel D, in the pawl handle c1 and projection c2, on the drive wheel, the arrangement being such that the handle can be pulled out, turned half round and rested on the projections to hold the pawl out of gear, the spring drawing the handle into the recesses c4 and the pawl into bite when the handle is turned off the projection; 9th. In combination by means of a sprocket chain R, a sprocket pinion M upon the end next the platform of the bevel wheel or driving shaft I, and a driving sprocket wheel R, on the platform end of a shaft, in the rake standard lying parallel with the bevel wheel shaft, said shaft in the standard being provided at its inner end with a sprocket wheel pinion Q1, meshing with a crown wheel Q, connected with the vertical shaft which drives the rakes, the whole forming a device for driving the rakes from the bevel wheel shaft I. 10th. A device for holding the latch U in equilibrium, and in readiness for motion on either direction, in the opposing springs z z, in the rake head embracing the shutter rod y and abutting against its lug y. 11th. A platform z1 hinged to the main frame by hinges 11 and 12, located on top of the platform at front and back of the main frame and as wide a part as possible, the arrangement being such as to give a wide basis of support, with the result that when down a portion of the platform folds beneath the main frame, and when up a portion of the platform and of the finger bar hang below the axis of the hinge and the centre of the carrying wheel Ax1. 12th. The combination of the platform extension z1, the socket z2x, beneath the main frame, and connecting bolt z1, the whole forming a rigid splice for the platform when down; 13th. In combination with the platform Z, when raised, the carrying wheel Ax1, placed against its under side by means of the axle bolt Ax2; 14th. In combination with the rake head standard P, and with the rake arms Z, bumpers 21, adapted to cushion the arms when said arms are thrown up; 15th. The lever H, loosely set in its socket, 16th. In combination with the cutters, a retaining spring 22 set on the platform to retain the cutters in place when the platform and cutters are folded up; 17th. In combination with the tongue brace G, the angle jack D1 removably adjusted thereto.

No. 8752. Machine for Spreading Manure.
(*Machine à distribuer les engrais.*)

Joseph S. Kemp, Magog, Que., and William M. Burpee, Derby, Vt., U.S., 7th May, 1878, for 5 years.

Claim.—1st. The toothed cylinder D having a portion of its teeth knife edged, and a portion arranged in spiral sections; 2nd. The drill attachment H having adjustable chutes j1 k1, in combination with the braces h n, combined to operate with toothed cylinder D and connections; 3rd. In combination with the adjustable chutes j1, the flexible extensions p1 secured to, and operating with the said chutes; 4th. The polygonal wheel a having one or more teeth or projections in each of its faces, combined to operate with a perforated flat chain B, secured to the slats b1; 5th. In combination with the chain B and chain wheel c, the shaft v and hand crank c1 to operate the floor C when loading; 6th. The floor C composed of slats b1 having rounded or bevelled edges, and continuously secured to the chain B; 7th. The axle F having the gears z and v and ratchet wheels h1 secured to, and revolving with it, in combination with the gearing operating the toothed cylinder D and floor C; 8th. The combination of the ratchet wheels h1 and spring-pawls g1, with the axle F of a manure spreader; 9th. The manner of conveying motion from the wheel K to the toothed cylinder D, by means of the gears z s u k and shaft L; 10th. The combination of the worm cylin-

der *g* with the gear wheel *f*, for giving a slow and uniform motion to the floor *C* of a manure spreader; 11th. The perforated connecting bar *z*, lever *l* and slotted arc *a*, acting in combination to gear and outgear the worm cylinder *g* and gear wheel *f*; 12th. The shaft *M* carrying, on either end, the cranks *m*, in combination with the hand lever *v*, latch *p*, spring *r* and slide *e*; 13th. The combination of the crank *m* and rod *b* with the clutch *l*; 14th. The combination of the projection *d* and end board *c* with the slide *e*; 15th. In combination with a chain *h*, made as described, the screw swivel *q*.

No. 8753. Improvements on Looms.
(*Perfectionnements aux métiers de tisserands.*)

Hornac Woodman, Saco, Me., U. S., 7th May, 1878, for 5 years.

Claim.—1st. The shuttle holders *m*, in combination with the shuttle carrying arms *M*; 2nd. The combination of the spring followers *n* with the shuttle holders *m*; 3rd. The combination of the spring catches *l* with the shuttle holders *m*; 4th. A shuttle having on one of its sides inclined planes *k*, for engaging the spring catches *l* of the shuttle holders *m*; 5th. The combination of the rack bars *E* with the shaft *D*; 6th. The rack bars *E*, toothed sectors *H* and their cranks and connecting rods, for moving the shuttle carrying arms *M*; 7th. The arrangement of the shuttle driving cranks and connecting rods, whereby the axis of the crank shaft, the axis of the crank pin and the centre of the pivot of the connecting rod are brought into a right line, which is parallel with the path of the shuttle; 8th. The arms *O* having the curved slot *h*, in combination with the cranks *N*, for driving the lath beam of a loom; 9th. The regulating lever *X*, the reciprocating connecting rod *f*, and the slotted beam actuating lever *dx* in combination; 10th. The crank disc *h* having the adjustable wrist pin *g*, in combination with the beam operating mechanism; 11th. The combination of the wheel *W*, clutch dog *bt* and lever *dx*, with the cloth beam *S*.

No. 8754. Improvements in Vehicle Tops.
(*Perfectionnements dans les soufflets des voitures.*)

Charles Fockler, Dubuque, Iowa, U. S., 7th May, 1878, for 5 years

Claim.—1st. The combination with the fixed radially toothed disc *G* having a central aperture, of the correspondingly toothed movable disc *F* carrying the tilt or canopy, and having the screw *O* and the thumb nut *P*; 2nd. In combination with the seat *A* and the radially toothed disc *G* secured thereto, the adjustable toothed disc *F* carrying the entire top and a clamping device *O* *P*; 3rd. In combination with a seat *A*, the bent arms *B* *B* projecting beyond the sides thereof, the toothed disc *F* with legs *z* firmly secured to said arms, and the adjustable toothed disc *G* carrying the entire top, and fastened by means of the screw *O* and thumb nut *P*; 4th. The combination with the adjustable disc *F*, of the arm *E* projecting therefrom, the knee-jointed bow irons *C* *C*, the bows *H* and *D* *D*, and the jointed brake *K* with hook *L* and the eye *N*, the joints and adjustments being all on the inside.

No. 8755. Improvements on Circular Sawing Machines.
(*Perfectionnements aux scieries circulaires.*)

George J. Kautz, Emporium, Pa., U. S., 7th May, 1878, for 5 years.

Claim.—1st. The combination of a lumber holding and feeding mechanism, composed of an intermittently revolving spiked front roller, a vertically movable spiked roller and a top pressure roller with a revolving and intermittently oscillated circular saw; 2nd. The combination of the lever arrangement with swinging pressure roller, spiked bottom roller and vertically adjustable actuated standards, to release or hold lumber, as required; 3rd. The combination of the operating lever arrangement with the lumber feeding and holding mechanism, and with clutch device of driving shaft, the latter operating spiked front rollers and circular saw, to throw machine in or out of work; 4th. The combination of clutch device of driving shaft, having intermeshing pinion, and of a cog-wheel having segmental cam on one side, and cam groove at opposite side, with transmitting pinion and gear of spiked front roller and with swinging frame of circular saw, to secure alternate feeding of lumber and cutting of saw; 5th. The combination of the operating lever arrangement, and vertically sliding forked and spring acted standard *C*, with clutch device of driving shaft, swinging saw frame, top pressure roller and spiked intermittently revolving front roller.

No. 8756. Improvements in Stoves.
(*Perfectionnements dans les poêles.*)

George P. Sheffield, Ontario, and George W. McKee, Brooklyn, N. Y., U. S., 7th May, 1878, for 5 years.

Claim.—1st. In combination with a stove range, &c., of an induction pipe *L*, the same to form a connection to the fire box through the oven to the exit pipe; 2nd. The plate *J*, at the back of the oven and provided with an opening *K*, at its lower end; 3rd. The series of tubes *H*, connecting the front of the oven with the chamber *D*, under the fire box, and adjusted by a slide *I*; 4th. The continuous passage *G*, over and around the oven for the indirect draught communicating with the exit pipe *M*; 5th. The combination of the upper and lower ash pit *D* *E* respectively; 6th. The jacket *N*, enclosing the induction and smoke pipes, and provided with a cover *P*, preferably hinged and operated by means of a rod *N* and pin *a*, or the equivalent thereof and openings *Q*; 7th. The construction of the damper *Q*, consisting of the two outer cylinder heads *aa*, two inner cylinder heads *bb*, outer curved damper plate *g*, inner curved damper plate *h*, rod *c*, tube *e*, projections *r* *z*, and bands *df*; 8th. In combination with a stove, of the holes *x* on the vertical plate, at the rear of the damper *Q*; 9th. In combination with a stove, of a hinged hearth *R* and brackets *S*; 10th. In combination with a stove, of the mode of securing legs to the same consisting of a hole *m*, in the bottom of the stove, curved cleats *k*, stops *l* and the foot or leg having a pin *n*, on its top to be inserted in the hole *m*, two sides of the foot bevelled to correspond with the bevels of the cleats; 11th. In combination with a stove, of a stove ring *U* provided with legs *q*; 12th. In combination with stoves, ranges, smithies, furnaces, boilers, &c., of the induction pipe *L* and jacket *N*, the same being used singly or in combination for saving fuel.

No. 8757. Improvements on Baby's Chairs.
(*Perfectionnements aux chaises d'enfants.*)

William W. Butcher, London, Ont., 8th May, 1878, (Extension of Patent No. 2342,) for 5 years.

No. 8758. Improvements on Furnace Grates.
(*Perfectionnements aux grilles des fourneaux.*)

Aller J. Alexander, John T. Davis and Jonathan F. Scofield, (Assignees of Charles Kugler,) Barnesville, Ohio, U. S., 9th May, 1878, (Extension of Patent No. 2349,) for 5 years.

No. 8759. Improvements on Knitting Machines.
(*Perfectionnements aux machines à tricoter.*)

Charles F. Chff and Adam Shaw, Hespeler, Ont., 11th May, 1878, for 5 years.

Claim.—1st. The combination with the vertical needle cylinder *O* and rotary sleeve *N*, of the horizontal plate *A*, having radial needle grooves, rotary plate *B* having fixed cam *M* and *K*, movable by handle *L*; 2nd. The combination with the rotary cam sleeve *N*, operating the vertical needles in cylinder *O*, of the arched frame *C*, shaft *E*, collar *D*, adjustable connecting pin *F* and plates *A* and *B*, the latter secured to the shaft *E* and operating as described; 3rd. The combination of needle cylinder *O*, having diameter at stops *P* *R*, and the needle plate *A* having stop *G*; 4th. A knitting machine needle constructed with the jack or flat projection *M* near its rear end.

No. 8760. Cast Iron Door Saddle.
(*Bourrellet à fonte pour les portes.*)

William S. Bustin, Uxbridge, Ont., 13th May, 1878, for 5 years.

Claim.—1st. A cast iron saddle or sole *A* formed by the combination of two sloping sides *b*, in connection with a flat top *a*, with or without the curve *e*, and forming a hollow space *d*, beneath the whole length of the said saddle *A*; 2nd. A door *C* provided with a hinged strip *f*, in combination with a cast iron sole or saddle *A*.

No. 8761. Improvements in Vehicle Gears.
(*Perfectionnements dans les trains des voitures.*)

George Bellamy, Newtonville, Ont., 13th May, 1878, for 5 years.

Claim.—1st. Pivoting the hind axle *A*, of a wagon or other vehicle on a king bolt *C*, and connecting it to the pivoted front axle *B*, by means of the cross braces *D* *D* in such a manner that in turning the vehicle, the motion of either axle on its king bolt will cause the other to move in the direction required to allow the wheels upon one axle to follow in the circle described by the wheel upon the other; 2nd. The pole *E*, attached to the hound *t* and provided with spring rods *F*, in combination with the staples *a*, secured to either the front or back axle *A*; 3rd. The cranked rod *H*, secured to the hound *G* and provided with brakes *K*, *K*, in combination with brake rod *M* connected to the harness of the horses through the neck-yoke; 4th. The pole *N* provided with a chain *u*, in combination with the pole *E*, and rod *M*.

No. 8762. Improvements in Abdominal Supporters.
(*Perfectionnements dans les suspensoirs abdominaux.*)

William W. Lang, Toronto, Ont., 13th May, 1878, for 5 years.

Claim.—1st. The back pads *C*, placed above the general level of the band; 2nd. The front pads *A*, divided by an elastic web insertion *aa*; 3rd. The combination with the rear section, provided with the elevated back pads and the front section of the adjustable straps *D* *D*; 4th. The uterine supporter *E*, in combination with the adjustable elastic supporting bands *F* *F* and the abdominal band or belt; 5th. The uterine supporter consisting of a cup stern and base, arranged in the manner described and constructed of any material or combination of materials possessing the requisite stiffness, and that may be bent and set to any desired curvature.

No. 8763. Improvements on Cricket Bats.
(*Perfectionnements aux bâtes à jouer.*)

Roseco C. Barnes, London, Ont., 13th May, 1878, for 5 years.

Claim.—1st. The base *b* of a cricket bat *B*, having a hollow chamber or recess *C*, formed in it at its lower end to receive the handle *A*, and surrounding it so as to leave an intervening space *F* between the handle and the bat; 2nd. In combination with the above bat, the india rubber ring *G*, acting as a cushion and disposed as described.

No. 8764. Improvement on Stoves.
(*Perfectionnement aux poêles.*)

Charles H. McCaw and Thomas Brown, Port Perry, Ont., 13th May, 1878, for 5 years.

Claim.—The combination of the double corrugated walls *C* *C*, in combination with the hot air chamber *B*.

No. 8765. Improvements on Cigar Machines.
(*Perfectionnements aux machines à cigares.*)

Frederick Hachnell, New Orleans, La., U. S., 13th May, 1878, for 5 years.

Claim.—The loose belt *I* in combination with the bunch holder *E*, which conforms to the contour of the bunch or cigar while the narrow belt rotates the same; 2nd. The paste holding cylinder *H*, provided with a piston and an exit pipe *n*, said cylinder located as specified in combination with a bunch holder *E*; 3rd. A bunch holder *E*, provided with a lip *bt* and rounded end; 4th. An oscillating curved knife *G*, in combination with a bunch holder provided with a lip *bt* and rounded end; 5th. The improved regulator *S* composed of the guide or holder *m*, screw rod *m*, regulator head *mt*, nut *m*, and spring *ma*, in combination with a bunch holder; 6th. The adjustable gauge *M*, in combination with the narrow shuffable belt *I* and bunch holder *E*; 7th. One or more removable bands *M*, applied to the loose cylindrical roller *D*; 8th. The removable table *L*, provided with the curved inner end, in combination with the bunch holder *E* provided with a lip *bt*.

No. 8766. Cigar Wrapper Cutter.
(*Machin à Couper les enveloppes des cigares.*)

Frederick Hachnell, New Orleans, La., U. S., 13th May, 1878, for 5 years.

Claim.—1st. The bed plate *D* made of larger dimensions, but of a shape to conform to the contour of the wrapper to be cut by the reciprocating cutter; 2nd. The cutter or knife holder *A*, recessed for the reception of the cutter *C* and clamping piece *B*.

No. 8767. Improvements in Whiffletrees.*(Perfectionnements dans les palonniers.)*

Duncan MacKinnon, Lucknow, Ont., 13th May, 1878, for 5 years.

Claim.—1st. The tapering or slanting tug pins F F. 2nd. The spring bar C bigo bar E and plates D D. 3rd. The spring or guard G, in combination with the spring bar C; 4th. The strap H, in combination with the spring bar C.

No. 8768. Improvements on Gas Purifiers.*(Perfectionnements aux épurateurs à gaz.)*

Eli T. Booth and Daniel J. Esser, Manchester, Pa., U. S., 13th May, 1878, for 5 years.

Claim.—1st. A vessel with interior perforated partition plates that form top and bottom gas chambers, with inlet and outlet pipes, filtering chambers charged with filtering material and gasoline and intermediate distributing chambers between the filtering chambers. 2nd. The combination of vessel A having interior perforated partition plates B, forming chambers C with filtering material and gasoline, intermediate distributing spaces D, and top and bottom gas chambers C² with inlet and outlet pipes, the filtering chambers being re-charged from time to time with filtering material and gasoline, by means of plugged openings.

No. 8769. Improvements on Electric Telegraphs.*(Perfectionnements aux télégraphes électriques.)*

John Muirhead, Jr., Westminster, Eng., 13th May, 1878, for 5 years.

Claim.—The arrangement of parts A B C L E F and G.**No. 8770. Improvements on Washing Machines.***(Perfectionnement aux machines à laver.)*

Henry Hutchins, Minneapolis, Min., U.S., 13th May, 1878, for 5 years.

Claim.—1st. The combination of the revolving disc E having vertically projecting knobs F, and the post A having spokes C. 2nd. The provision to the post H, of jaws J for holding the machine on the edge of a tub.

No. 8771. Improvements on Feather Renovators.*(Perfectionnements aux rafraîchisseurs à plume.)*

John J. Bonney, Fulton, N. Y., U.S., 13th May, 1878, for 5 years.

Claim.—The series of drums or pipes e, in combination with the centre pipe h, end chambers d d' and valve c, for opening the parts.

No. 8772. Improvements on Loom Shuttles.*(Perfectionnements aux navettes de tisserands.)*

James M. Palmer, Cambridge, and Charles A. Shaw, Salem, Mass., U.S., 13th May, 1878, for 5 years.

Claim.—1st. The combination of the cone K, conical socket h, spindle B, pivoted spindle-head C, and a spring arranged to force or draw the cone into the socket. 2nd. The auxiliary cone F and its conical socket, in combination with the spindle B, pivoted spindle-head C, and a spring arranged to draw or force the cone into its socket, and all the cone K in centering the spindle. 3rd. The pivoted spindle head C provided with the vertical dog or leg L, located at the rear end of the spindle-head, and having its rear face at, or nearly at, right angles with the axial line of the spindle B. 4th. The spring or plate i provided with the lip m, in combination with the pivoted head in which the spindle of the shuttle is secured; 5th. The set screw n, in combination with the plate or spring i, and with the pivoted head in which the spindle of the shuttle is secured; 6th. A pivoted spindle-head provided with both tapering and straight bearings for the spindles.

No. 8773. Improvements on Plough Coulters.*(Perfectionnements aux coutres des charrues.)*

Benjamin P. Sulder, Bertie, Ont., 13th May, 1878, for 5 years.

Claim.—A cutter having a horizontal arm and attached to the landside of the plough, by means of bolts passing through openings A and B of this arm, the upper end C of the blade of the cutter being curved.

No. 8774. Improvements on Sounding Apparatus.*(Perfectionnements aux appareils de sondage.)*

Joseph Léveillé, Montreal, Que., 13th May, 1878, for 5 years.

Claim.—The trailing frame A having scale-rods B at both ends, hung under the vessel by chains, and permitted to traverse the bed of the river or harbor.

No. 8775. Improvements in Extracting Sugar from Vegetable Substances.*(Perfectionnements dans l'extraction du sucre des substances végétales.)*

Ernest T. Gennert, New York, U. S., 13th May, 1878, for 5 years.

Claim.—1st. The inner vat B provided with a perforated bottom, a sunken perforated cover C, and a bail D pivoted to its opposite sides a little above the centre, in combination with the outer vat A. 2nd. The employment of superphosphate of lime in and while extracting the sugar from dried beets.

No. 8776. Improvements on Table Games.*(Perfectionnements aux jeux de table.)*

George L. Witsil, Philadelphia, Pa., U.S., 13th May, 1878, for 5 years.

Claim.—1st. A table provided with a bed and channel surrounding the same, said beds having numbered spots located at each end thereof, and numbered lines extending transversely across the table. 2nd. A table game apparatus consisting essentially in a bed, the opposite ends thereof being furnished with numbered spots, while the remaining portion of said bed is subdivided by numbered transverse lines, and sliding weights having curved peripheries. 3rd. A table game apparatus consisting of the following parts, the bed E provided with the numbered spots e and lines G, the cuts D, pins I and weights H.

No. 8777. Machine for Washing and Wringing Clothes.*(Machine à laver et essorer le linge.)*

Benjamin Armstrong, St. George, Ont., 13th May, 1878, for 5 years.

Claim.—1st. The combination of the spring bar C, side-spring D, movable bearings E, rollers F and G, and crank O of the adjustable elongating pins H, in connection with the wedges I and slats K; 2nd. The combination of the table M having hooks N.

No. 8778. Feed Water Heater.*(Chauffageur de l'eau d'alimentation.)*

John L. Bogert, Flushing, N.Y., U.S., 13th May, 1878, for 5 years.

Claim.—1st. The combination of the feed pump, the pipe thereof, and the injector nozzle arranged to discharge a jet of steam into said pump pipe, both to heat the water and urge it onward; 2nd. The combination of the feed pump the pump pipe, the injector nozzle arranged in said pipe, so as to admit steam which both heats the water passed through the pump and urges it onward and the condensing tube also arranged in the said pipe. 3rd. The combination of the feed pump, the pump pipe, the injector nozzle, the condensing tube and the receiving tube, the last three being arranged in the said pump pipe, so that the steam admitted therein by the injector nozzle both heats the water which is passed through the pump and urges it onward. 4th. The combination of the feed pump, the injector nozzle arranged in the pump pipe, to admit steam which both heats the water passed through the pump and urges it onward, the exhaust steam passage from the steam cylinder, and the pipe connecting the said injector nozzle and said passage; 5th. The combination of the feed pump, the injector nozzle, the exhaust steam passage from the steam cylinder, the pipe connecting the said nozzle and passage, and the check valve for said pipe; 6th. The combination of the feed-pump, the injector nozzle, the exhaust passage from the steam cylinder, the pipe connecting the said nozzle and passage, and the abstracting mouth facing the direction in which the steam passes through the said passage; 7th. The combination of the feed pump, the injector nozzle, the exhaust passage from the steam cylinder, the pipe connecting said injector nozzle and said passage, and the cock for regulating the supply of exhaust steam to said nozzle. 8th. The combination of the feed-pump the injector nozzle, the suction pipe of the pump, and the suction check valve located between the injector nozzle and the tank.

No. 8779. Improvements on Liquid Meters.*(Perfectionnements aux compteurs à liquide.)*

Thomas Walsh, Montreal, Que., 13th May, 1878, for 5 years.

Claim.—1st. The combination of the magnet E, diaphragm B and magnet H. 2nd. The magnet E and diaphragm B, in combination with the magnet I provided with sleeve I and hand N. 3rd. The magnet E, diaphragm B, in combination with the magnet H provided with sleeve I and hand pinion K.

No. 8780. Improvements on Grain Separators.*(Perfectionnements aux séparateurs des grains.)*

John E. Smith, Shiloh, Ohio, U.S., 13th May, 1878, for 5 years.

Claim.—In a grain cleaning machine, the combination with longitudinally vibrating riddle and delivery bottom, of a fan and air shaft, the parts arranged as described, whereby the vibrating delivery plate enters the air shaft and delivers the grain in an intermittent and variable manner, for the more thorough action of the blast thereon.

No. 8781. Improvements in Stench Traps.*(Perfectionnement aux trappes d'égouts.)*

William Stafford, Montreal, Que., 13th May, 1878, for 5 years.

Claim.—Traps cast on the lower part of sink, in combination with sink cap b, strainer c, thumble k, with sides d, pipe f and ferrules g.

No. 8782. Improvements on Washing Machines.*(Perfectionnements aux machines à laver.)*

Thomas DeWitt, Ridgetown, Ont., 13th May, 1878, for 5 years.

Claim.—1st. The rods A A. 2nd. The mode of attaching the crank C to the axle B, by means of the key D; 3rd. The pocket E, attached to the side of the boiler H.

No. 8783. Water Gauge for Steam Boilers.*(Indicateur d'eau pour les chaudières à vapeur.)*

Robert McDonald, Belgrave, Ont., 13th May, 1878, for 5 years.

Claim.—The valve C with the slot H, 2nd. The vent G, in the cap B and spring I.

No. 8784. Clutches for Jib-Sheet Travellers.*(Griffes pour les racambeaux des écoutes de focs.)*

Robert T. Osgood, Orland, Me., U.S., 13th May, 1878, for 5 years.

Claim.—1st. The vibrating tumbler J, consisting of the pin E, upright F and inclined arm G, in combination with the case A, provided with the notch c. 2nd. The pawl H so hinged into the pin E as to form a secure brace when in the catch B of the chamber; 3rd. The long lever S with its roller O, the inclined arm G the short lever P together with the springs L I. 4th. The case A, made with or without flanges, the tumbler J, and its attachments in combination.

No. 8785. Improvements in Stop Cocks.*(Perfectionnements dans les robinets.)*

John Milne, Hamilton, Ont., 13th May, 1878, for 5 years.

Claim.—1st. In combination with the tubes A and H of a stop cock box, of the opening I and wedge J for adjusting and securing the tubes together at any desired point, 2nd. In combination with the upper tubes of a stop cock box, of the plug K and flange, of the cover L, 3rd. A metallic stop cock box constructed of tubes A and H, the upper one having a flanged outer cap L, and an inner cover or plug K, and the two tubes fastened by means of openings I and wedge J or their equivalents, to secure the same together after being adjusted to the proper height.

No. 8786. Improvements on Sewing Machines. (Perfectionnements aux machines à coudre.)

Duncan H. Campbell, Pawtucket, R.I., U.S., 13th May, 1878, for 15 years.
Claim.—1st. A shuttle E, having its point in line with its longitudinal centre, a longitudinal recess *e* at each side and two longitudinal webs *e*, separated by a space or channel *e*; 2nd. A shuttle race C having an inwardly projecting shuttle supporting way or spline *c* on each side thereof, which is broken away on each side at or near the middle of the race; 3rd. A shuttle race C having inwardly projecting shuttle supporting ways or splines *c*, a portion of which is movable for the removal and insertion of the shuttle; 4th. A rectangular shuttle carrier D, mounted on ways *c* or splines *c*, within the shuttle race, and having two oppositely located fingers *d*, for engaging laterally with opposite shoulders of the shuttle, whereby said carrier may control a shuttle in its longitudinal movements without affording any support therefor; 5th. The combination with suitable feeding and thread delivering mechanism of a hooked needle B, a centrally pointed shuttle E, supported within the race by splines or ways *c*, which are broken away adjacent to the needle, and a shuttle carrier D which surrounds the shuttle longitudinally and laterally and loosely engages with its heel and shoulders; 6th. The combination with a hook needle, of a shuttle having a longitudinal groove on its under side, and a projecting stop *e* centrally located in the race C, in front of the hook side of the needle, for preventing a loop entered by the shuttle from being moved forward; 7th. The combination with a hook needle B and presser foot H, of a thread eye K, and a vibrating thread arm L, which is connected and controlled as to the extent of its movement by the presser foot H; 8th. A thread arm L, having a jointed spring tip *l*, which renders the arm rigid when carrying thread, and flexible when returning past the standing thread of a loop; 9th. The combination with a hook needle B and presser foot L, of a vibrating thread eye K (for delivering thread to the needle) which is varied with relation to the extent of its vibratory movement by the location of the presser foot with relation to the work plate *b*; 10th. The combination with the presser foot L, its holder *h* and the main shaft A, of a cam *a* on said shaft, a rod *h* connecting with said cam *a*, a horizontal spring lever *h*, and a self adjusting spring clamp *h*, which uniformly engages with the holder *h* and lifts the presser foot regardless of the varied thickness of material beneath the foot; 11th. The combination with suitable tension devices which will properly permit the delivery of thread to a needle for forming a loop, of a thread wheel lever *l* and an operating lever *o* which positively vibrates the thread wheel lever *l* at intervals, for forcibly taking up the slack thread and tightening the stitches; 12th. The combination with a positively vibrated thread wheel lever *l*, of an adjustable abutment *p*, which limits the movement of said lever; 13th. The combination with a spring tension wheel *l* and a vibrating thread wheel lever *o*, of a brake *n*, which is operated by the thread and thread wheel lever *o*; 14th. In a wax thread machine, a vertical thread tube *m*, located within the head F of the machine and exposed to the heating apparatus M, whereby the thread as it is moved to and fro within the tube *m*, by the action of the needle and take up, is maintained in a well heated condition; 15th. A feeding slide G, provided with upper and lower guide plates *f*, in combination with a machine head F, which is channelled at top and bottom *f*, for the reception of the guide plates of the slide G.

No. 8787. Fire Kindling Apparatus. (Appareil à allumer le feu.)

John Beardi, Franklin, Ind., U.S., 13th May, 1878, for 5 years.
Claim.—The combination of the torch B, consisting of the perforated receptacle *c* and handle *h*, with the can A, screw-cap *a* and guards *b*.

No. 8788. Improvement on Spark-Arresters. (Perfectionnement aux arrête-flammèches.)

Robert Brayton, David June and Oratus S. French, Fremont, Ohio, U.S., 15th May, 1878, for 5 years.
Claim.—1st. The elongated inverted cone I I and its connection with the nozzle H, either by the wings I I entering into the nozzle H or projecting over it, and thus preventing any displacement; 2nd. The nozzle H recessed and counterbored to receive the cone I I, or turned off on the outside to fit into recess in point of cone, thus insuring by aid of the wings or divisions of the elongated cone I I, a perfect and equal distribution of the exhaust steam into reservoir D D.

No. 8789. Improvements in Cultivators. (Perfectionnements dans les cultivateurs.)

Robert H. Dewar, Stony-Creek, Ont., 16th May, 1878, for 5 years.
Claim.—A narrow cultivator constructed of the hinged front and end bars D E, draft bars M, cross bars F G, crossed diamond shaped and a tooth H passing through each point of contact of said bars, and secured by nuts L; 2nd. In combination with the hinged frames A B, of the rows of metal teeth I constructed of different lengths and provided with square shoulder J, threaded elongation J and curved steel point K; 3rd. The combination of the hinged front and rear bars D E, cross bars F G, draught bars M, curved steel pointed teeth I, the rows of teeth increasing in size from front to rear.

No. 8790. Process of Colouring Photographic Pictures. (Procédé pour colorer les images photographiques.)

John S. Hulett, Napanee, Ont., 16th May, 1878, for 5 years.
Claim.—1st. The board D and the frame F; 2nd. The use of albumen, in combination with the other parts of the process, in connection with the machine.

No. 8791. Improvements on a Ship's Anchor. (Perfectionnements à une ancre de navire.)

Samuel H. Stockton, St. John, N.B., 16th May, 1878, for 5 years.
Claim.—The combination of the base of the stock A with the arms *b b* having rounded angles, so that it is impossible for the chains of the anchor to get folded or fastened in the stock.

No. 8792. Improvements in Furnaces. (Perfectionnements dans les fourneaux.)

Thomas W. Williams, Swansea, Wales, 16th May, 1878, for 5 years.
Claim.—The combination and arrangement of the tube E *e* and smaller tubes and nozzles F, as used in connection with the hollow perforated fire bars of furnaces.

No. 8793. Improvements in Rotary Engines. (Perfectionnements aux machines rotatives.)

Nils Nilson, Minneapolis, Min., U.S., 16th May, 1878, for 5 years.
Claim.—1st. The combination of the rotating cylinder C having steam chambers C and abutments E, with the inferiorly arranged guide plate *i*, having segments recesses *g*; 2nd. The combination of the rotating cylinder C and the disc D having perforations *h* and *h* for the induction and escape of the steam or other motive power, steam chest H, induct pipe I, and the rotary steam, water, or air engine described, consisting of the rotating cylinder C, having circumferential steam chambers C and sliding abutments E, in combination with the stationary guide-plate G, stationary disc D steam chest H, adjustable slide valves *l*, induct pipe I and escape pipe I.

No. 8794. Improvements on Threshing Machines. (Perfectionnements aux machines à battre.)

Jonathan Brown, Ashbur, Ont., 16th May, 1878, for 15 years.
Claim.—1st. The combination of the cylinder *b*, concave *c* and one or two blocks *d*, the concave and blocks being provided with the spiral ribs *e*, whereby the seed is discharged at one or both ends of the cylinder; 2nd. The ribs *d* upon the surface surrounding the cylinder, whereby the seed is carried around spirally and made to move faster; 3rd. The hinged door *j* and slide *l*, for distributing the seed over the surface of the shaker; 4th. The cover *g* *m* under the cylinder *b*, in combination with the cover *n*; 5th. The movable extension bolt *p*, in combination with the shaker *h*; 6th. The board or plate *q* secured in the front end of the shoe, so as to catch the seed as it falls through the shaker *h* and convey it to the screen.

No. 8795. Improvements on Sewer Traps. (Perfectionnements aux trappes d'égouts.)

Buckland P. Bower, Cleveland, Ohio, U.S., 16th May, 1878, for 5 years.
Claim.—1st. A chamber having an induction pipe leading therefrom and an induction pipe extending downwardly below the line of standing water in said chamber, the lower end of said pipe constituting a valve seat, which later is closed by a valve that acts by its floating pressure to close the valve seat; 2nd. In a trap, a removable gas section formed at the bottom so as to stand erect without support, when removed from the trap; 3rd. In a trap, a glass section, screw cut at the top, for attachment to the adjacent portion of the trap; 4th. In a trap provided with a glass section, the combination with said trap and glass section, of an interposed gasket of rubber or equivalent material; 5th. A sediment chamber formed of glass; 6th. In combination with a trap embracing valve mechanism, a removable section D of glass located, with respect to the valve mechanism, so as to expose the same to view; 7th. In combination with a trap embracing valve mechanism, a removable section D of metal, glass, or any suitable material; 8th. In combination with a trap embracing valve mechanism, a section or window of glass located, with respect to said valve mechanism, so as to expose the same to view.

No. 8796. Improvements on a Cider Mill. (Perfectionnements à un pressoir à cidre.)

Thomas F. Brown, (Assignee of Ladore V. Sikes,) East Otto, N. Y., 15th May, 1878, for 15 years.
Claim.—A cider mill in which the press and grinder are arranged at opposite ends of a truck B, on a platform inclined from said ends to the middle, and there provided with gutter *a*.

No. 8797. Coin Envelope. (Porte-monnaie.)

Charles F. Trout, Boston, Mass., U.S., 16th May, 1878, for 5 years.
Claim.—1st. The coin envelope composed of the strap and pocket or loop; 2nd. The loop and the strap and the elastic ring.

No. 8798. Improvements on Brooms. (Perfectionnements aux balais.)

Joseph Lay, Olmstead Falls, Ohio, U.S., 16th May, 1878, for 5 years.
Claim.—1st. The splints or brush core A secured together and to the handle having a tapering or pointed end, by nails or rivets surrounded by an external covering of splints or brush secured to said handle, and to the core or filling by one or more bands with nails or rivets; 2nd. A broom made up of splints which are split or divided into two or more parts, about half their length more or less, forming the core or covering, or both, and secured together and to the handle by means of two or more bands and nails, or their equivalents.

No. 8799. Improvement on Benches. (Perfectionnement aux bancs.)

Austin D. Cable and William L. Thompson, Montreal, Que., 16th May, 1878, for 5 years.
Claim.—1st. The catch or support Q to be used with a folding bench; 2nd. The catch or support R used in combination with the catch Q in a folding bench; 3rd. The catch or grip S and the slat P, applied to a table panel set upon a folding bench, for the purpose of securing said panel to the bench; 4th. In a folding bench, the combination of catches I and Q and the vertical piece B, with legs D and slats A; 5th. The combination with a folding bench, of a panel to form a table, or of a seat to form a part bench, and of a saw buck.

No. 8800. Improvements on Lamp Burners. (Perfectionnements aux becs des lampes.)

Charles C. Richmond, Boston, Mass., U.S., 20th May, 1878, for 5 years.
Claim.—1st. The adjustable sleeve C, of the form of an inverted bell, and having an outer passage or space *d*, between it and the cone B, and an inner passage or space *f* between it and the wick tube *h*, on each side thereof; 2nd. The perforated sleeve D, having its upper edge in contact with the cone B, and an air passage *l* between its base and the wick tube on each side thereof.

No. 8801. Stove and Furnace Grate. (Grille de poêle et de fourneau.)

Samuel Smith, East Bridgewater, Pa., U.S., 20th May, 1878, (Extension of Patent No. 2960,) for 5 years.

No. 8802. Improvements on Grinding Mills.*(Perfectionnements aux moulins à blé.)*

The Self-Adjusting Millstone Co., (Assignees of William M. Woodbury and George W. Baker,) Rochester, N. Y., U. S., 20th May, 1878, (Extension of Patent No. 6339,) for 5 years.

No. 8803. Improvements on Grinding Mills.*(Perfectionnements aux moulins à blé.)*

The Self-Adjusting Millstone Co., (Assignees of William M. Woodbury and George W. Baker,) Rochester, N. Y., U. S. 21st May, 1878, (Extension of Patent No. 6339,) for 5 years.

No. 8804. Improvements on Brooms.*(Perfectionnements aux balais.)*

Edward E. Carpenter, James C. Porter, Victor A. Rice and Milton J. Porter, Olmsted Falls, Ohio, U. S., 21st May, 1878, for 5 years.

Claim.—The handle A, having its lower end bevelled off, the bands B and D, and the malleable nails c and d, securing the bands and brush to the handle A.**No. 8805. Method of Preserving Animal Matter.***(Mode de conservation des matières animales.)*

George W. Scollay, New York, U. S., 22nd May, 1878, (Extension of Patent No. 2400,) for 5 years.

No. 8806. Hot Water Boiler.*(Calorifère à eau.)*

Enoch B. Butterworth Ottawa Ont 22nd May, 1878, for 5 years.

Claim.—1st. The arrangement and combination of the draft tubes E, smoke box G, smoke spaces F¹ F² F³, base of smoke space H¹ and B, draft hole O, smoke jacket W, smoke ring N, smoke flue D and D² dampers H H¹ and C, stopper G¹, division F², 2nd In combination with a base burning steam or hot water boiler, of the bracket Q, the lower section of the outside casing E¹, with boiler base D.**No. 8807. Improvements in Metal Packages.***(Perfectionnements dans les boîtes métalliques.)*

John F. Ross, Toronto, Ont., 22nd May, 1878, for 5 years.

Claim.—1st. The heads D, provided with the slitted differentially inclined edge C, in combination with the cylinder A, provided with the recess B and having the upper lapping edge slitted and inflected to correspond with the heads. 2nd. The bail E, and pivoted lugs E, in combination with the cylindrical package A, provided with the groove a, or its equivalent; 3rd. A fastening for the head of cylindrical packages consisting of the slitted differentially inclined edge C, and a recess B, with a lapping, slitted and inflected edge to correspond with the slitted edge C.**No. 8808. Machine for Sharpening Horse-Shoes.***(Machine à aiguiser les fers à cheval.)*

Robert S. Bailey, West-Concord, Vt., U. S., 22nd May, 1878, for 5 years.

Claim.—The combination of the vice and anvil B, horn C and incline D, also spring E with treadle F.**No. 8809. Improvements on Waggon Jacks.***(Perfectionnements aux chèvres à voitures.)*

William T. Wallace and James Johnston, Brockport, (Assignees of Marvin C. Flanders, Koudal,) N. Y., U. S., 22nd May, 1878, for 5 years.

Claim.—The spring rod fender F, incline guide I and lug g, by which the pawl p is taken above the ratchet without catching in the teeth, in combination with the ratchet plates R, standard S, lever L and pawl P, staple a, hasp h, fulcrum pin p, perforations p₁ and base B.**No. 8810. Machine for Grinding Bark.***(Machine à triturer l'écorce.)*

William E. Nickerson, Somerville, Mass., U. S., 22nd May, 1878, for 5 years.

Claim.—1st. The combination of the feeding roll C, curved table A d e and grinding cylinder H; 2nd. The combination of the table K having its end formed into projections a' recesses with the grinding cylinder N.**No. 8811. Improvements on Cultivator Frames.***(Perfectionnements aux bâtis des cultivateurs.)*

William W. Cowan, Stratford, Ont., 22nd May, 1878, for 5 years.

Claim.—1st. The shape or form of the frame A A; 2nd The combination of the frame A with the teeth B; 3rd. The combination of the socket or groove C, with the frame A and the tongue D.**No. 8812. Process for Treating Sludge Oil.***(Procédé de traitement des huiles lourdes.)*

Walter P. Jenney, Brooklyn, N. Y., U. S., 22nd May, 1878, for 15 years.

Claim.—1st The process of manufacture for producing from sludge or sludge oil, the manufacture or substance described, and possessing the properties or quantities substantially as described, by oxidizing the sludge oil by sulphuric acid 2nd The new substance or manufacture described, being partially oxidizing fluid, sludge oil possessing the properties of quantities described, 3rd. The new manufacture of paint described and possessing the properties or qualities described, composed of a vehicle consisting in whole or in part of oxidized sludge oil and suitable solid substance or base; 4th The new manufacture or copper paint described and possessing the qualities or properties described, composed of a vehicle consisting in whole or in part of oxidized sludge oil, and a suitable body containing copper as described.**No. 8813. Machine for Extracting Rocks and Roots.***(Machine pour enlever les pierres et les racines.)*

George A. Flewell, Uxbridge, Ont., 22nd May, 1878, for 5 years.

Claim.—1st. The combination in a root and rock extractor of a triangular frame, consisting of the upright timbers a, brace b and axle c, and meeting at the apex a parallel frame consisting of upright a' and cross braces c'. The two frames being also braced together, the front frame fits over an axle working on a king bolt, both front and rear axles being provided with broad wheels W W, the whole forming a vehicle for, and in combination with a stump and rock extractor. 2nd. The combination of two ratchet-wheel m, ratchet P, latch lever Q, lever cord R, main lever I I having low brace J ball balance l and pulley g, rope e, pulley f and whistletree h, with the four wheeled vehicles as described.**No. 8814. Improvements on Carriage Pole Holdbacks.***(Perfectionnements aux rayots des timons de voitures.)*

Samuel Maneer, Craigvale, Ont., 22nd May, 1878, for 10 years.

Claim.—The adjustable cap, (or hold back) with the facet or button for the purpose set forth, namely, to lengthen or shorten the distance between the whistletrees and the holdback, at will, and to secure the neck yoke from slipping from waggon and sleigh tongs, by the facet or button.**No. 8815. Improvements in Horse Detachers.***(Perfectionnements dans les palonniers.)*

Charles O. Baker and William Klino, Grand-Rapids, Wis., U. S., 22nd May 1878, for 5 years.

Claim.—The combination of the spring rods c d, cranked levers e, spring catches f, and rods o.**No. 8816. Improvements on Coffin Shields.***(Perfectionnements aux boîtes à cercueils.)*

Alton H. Mooers, North-Ridgeville, Ohio, U. S., 22nd May, 1878, for 5 years.

Claim.—The metal shield A, provided with a flange C and arms D, in combination with a coffin.**List of Patents issued up to 22nd June, 1878, but not yet Officially published in the Patent Office Record.**

No. 8817. H. A. J. Compel and J. A. Dingens, Buffalo, N. Y., U. S. A., "Printers' Quoin," 22nd May, 1878.

No. 8818. D. C. Newell, New York, U. S. A., "Grinding Mill," 22nd May 1878.

No. 8819. L. Patterson, Park St., Pa., U. S. A., "Hinge," 22nd May, 1878.

No. 8820. W. McCord, Sing-Sing, and W. R. McCord, Jr., New York, U. S. A., "Scale Beam Spring," 22nd May, 1878.

No. 8821. J. M. Lewin, Lockport, N. Y., U. S. A., "Bottle Stopper," 22nd May, 1878.

No. 8822. J. Murhead, Jr., Westminster, and H. A. Taylor, London, Eng., "Electric Telegraph and Apparatus Connected therewith," 22nd May, 1878.

No. 8823. R. B. Sanderson, Bridgewater, Pa., U. S. A., "Bracket," 22nd May, 1878.

No. 8824. M. B. H. J. and J. W. Hawley and J. Wade, Canandaigua, N. Y., U. S. A., "Bag Holder," 22nd May, 1878.

No. 8825. T. Bingham and T. J. McTighe, Pittsburgh, Pa., U. S. A., "Low Water Signal," 22nd May, 1878.

No. 8826. D. E. Cooke and G. C. Schultz, Brantford, Ont., "Window Frame and Sash," 22nd May, 1878.

No. 8827. J. Haggas, Uxbridge, and W. Gooderham, Jr., Toronto, Ont., "Water Elevator for Locomotives," 27th May, 1878.

No. 8828. F. A. Havens, Wethersfield Ct., U. S. A., "Waggon and Gate Catch," 27th May, 1878.

No. 8829. C. P. Hoffman, Buffalo, N. Y., U. S. A., "Blind Stitch Sewing Machine," 27th May, 1878.

No. 8830. J. E. Underwood, Toronto, Ont. "Flat Iron Heater," 27th May, 1878.

No. 8831. J. D. Smith, Rockford, Ill., U. S. A., "Stump Extractor," 27th May, 1878.

No. 8832. A. Martin, Big Rapids, Mich., U. S. A., "Saw Filing Machine," 27th May, 1878.

No. 8833. C. H. McCaw and T. Brown, Port Perry, Ont., "Stove," 27th May, 1878.

No. 8834. J. H. Light, Calhoun, Miss., U. S. A., "Bee Hive," 27th May, 1878.

- No. 8335. J. W. Gaff, Cincinnati, Ohio, U. S. A., "Process of Reducing Vegetable Substances for Saccharification," 27th May, 1878.
- No. 8336. M. W. Kidder, Boston, Mass., U. S. A., "Process and Apparatus for Generating and Purifying Gas," 27th May, 1878.
- No. 8337. J. S. Whetored, New York, U. S. A., "Paving Concrete," 27th March, 1878.
- No. 8338. F. Knapp, Brunswick, Germany, "Chemical Compound for Treating Hides, &c.," 27th May, 1878.
- No. 8339. B. Cokley and J. F. Shelden, Mooers, N.Y., U.S.A., "Churn," 27th May, 1878.
- No. 8340. W. F. Wilkins and J. T. Sawyer, Montreal, Que., "Washing Machine," 27th May, 1878.
- No. 8341. F. Latulippe, St. Michel, Que., "Barley Cleaner and Polisher," 27th May, 1878.
- No. 8342. J. Goulliond, Montreal, Que., "Corset," 27th May, 1878.
- No. 8343. L. Gibbs and W. Gibbs, Canton, Ohio, U.S.A., "Breast Collar for Horses," 27th May, 1878.
- No. 8344. J. A. Murray, Yarmouth, N.S., "Artificial Stone," 27th May, 1878.
- No. 8345. F. F. Adams, (Assignee of M. N. Lovell,) Erie, Pa., U. S. A., "Wringer," 27th May, 1878.
- No. 8346. R. T. Osgood, Orland, Me., U. S. A., "Protractor," 27th May, 1878.
- No. 8347. F. Stewart and O. F. Scudder, St. Louis, Mo., U.S.A., "Hose Coupling," 27th May, 1878.
- No. 8348. D. C. Peppard, Great Village, N.S., "Ship's Windlass," 27th May, 1878.
- No. 8349. O. H. Arno, Somerville, and J. E. Turner, Cambridge, Mass., U.S.A., "Mechanical Musical Instrument," 31st May, 1878.
- No. 8350. J. B. Dougherty, Rochester, N. Y., U. S. A., "Hoop Cutter," 31st May, 1878.
- No. 8351. W. H. Mead and E. J. Davis, (Assignees of E. Mead,) Galway, N.Y., U.S.A., "Window Sash Holder," 31st May, 1878.
- No. 8352. J. Mills, Milwaukee, Wis., U. S. A., "Middlings Mill," 31st May, 1878.
- No. 8353. C. H. Vout6 and E. S. Piper, Toronto, Ont., "Metallic Sign for Street Lamps," 31st May, 1878.
- No. 8354. D. F. Van Liew, Aurora, Ill., U.S.A., "Grain Doors for Freight Cars," 31st May, 1878.
- No. 8355. N. Thompson, 23 Southampton Buildings, Eng., "Fastener for Doors, &c.," 31st May, 1878.
- No. 8356. J. Wright, Colpoys Bay, Ont., "Gate," 31st May, 1878.
- No. 8357. F. Knapp, Brunswick, Germany, "Tanning Process," 31st May, 1878.
- No. 8358. R. H. Oates, Toronto, Ont., "Portable Feed Chopping Mill," 31st May, 1878.
- No. 8359. C. O. Hammer, Pittsburg, Pa., U. S. A., "Bottle Stopple," 31st May, 1878.
- No. 8360. R. W. Cowan and C. Pagé, Montreal, Que., "Flying Machine," 31st May, 1878.
- No. 8361. N. B. Cooksey, Allamont, Ill., U. S. A., "Gate," 31st May, 1878.
- No. 8362. M. S. Husha and Owen Connelly, Chicago, Ill., U. S. A., "Washing Machine," 31st May, 1878.
- No. 8363. E. B. Butterworth, Ottawa, Ont., "Heating Apparatus," 31st May, 1878.
- No. 8364. A. N. Burbank, (Assignee of A. H. Fisher,) Bellows Falls, Vt., U.S.A., "Art of Reducing Wood to Pulp," 31st May, 1878.
- No. 8365. J. Tirrell, Boston, Mass., (Assignee of C. F. Mudge and G. Whittaker, Brooklyn, N. Y.,) U. S. A., "File Cutting Machine," 31st May, 1878.
- No. 8366. E. G. Libby, Medford, Mass., U.S.A., "Turbine," (Extension of Patent No. 2412,) 4th June, 1878.
- No. 8367. E. P. Cowan, Germantown, Pa., U. S. A., "Shawl Strap and Head-Rest Combined," 4th June, 1878.
- No. 8368. J. G. Moore, Lisbon, N. H., U.S.A., "Art of Reducing Wood to Pulp," 4th June, 1878.
- No. 8369. M. Calhoun, Camaron, and S. Edge, Fort Union, Mexico, U.S.A., "Hame Fastenings," 4th June, 1878.
- No. 8370. V. H. Felt, Kendall, N.Y., U.S.A., "Lifting Jack," 4th June, 1878.
- No. 8371. S. S. Burr, Dedham, Mass., U.S.A., "Folding Bedstead," 4th June, 1878.
- No. 8372. Elisha Gray, Chicago, Ill., U. S. A., "Speaking Telephone," 4th June, 1878.
- No. 8373. C. E. Darling, Lewiston, Me., U.S.A., "Ventilator," 4th June, 1878.
- No. 8374. W. W. Snyder, Martinsville, Ohio, U. S. A., "Flue Ditcher," 4th June, 1878.
- No. 8375. C. E. Fosburgh, Louisville, Ky., U.S.A., "Carriage and Buggy Top," 4th June, 1878.
- No. 8376. T. Galloway and J. Larsen, Oshawa, Ont., "Spring Hoe," 4th June, 1878.
- No. 8377. C. P. Rockhill, Toronto, Ont., "Weed Extirpator," 4th June, 1878.
- No. 8378. Hon. D. E. Price, Chicoutimi, Que., "Fish Register," 4th June, 1878.
- No. 8379. J. Milne, Hamilton, Ont., (Assignee of G. Patterson, St. Catharines, Ont.,) "Wagon Arm and Draw Jack Combined," 4th June, 1878.
- No. 8380. D. A. Calkins, Mense, Mass., U. S. A., and J. W. Elliott, Toronto, Ont., "Hay Rake and Tedder," 4th June, 1878.
- No. 8381. E. H. Gratot, Platteville, Wis., U. S. A., "Grain Heater," 4th June, 1878.
- No. 8382. H. H. Norrington, West Bay City, Mich., U.S.A., "Bank Check Book," 4th June, 1878.
- No. 8383. W. Spelman, Portland, Me., U. S. A., "Row Lock," 4th June, 1878.
- No. 8384. C. H. Labelle, Keeseville, New York, U.S.A., "Mortise Lock," 4th June, 1878.
- No. 8385. E. G. Randall, Boston, Mass., U. S. A., "Hand Stamp," 5th June, 1878.
- No. 8386. R. M. Wanzer, (Assignee of G. Webster, Jr.,) Hamilton, Ont., "Bobbin Winders," 8th June, 1878.
- No. 8387. T. C. Hewitt, Brantford, Ont., (Assignee of C. H. Smith, Chicago, Ill., U.S.A.,) "Lightning Rods," 8th June, 1878.
- No. 8388. W. C. Grayton, Chicago, Ill., U. S. A., "Window Cleaner," 8th June, 1878.
- No. 8389. S. Ruggles, Three Rivers, and G. Robinson, Palmer, Mass., U.S.A., "Potato Bug Extirminator," 8th June, 1878.
- No. 8390. J. F. Allen, Brooklyn, N. Y., U. S. A., "Rivetting Machine," 8th June, 1878.
- No. 8391. J. Tirrell, Boston, Mass., U.S.A., (Assignee of C. F. Mudge and G. Whittaker, Brooklyn, N.Y., U.S.A.,) "Rasp Machine," 8th June, 1878.
- No. 8392. W. F. Glass, Cleveland, Ohio, U.S.A., "Apparatus for Pumping Fluids from Casks, &c.," 8th June, 1878.
- No. 8393. T. Hodgson, Amherst, N. S., "Saw Grinder," 8th June, 1878.
- No. 8394. B. F. Moss, J. D. Abbott and A. M. R. Fitzsimmons, Reading, Mich., U.S.A., "Saw Handle," 8th June, 1878.
- No. 8395. A. M. Smith, Drummondville, Ont., "Fruit Crate," 8th June, 1878.
- No. 8396. M. Willis, Skowhegan, Me., U. S. A., "Stocking Darning Block," 8th June, 1878.
- No. 8397. J. H. Kiley, Hamilton, Ont., "Apparatus for Assisting Combustion under Steam Boilers," 8th June, 1878.
- No. 8398. W. Silverthorn, Windham, Ont., "Cultivator," (Extension of Patent No. 2456,) 10th June, 1878.
- No. 8399. F. G. Tibbitts, Philadelphia, Pa., U.S.A., (Assignee of T. S. C. Lowe, Norristown, Pa., U. S. A.,) "Gas Apparatus," (Extension of Patent No. 6475,) 11th June, 1878.
- No. 8400. F. G. Tibbitts, Philadelphia, Pa., U.S.A., (Assignee of T. S. C. Lowe, Norristown, Pa., U. S. A.,) "Gas Apparatus," (Extension of Patent No. 6475,) 12th June, 1878.
- No. 8401. H. Parker, Gananoque, Ont., "Potato Digger," 13th June, 1878.
- No. 8402. D. H. Têtu, South Point, Anticosti Island, Que., "Mole and Apparatus for Drying Fish, &c.," 13th June, 1878.
- No. 8403. A. J. Hopkins, (Assignee of H. M. Wyeth,) Richmond, Ind., U. S. A., "Anti-Freezing Force Pump," 13th June, 1878.
- No. 8404. E. C. Frost, Elmira, N. Y., U.S.A., "Range," 13th June, 1878.
- No. 8405. J. H. Shant, Hornellsville, N.Y., U.S.A., "Oil Burning Stove," 13th June, 1878.
- No. 8406. S. Drayton, Toronto, Ont., "Picture Frame," 13th June, 1878.
- No. 8407. J. M. Palmer, Cambridge, Mass., U.S.A., and C. A. Shaw, Salem, Mass., U. S. A., "Gas Carburetter," 13th June, 1878.
- No. 8408. J. G. Phillips, Bangor, N. Y., U. S. A., "Door Fastening" (Extension of Patent No. 6830,) 13th June, 1878.
- No. 8409. H. W. Adams, Philadelphia, Pa., U. S. A., "Process and Apparatus for Manufacturing Illuminating Gas," 13th June, 1878.
- No. 8410. W. R. Morris and J. Slanser, La Rue, Ohio, U. S. A., "Frame Building," (Extension of Patent No. 8264,) 13th June, 1878.
- No. 8411. W. R. Morris and J. Slanser, La Rue, Ohio, U. S. A., "Frame Building," (Extension of Patent No. 8264,) 14th June, 1878.
- No. 8412. J. S. Kempf, Magog, Que., and W. McH. Burpee, Derby, Vt., U.S.A., "Manure Spreading and Drilling Machine," (Extension of Patent No. 8752,) 17th June, 1878.
- No. 8413. J. S. Kempf, Magog, Que., and W. McH. Burpee, Derby, Vt., U.S.A., "Manure Spreading and Drilling Machine," (Extension of Patent No. 8752,) 18th June, 1878.
- No. 8414. J. Farmer, Hamilton, Ont., "Churn Dasher," 18th June, 1878.
- No. 8415. J. Lavecey, Westminster, Middlesex Co., and J. Kild, Wandsworth, Surrey Co., Eng., "Lighting Apparatus," 21st June, 1878.
- No. 8416. A. D. Elbers, Hoboken, N.J., U. S. A., "Apparatus for Separating or Purifying and Treating Mineral Wool and Manufacturing the same into Wadding, &c.," 22nd June, 1878.

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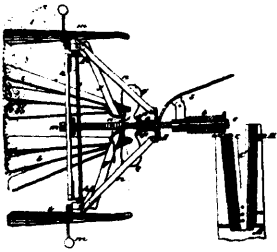
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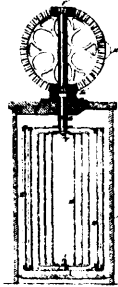
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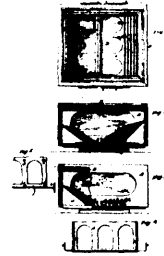
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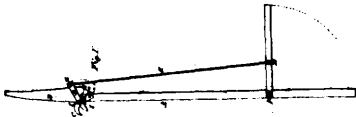
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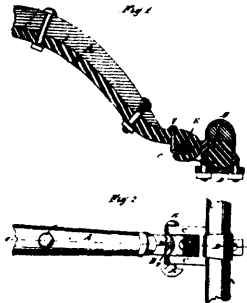
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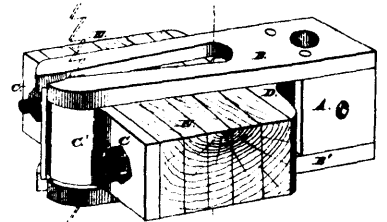
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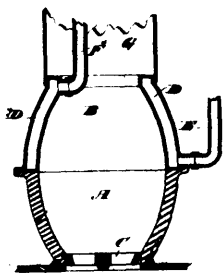
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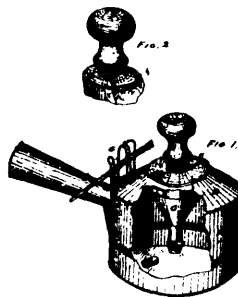
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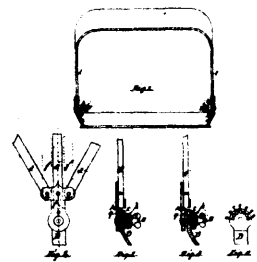
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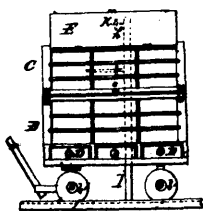
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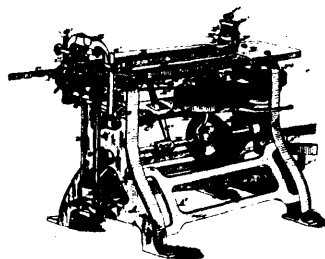
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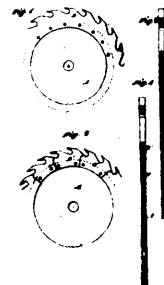
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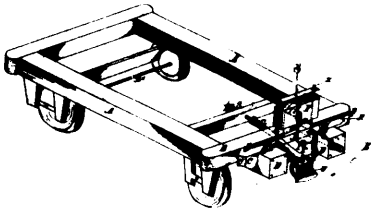
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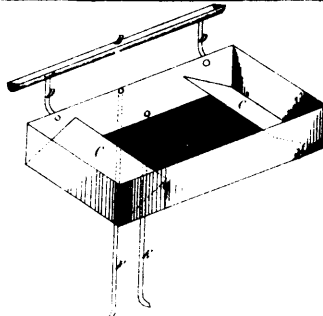
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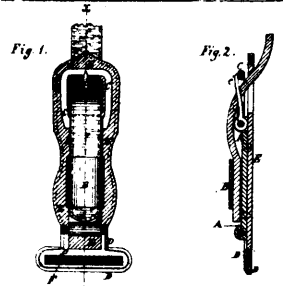
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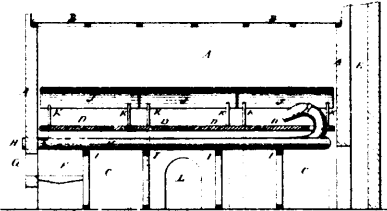
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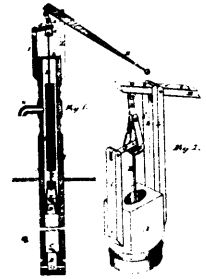
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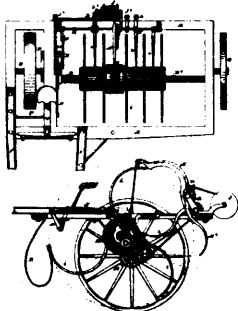
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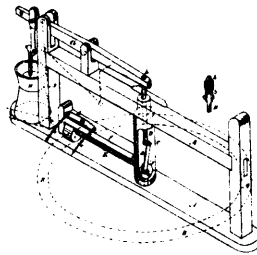
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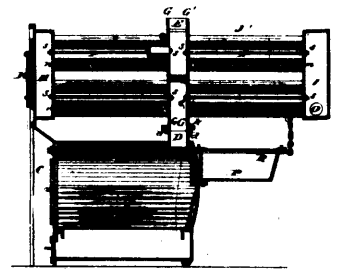
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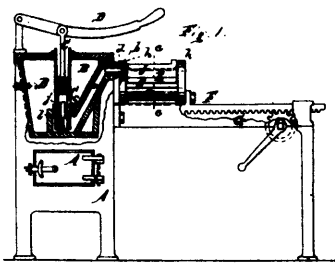
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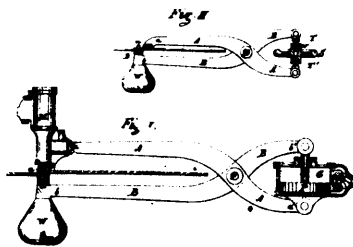
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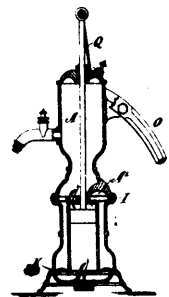
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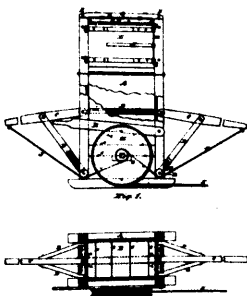
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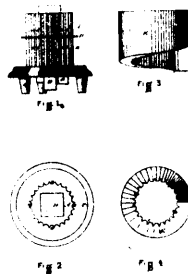
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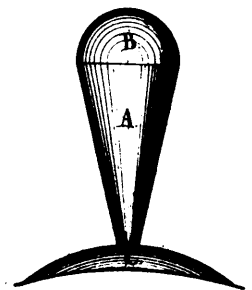
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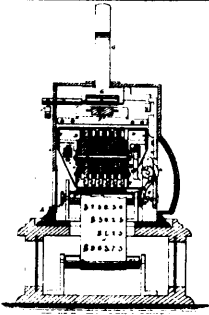
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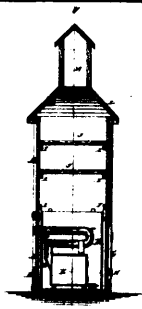
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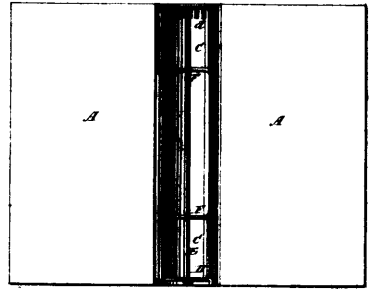
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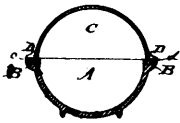
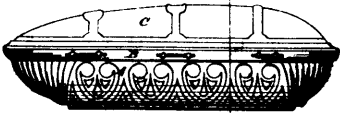
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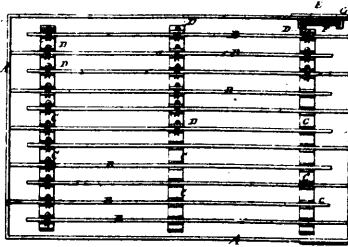
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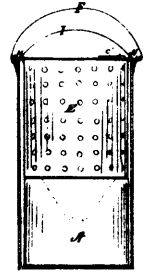
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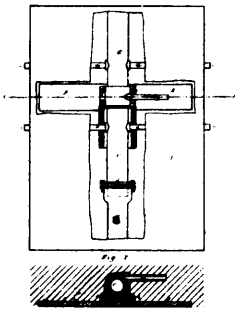
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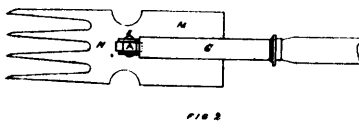
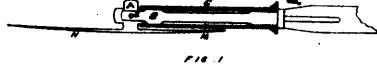
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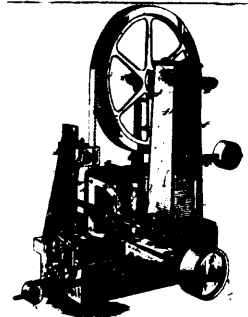
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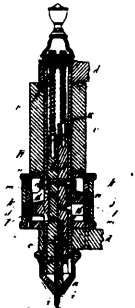
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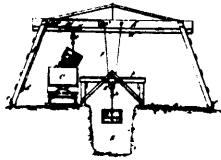
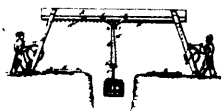
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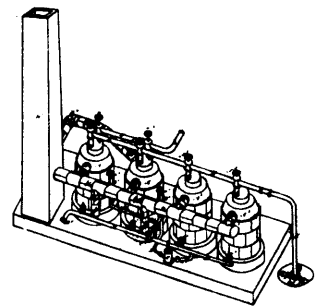
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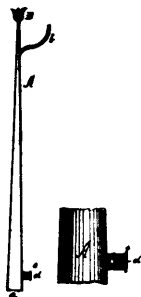
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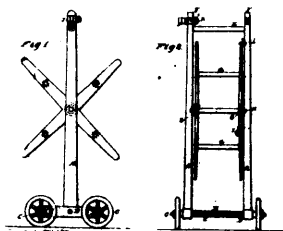
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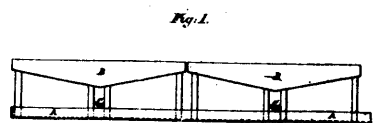
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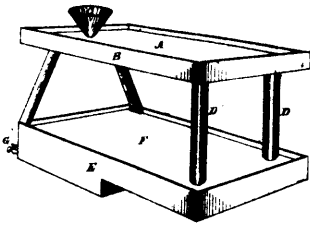
8726 Scattergood's Improvements on Gas Lighters.



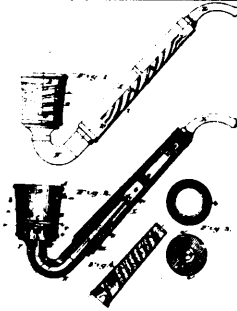
8727 Douglass' Improvements on Hose Reels.



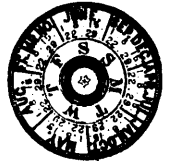
8728 Ramsford's Apparatus for the Manufacture of Salt.



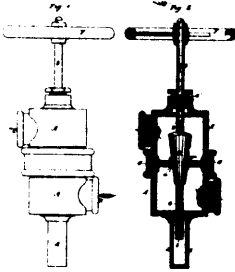
8730 Moore's Improvements on Fruit Dryers.



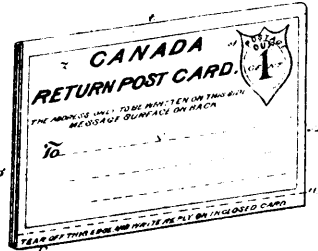
8731 Davis' Improvements on Tobacco Pipes.



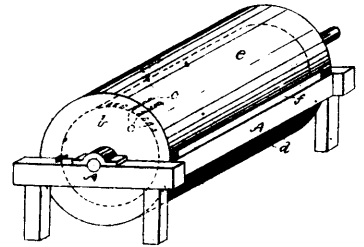
8732 Kitchen's Improvements on Calendars.



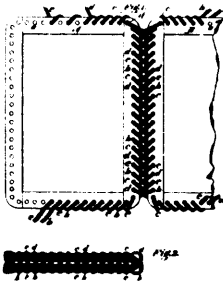
8733 Holly's Improvements on Meter Valves.



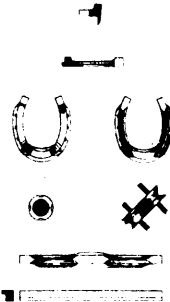
8734 Brooks' Improvements on Postal Cards.



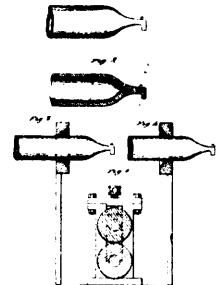
8735 Shaw's Bark Cutting Machine.



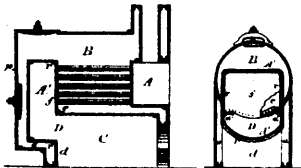
8736 Goodrich's Improvements on Slates.



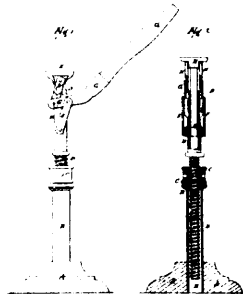
8737 Russell, Reimer & Moller's Improvements on Horse Shoes.



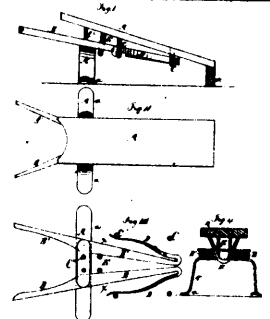
8738 McKenzie's Improvements in the Manufacture of Tubing.



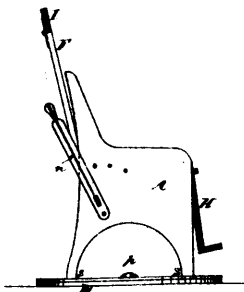
8740 Fitzgibbons' Improvements in Steam Boilers.



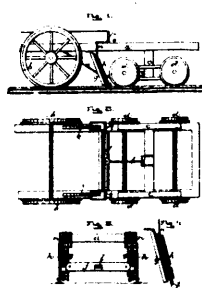
8741 Fayette's Improvements on Lifting Jacks.



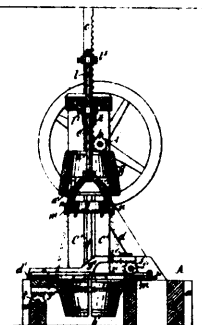
8742 Roberts' Improvements on Boot Jacks.



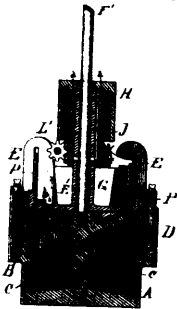
8743 Jones' Improvements in Invalids' Chairs.



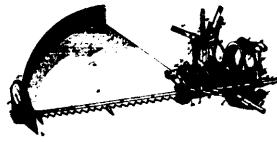
8744 Royal's Device for Cleaning Railway Rails.



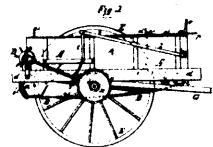
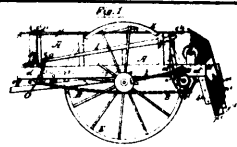
8745 King's Barrel Trussing Machine.



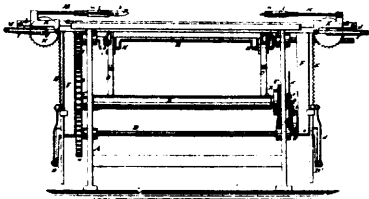
8750 Ridsen & Tyler's Improvements on Turbine Wheels.



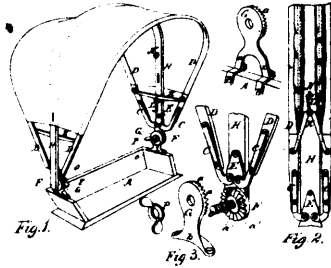
8751 Brown & Adriance's Improvements in Harvesters



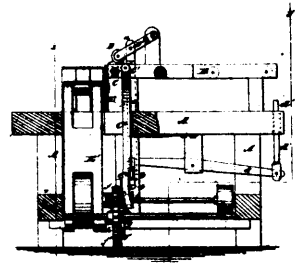
8752 Kemp & Burpee's Machine for Spreading Manure.



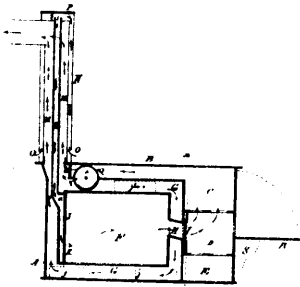
8753 Woodman's Improvements on Looms.



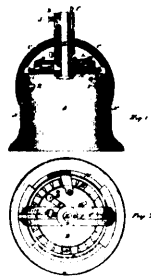
8754 Fockler's Improvements in Vehicle Tops.



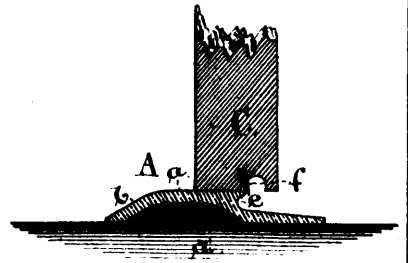
8755 Kautz's Improvements on Circular Sawing Machines.



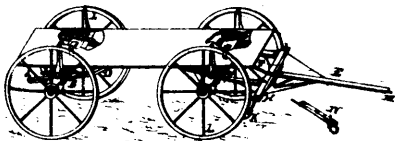
8756 Sheffield & McKee's Improvements in Stoves.



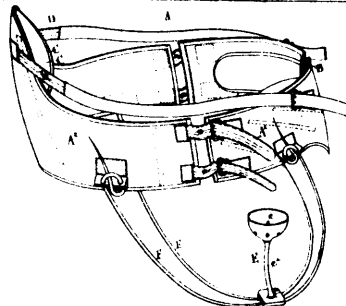
8759 Cliff & Shaw's Improvements on Knitting Machines.



8760 Buston's Cast Iron Door Saddle.



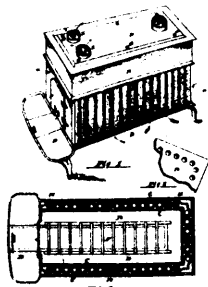
8761 Bellamy's Improvements in Vehicle Gears.



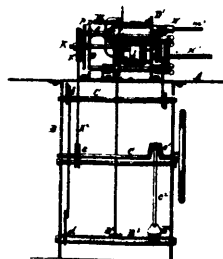
8762 Lang's Improvements in Abdominal Supporters.



8763 Barnes' Improvements on Cricket Bats.



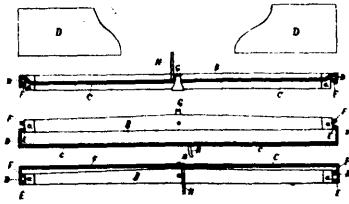
8764 McCaw & Brown's Improvement on Stoves.



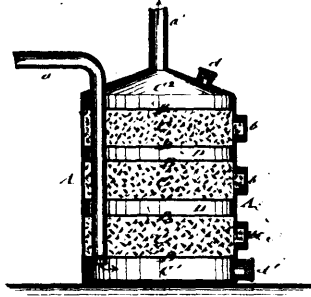
8765 Hachnell's Improvements on Cigar Machines.



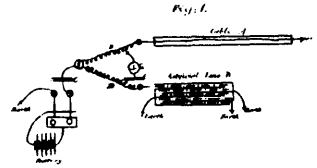
8766 Hachnell's Cigar Wrapper Cutter.



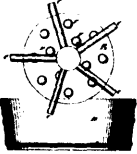
8767 MacKinnon's Improvements in Whiffletrees.



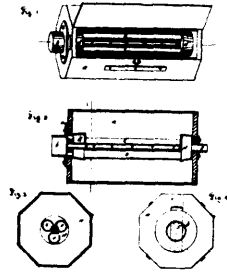
8768 Booth & Esser's Improvements on Gas Purifiers.



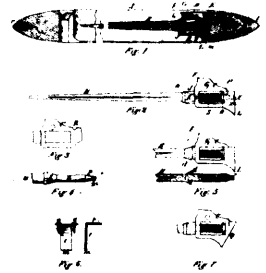
8769 Muirhead's Improvements on Electric Telegraphs.



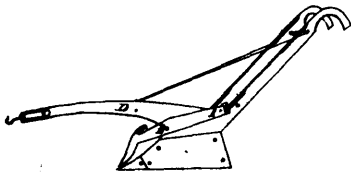
8770 Hutchins' Improvements on Washing Machines.



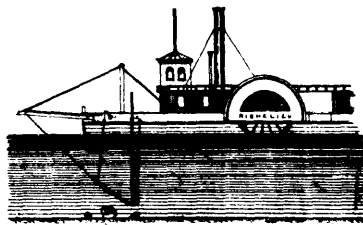
8771 Bonney's Improvements on Feather Renovators.



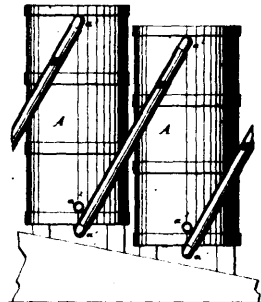
8772 Palmer & Shaw's Improvements on Loom Shuttlers.



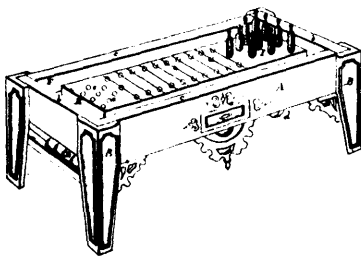
8773 Snider's Improvements on Plough Coulters.



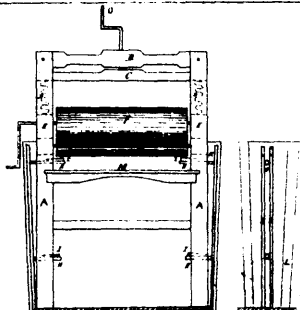
8774 L'Veillé's Improvements on Sounding Apparatus.



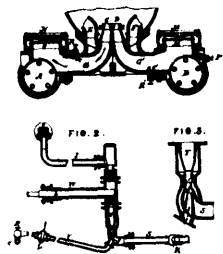
8775 Gennert's Improvements in Extracting Sugar from Vegetable Substances.



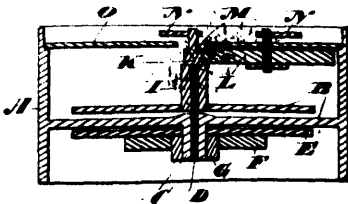
8776 Witsil's Improvements on Table Games.



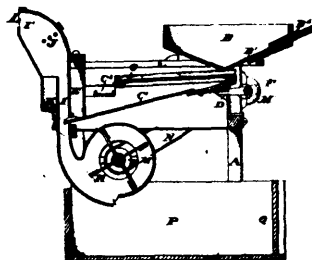
8777 Armstrong's Machine for Washing and Wringing Clothes.



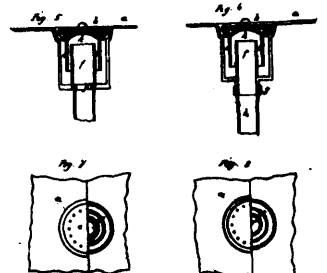
8778 Bogert's Feed Water Heater.



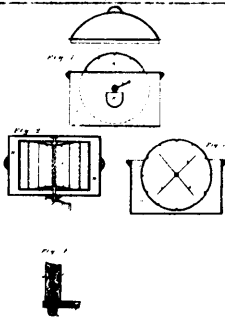
8779 Walsh's Improvements on Liquid Meters.



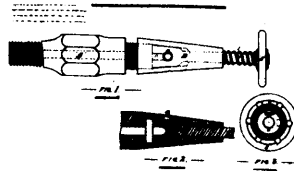
8780 Smith's Improvements on Grain Separators.



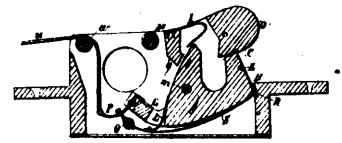
8781 Stafford's Improvements in Stretch Traps.



8782 DeWitt's Improvements on Washing Machines.



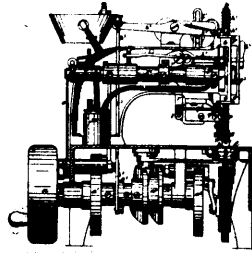
8783 McDonald's Water Gauge for Steam Boilers.



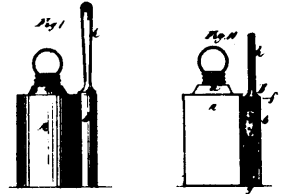
8784 Osgood's Clutches for Jib-Sheet Travellers.



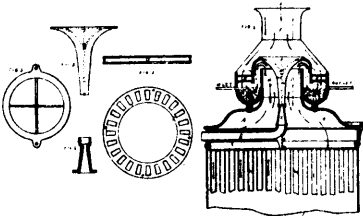
8785 Milne's Improvements in Stop Cocks.



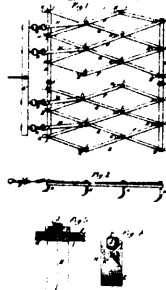
8786 Campbell's Improvements on Sewing Machines.



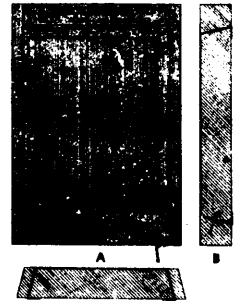
8787 Beard's Fire Kindling Apparatus.



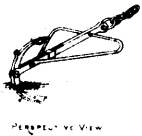
8788 Brayton, June & French's Improvement on Spark-Arresters.



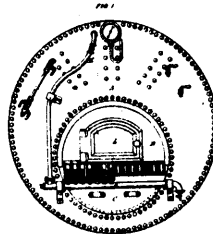
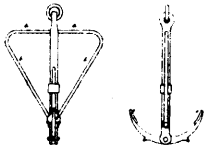
8789 Dewar's Improvement in Cultivators.



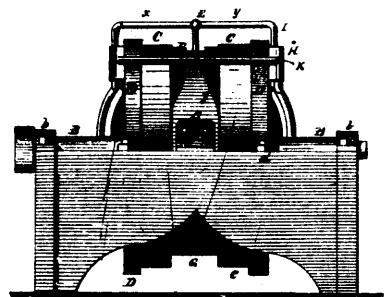
8790 Hulett's Process of Colouring Photographic Pictures.



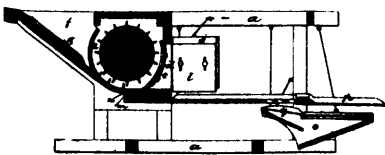
8791 Stockton's Improvements on a Ship's Anchor.



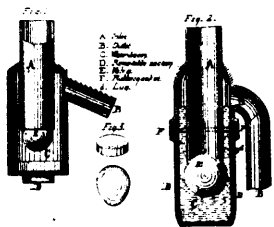
8792 Williams' Improvements in Furnaces.



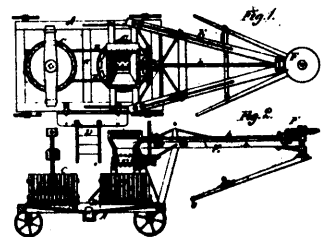
8793 Nilson's Improvements in Rotary Engines.



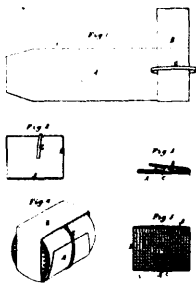
8794 Brown's Improvements on Threshing Machines.



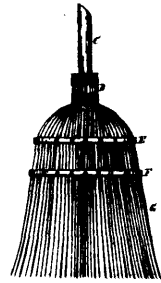
8795 Bower's Improvements on Sewer Traps.



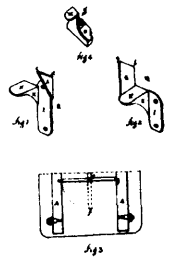
8796 Sikes' Improvements on a Cider Mill.



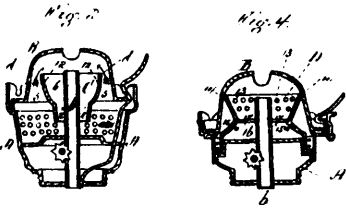
8797 Trout's Coin Envelope.



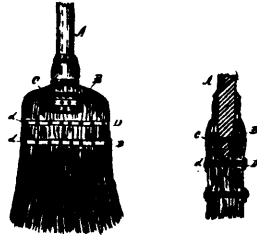
8798 Lay's Improvements on Brooms.



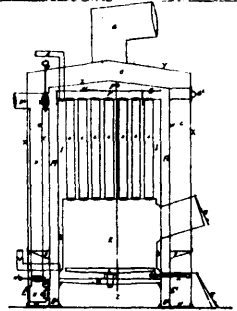
8799 Cable & Thompson's Improvement on Benches.



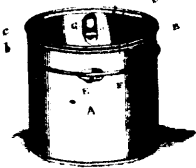
8800 Richmond's Improvements on Lamp Burners.



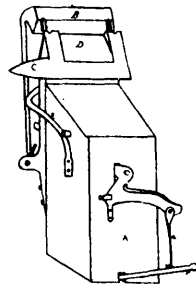
8804 Carpenter, Porter, Rice & Porter's Improvements on Brooms.



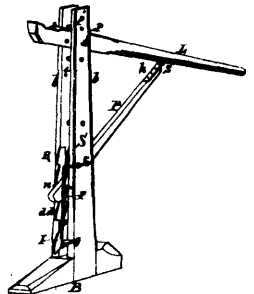
8806 Butterworth's Hot Water Boiler.



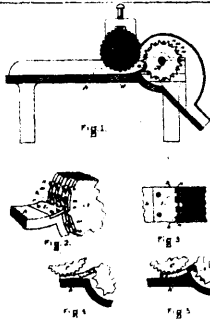
8807 Ross' Improvements in Metal Packages.



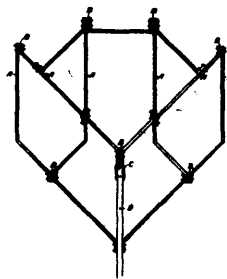
8808 Bailey's Machine for Sharpening Horse-Shoes.



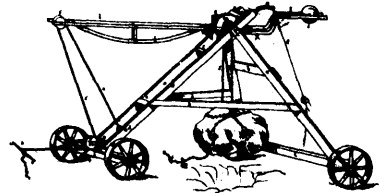
8809 Flanders' Improvements on Waggon Jacks.



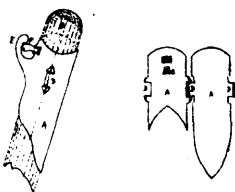
8810 Nickerson's Machine for Grinding Bark.



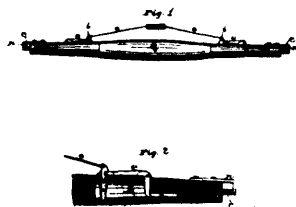
8811 Cowan's Improvements on Cultivator Frames.



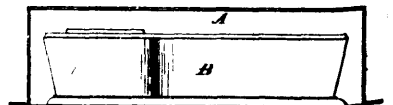
8813 Flewell's Machine for Extracting Rocks and Roots.



8814 Manoe's Improvements on Carriage Pole Holdbacks.



8815 Baker & Kline's Improvements in Horse Detachers.



8816 Mooers' Improvements on Collar Shields.