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No. 10,148. Conveyor and Air Ejector for Millstones. (*Pis sans fin et appareil de ventilation des meules.*)

James H. Ellis, Alexander Scott and Eli S. Edmondson, Goderich, Ont., 24th June, 1879, for 5 years.

Claim.—1st The spiral conveyors I J, constructed of a continuous piece of metal and made to revolve in any suitable manner, within a circular box L arranged around the periphery of the stones. 2nd The combination with spiral conveyors I J, provided with the bevel wheels G H, of the bevel wheel F and driving shaft D. 3rd The combination with the upper and lower stones and curb, of a flexible conveyor placed concentrically there with, and arranged to convey the meal away from the stones and interior of the curb. 4th The air stops P, arranged around the inside face of curb, in combination with the circular conveyors and air discharge spout Q.

No. 10,149. Improvements on Suspenders. (*Perfectionnements aux bretelles.*)

Benjamin J. Greely, Boston, Mass., U. S., 24th June, 1879, for 5 years.

Claim.—The shoulder straps A A M, button straps B B, the front and rear ends of one shoulder strap being connected by B, and of the other shoulder-strap by B.

No. 10,150. Adjustable-Seat Rail for Carriage Tops. (*Barreau mobile de siege pour les soufflets des voitures.*)

Daniel Conboy, Uxbridge, Ont., 24th June, 1879, for 5 years.

Claim.—The seat rail A, or its equivalent, hinged to the seat D, so that the top may be thrown forward without unfastening the curtain.

No. 10,151. Combined Gang Plough and Potato-Digger. (*Charrue a soes multiples et arrache-potats combines.*)

Hervey Killam, Waterford, Ont., 24th June, 1879, for 5 years.

Claim.—1st The laterally adjustable plough shares C, with standards bent, and having slotted bolt ways cut in them to receive the bolts E, in combination with the single plough beam A. 2nd The plough shares C, bolted to the beam A, as shown, in combination with the forked potato-ridge F.

No. 10,152. Improvements on Harrows. (*Perfectionnements aux herses.*)

Clarence A. Butler (Assignee of Beauman Butler), St. Johnsbury, Vt., U. S., 24th June, 1879, for 5 years.

Claim.—1st A harrow tooth E, having flanges k, the inclination of the front part being of such length as to enable it to pass over roots, straw or other obstructions. 2nd A harrow tooth E, having the ribs and braces n for strengthening the swell, in combination with the flanges k. 3rd A harrow having teeth of any form, the castor wheel riding attachment B with its connections c d F. 4th In a harrow having teeth of any form, the combination of the castor wheel riding attachment B and its connections with the peck or beam C and its connections for adjusting the depth of the teeth E in the soil. 5th In a harrow having teeth of any form, the drag D for smoothing the land and more effectually covering the seed. 6th In a harrow having teeth of any form, the combination of the same with a drag D operated by a lever e, and made adjustable by means of the hinge i and the holes g h.

No. 10,153. Improvements in Sails. (*Perfectionnements aux voiles.*)

Henry Flowers, Halifax, N. S., 24th June, 1879, for 5 years.

Claim.—1st The combination of a mast a, having the top-gallant top sails and lower yards b c d, with the sectional courses A D under the lower yards d and bent thereto, the centre section or close reefed courses A D having diagonal leaches N N, partially curved, and the triangular bonnets M M fitting into the diagonal leaches N N of the centre sections on which they slide, in combination with the sliding groove 2, the reef lines f f and the bonnets half-hard e e. 2nd A sectional top sail B, and top gallant sail C under the top sail yard c, and the top gallant yard b and thereto, the centre section or close reefed sails B C, having diagonal leaches N N partially curved in combination with the head stik 1 and the swinging bar 3, to which they are attached, having triangular bonnets M M fitted into the diagonal leaches N N of the centre sections B C and sliding thereon, in combination with sliding groove 2, the reef line s f f and the clew-lines g g. 3rd A mast P, a boom R, a gaff S, in combination with a sectional trisail L, and bent thereto the forward section or reefed trisail L, and bent thereto, the forward section or reefed trisail L having a diagonal leach N partially curved, and the triangular bonnet M fitting into the diagonal leach N, of the trisail and sliding thereon, in combination with the sliding groove 2, the reef line f, and the bonnet sheet h. 4th A sectional jib J, and the stay sail K in combination with the stay 1 bent thereto, the upper edge of the bonnet M fitting into the lower edge of the jib J and the stay sail K, and sliding thereon, in combination with the sliding groove 2 and the reef line f, the outhaul K, the double billed hook 4 and the bow of the clew o.

No. 10,154. Improvements on Water Taps. (*Perfectionnements aux robinets a eau.*)

John Robertson, Montreal, Que., 24th June, 1879, for 5 years.

Claim.—1st The valve and spindle A, with double collars or flanges D D, the dovetailed recess in the valve C C, for receiving the rubber or leather for the valve seat, to press against. The valve seat E E, the flange F, pivot P, pivot hole K, stop J and the chamber which retains it together with bridge J. 2nd The spindle G, with the toes H H and the weighted handle M.

No. 10,155. Improvements on Baby Tenders. (*Perfectionnements aux balancons d'enfants.*)

John S. Gabel (co-inventor with Charles N. Ziegler), New Dundee, Ont., 24th June, 1879, for 5 years.

Claim.—The combination of a baby tender with the connecting rod H.

No. 10,156. Improvements in Hose Joints. (*Perfectionnements aux joints des boyaux.*)

Robert Watkinson, Salford, Eng., 24th June, 1879, for 5 years.

Claim.—1st The combination of the several parts A J d n f e b h i. 2nd The combination of the several parts shown and described. 3rd The steam and vacuum joint as shown at 1 2 3 and W.

No. 10,157. Improvements on Marine Signals. (*Perfectionnements aux signaux de marine.*)

William B. Barker, Hoboken, N. J., U. S., 24th June, 1879, for 5 years.

Claim.—1st A marine code having all the divisions of the horizon divided into eight equal parts, with a distinctive sound signal for each of the eight; 2nd A code of signals giving a different number or order of long and short sounds for each of the 8 divisions of the circle, the four Eastern divisions commencing with the long sound, and the four Western commencing with the short sound. 3rd A code of sound signals composed of long and short sounds, having all of the Eastern begin with a long, and all of the Western begin with a short sound, and also all of the Northern end with a short and all of the Southern end with a long sound. 4th An apparatus for controlling the passage of air, steam or other fluid adapted for signaling by sound. 5th The marine signal apparatus described having in combination, means for producing pressure of air or other fluid, a device for inducing a succession of blasts in a determined character, number and order, and means for changing said mechanism to vary the signal substantially as,

and adapted to serve the purposes specified; 6th. In combination with means for inducing a pressure of fluid, and an instrument for producing sound thereby, the cylinder B and its attachments, partially turning with a slow motion to a definitely prescribed extent to induce the signals and means for turning the cylinder between the signals, so as to bring a new part into action; 7th. The graduated dial A and index B. In combination with automatic signalling mechanism, and with means for instantly changing the same; 8th. The bellows or wind forcing means G G, and means for forcibly operating it, in combination with a sound producing instrument D, mechanism for producing a pre-determined order of blasts, and means for changing the number or order, or both, between the signals; 9th. The slot b₂ helical in one portion of its length and straight at its lower end, adapted to serve in combination with the pin e, disc B, or its equivalent sound producing instrument D, and air forcing means G g, so arranged as to cause the first portion of the motion to generate a pressure, and then to cause turning of the signalling mechanism to a pre-determined extent, to give the signal by such pressure; 10th. The entire slot b, formed helical at its mid-length and straight at both its upper and lower ends, in combination with the bellows G g, actuating means E, signalling disc B, or its equivalent, and sound producing device D, to allow not only the production of a wind pressure during the first portion of the motion, and the operating of the signalling mechanism to a definite extent during a succeeding portion, but also to allow of a variation in the extent of the final movement without affecting the signal; 11th. A sound signalling apparatus or machine giving a series of sounds by one motion of a lever or other device, so that it will cause the entire signal consisting of a succession of sounds with intervals between them to be given with one motion; 12th. An automatic machine so arranged as to give a succession of sound signals whether they be given as described, or reversed in any way, so long as they are adapted to indicate danger, such as an approaching vessel, or to distinguish one lighthouse from another, or for any kind of buoy or lightship which may have this apparatus attached; 13th. The method of communicating at sea by a succession of mechanically induced sounds indicating the direction of the motion of the vessel, and capable of being instantly changed on commencing to change the course to avoid collision; 14th. A code of sound signals composed of long and short sounds, systematically arranged and actuated by mechanical means.

No. 10,158. Improvements on Force Pumps.

(Perfectionnements aux pompes foulantes.)

Jacob Scott and Albert Scott, Richmond, Que., 26th June, 1879 (Extension of Patent No. 3,616), for 5 years.

No. 10,159. Improvements on Gates.

(Perfectionnements aux barrières.)

George W. Simons, St. Catharines, Ont., 26th June, 1879, for 5 years.

Claim.—The mode of constructing, erecting and applying the gate A C to ordinary board or other fences, the manner in which it is opened and shut, and otherwise worked by wheels B B.

No. 10,160. Improvements on Trace Fastenings.

(Perfectionnements aux accroche-trails.)

Lucius P. Crandall Eau Claire, Wis., U. S., 26th June, 1879, for 5 years.

Claim.—The bar A, provided with the vertically elongated head a, and the block b pivoted eccentrically upon said bar, between said head and the end of the whiffletree and having within its rear side a semi-circular groove c, for the reception of the slotted end of the trace.

No. 10,161. Improvements on Liniments.

(Perfectionnements aux liniments.)

Sterling C. Buchanan, Camden, Ark., U. S., 26th June 1879, for 5 years.

Claim.—A compound of aconite, camphor, arica and sassafras, held in solution of fusil oil, of the specific gravity of about 830, said elements having the respective proportions specified.

No. 10,162. Improvements on Boot Uppers.

(Perfectionnements aux empeignes des chaussures.)

Edward H. Thurston, Ottawa, Ont., 26th June, 1879, for 15 years.

Claim.—1st. A boot having an upper of the one piece pattern A, crimped upwardly to a central point B, whereby after crimping, the pattern will require to be slit from the rear towards the front, to admit of the insertion of the foot of the wearer; 2nd. A boot upper of the whole pattern A, raised to a central point B, by crimping, whereby the slitting of the upper after crimping to admit the foot of the wearer, is necessitated.

No. 10,163. Improvements on Ovens.

(Perfectionnements aux fourneaux.)

John R. Haywood, Boston, Mass., U. S., 26th June, 1879, for 5 years.

Claim.—1st. In combination with the walls B B, the bottom of wall B, being above the bottom of the oven to admit of circulation; 2nd. The oven attachment composed of the frame C, and the sheet metal B B, extending from near the bottom of the frame at one side, and across the frame at the top nearly to the other side.

No. 10,164. Improvements on Seeders.

(Perfectionnements aux semoirs.)

Samuel Noxon, Ingersoll, Ont., 26th June, 1879, for 5 years.

Claim.—1st. The double receivers G H, in combination with a rocking bar F, or its equivalent; 2nd. The combination of the receivers G H and rocking bar F, or its equivalent, adjustable to receive the discharge from the cylinders C, by either of the receivers for sowing the grain in drills or broadcast; 3rd. The receivers G H, hung to a bar F having an adjustable movement, whereby the grain is discharged into either receiver.

No. 10,165. Improvements on Grain Drills.

(Perfectionnements aux semoirs traceurs.)

Samuel Noxon, Ingersoll, Ont., 26th June, 1879, for 5 years.

Claim.—1st. A tooth or hoe A, having a forwardly projecting plate B, provided with radial serrations or teeth C, laterally; 2nd. The adjustable

sector plate E, having lateral and radial serrations or teeth F pivoted to the tooth plate B having coinciding serrations or teeth G and locking device G. 3rd. The combination of a tooth or hoe A having a projecting plate B, sector plate E pivoted thereto, locking device G and drag arms H H, whereby the depth of penetration in the soil is regulated by the adjustment of the tooth to a greater inclination.

No. 10,166. Improvements on Earth Scrapers.

(Perfectionnements aux râbles à terre.)

Silas G. J. Morrow, New Bloomfield, Miss., U. S., 26th June 1879 for 5 years.

Claim.—1st. The lever H, rock shaft G and links b b, in combination with the scraper S and platform C; 2nd. The platform C, support F and rack R, in combination with the lever I, pivoted bar d and scraper S. 3rd. The scraper S, platform C, lever H, rock shaft G and links b b, in combination with the support F, lever I and pivoted bar d.

No. 10,167. Ironing Board.

(Table à repasser.)

Samuel Boyd, St. Catharines, Ont., 26th June, 1879, for 5 years.

Claim.—The small board working on the pivot and divided with hinge, with pins at each end to hold shirt and other articles of clothing, the mode of working and using the leg C and lever D.

No. 10,168. Improvements in Gas Governors.

(Perfectionnements aux régulateurs à gaz.)

George S. Woodruff, Grand Rapids, Mich., U. S., 26th June, 1879, for 5 years.

Claim.—1st. The cup-shaped washers F, on the spindle D, in combination with the diaphragm B fastened to the curved flange C. 2nd. The passage G connecting the riser H and chamber above the diaphragm in combination with the stop cock I; 3rd. A passage J through the spindle D, or other suitable point, to connect the chamber above and below the diaphragm.

No. 10,169. Improvements in Lamp Burners.

(Perfectionnements aux becs des lampes.)

Joseph Trent, New York, N. Y., U. S., 26th June, 1879, for 5 years.

Claim.—1st. The guard or deflector A, having the straight parallel sides a a and the parabolic curved sides b b, for a kerosene lamp burner. 2nd. The guard or deflector in combination with the cone B and chimney C. 3rd. The catch D held against the base of the chimney C by the sliding clasp E. 4th. The combination of the chimney C, cone B and guard or deflector A with the base plate G.

No. 10,170. Process for the Preservation of Eggs.

(Procédé de conservation des œufs.)

Osmar A. Stempel and John C. S. Foss, Washington, Mo., U. S., 26th June 1879, for 5 years.

Claim.—1st. The process of packing eggs by placing in a vessel with sides rendered partially or wholly impervious to gases and containing a solution of lime, salt, water, salicylic acid and oil, with some free oil forming the top of the solution; 2nd. The described composition of lime, salt, water, salicylic acid and oil, for the purpose set forth.

No. 10,171. Process for Extracting Malt.

(Procédé pour extraire le Malt.)

John A. Shaefer, Jr., William Norman and Robert W. Davies, (Assignees of John A. Shaefer), New York, N. Y., U. S., 26th June, 1879, for 5 years.

Claim.—The use of luke-warm water, instead of very hot or boiling water in connection with ground malt in the manufacture of Lager Beer, Ale and other malt liquors.

No. 10,172. Improvements on Wrenches.

(Perfectionnements aux clés à érous.)

Joseph Goodrich, Henry, Ill., U. S., 26th June, 1879, for 5 years.

Claim.—1st. A tool for grasping objects to be worked with or upon, wherein the jaws, mounted upon right and left hand screws, are arranged to approach or recede from each other simultaneously, and adapted to be thrown out of parallelism by turning either one of the screws independently; 2nd. In a tool, the jaws D D, screws C C, and a central shank; 3rd. A shank or stock bearing right and left hand screws and provided with guides for the jaws, and the two jaws arranged as set forth; 4th. The arrangement of the nuts swivelled or loosely fixed to the jaws; 5th. The arrangement, in a tool, or vise for grasping objects, of two movable jaws operated simultaneously by means of two right and left hand screws; 6th. The arrangement in a tool for grasping objects of a shank having a socket to fit a bit brace, and two jaws to be operated simultaneously by two right and left hand screws.

No. 10,173. Improvements on Ore Concentrators.

(Perfectionnements aux machines à concentrer les minerais.)

Edward W. Stephens, Erie, Penn., U. S., 26th June, 1879, for 5 years.

Claim.—1st. In combination with the horizontally movable ore bed of an ore concentrator, a blast chamber located directly beneath and extending across the entire width of the same, and provided with a plate or piston which fits said chamber horizontally and, when moved upward, causes a uniform flow of air upward through the superimposed portion of said bed. 2nd. In an ore concentrator which has a horizontally movable ore bed, the combination, therewith, of a splitting knife placed parallel with said bed. 3rd. An ore concentrator having the following elements, an air blast chamber, a superimposed horizontally travelling ore bed, a feeding hopper with mouth of equal width with the ore bed and a splitting knife placed parallel with said bed; 4th. An ore concentrator in which is combined the following elements, viz: a horizontal continuously moving ore bed, mechanism for feeding ore upon the same and mechanism for producing a blast, which shall force a current of air upward uniformly through each portion of said ore bed. 5th. An ore concentrator having devices constructed and operating together as shown, whereby the ore from the time it is fed upon the ore bed until it is discharged from the machine in a concentrated and separated condition, moves always and only in one direction.

No. 10,174. Improvements on Mowing Machines. (*Perfectionnements aux faucheuses.*)

George O. S. Conway and William Owens, Stonefield, and Hubert R. Ives, Montreal, Que., 2nd July, 1879, for 5 years.

Claim.—1st. The combination, with the rotating axle, of a loose sleeve, carrying hanging pawls impinged upon, alternately by ratchet or cam wheels secured to the axle, and operating through links to give a rocking motion to a lever which imparts, through a universal joint and link, vibratory motion to the cutter bar and knife; 2nd. The combination, with the ratchet wheels C C, secured on the rotating axle B, of the sleeve D with lug D₁ carrying the hanging pawls E E and held up by the counter balance D₂, the position of which is adjusted by set screw d, 3rd. The combination, with the frame H, hung loosely from the axle, of the tongue O pivoted thereto, below the centre of the draught.

No. 10,175. Bottle Stopper. (*Bouchon de bouteille.*)

Henry W Putnam, Bennington, Vt., (Assignee of Charles de Quillfeldt, New York,) U. S., 2nd July, 1879, (Extension of Patent No. 5,629), for 5 years.

No. 10,176. Bottle Stopper. (*Bouchon de bouteille.*)

Henry W Putnam, Bennington, Vt., (Assignee of Charles de Quillfeldt, New York,) U. S., 3rd July, 1879, (Extension of Patent No. 5,629), for 5 years.

No. 10,177. Base Burning Heating Stove.

(*Poêle de chauffage à charbon.*)

The Detroit Stove Works, (Assignees of James Dryer and John Van B. Carter), Detroit, Mich., U. S., 3rd July, 1879, (First Extension of Patent No. 3705), for 5 years.

No. 10,178. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

William Harrison, London, Ont., 3rd July, 1879, for 5 years.

Claim.—1st. A self-binding attachment to which motion is communicated from chain-wheel on reaper to chain-wheel B, or their equivalents, transmitting motion by other chain J and chain-wheels K K to the various parts, and attachable at back of table or any other point, but necessitating no other alteration in the construction of the reaper; 2nd. The mode of communicating reciprocating motion to the slide N and various parts of the apparatus, by means of connecting rod L, or equivalent device, in combination with chain J, 3rd. The foot P of arm G, in combination with the notch Q of table, 4th. The mandrel S constructed of three pieces, namely, the hooks B₁ B₂ and the outer case Y, so constructed as to all turn together, while allowing free reciprocating motion forward and backward to the hooks B₁ D, 5th. The screw W, formed on shank of inside mandrel, for giving rotary motion forward and backward to the hook D₁ by the resistance of the said screw to the forked piece V, attached to sliding bar U; 6th. The screw W formed on shank of inside mandrel, communicating a slight backward and forward motion by the resistance of the forked piece V, and returned from revolving by dog or hook z, until the collar A₁ is drawn back past lug B₁, 7th. The lever C₁, in combination with the twisted mandrel W and sliding bar U for projecting hook and jaw D₁, in front of hook and jaw D, 8th. The coil spring E₁, on twisted mandrel W, in combination with collar A₁ and inner jaw D₁; 9th. The clamping hook G₁, for gripping the thread and the knife J₁, for cutting the thread against the bed piece I₁; 10th. The combination of the forked piece V, pin F₁ and shank of clamping hook G₁; 11th. The combination of stud K₁, slide N₁, bar D, clutch F and chain-wheel B, operated by the raking-off arm of reaper, for the purpose of throwing the attachment in and out of gear; 12th. The combination of lug P, with hook L₁, axle M₁, notches N₁ and arm G; 13th. The wedge piece a, in bearing of mandrel S, in combination with sliding bar U.

No. 10,179. Improvements in Dredging Machines. (*Perfectionnements aux machines à draguer.*)

James Canaw, Allanburg, Ont., 3rd July, 1879, for 5 years.

Claim.—1st. The combination, with the spoon or dipper of a dredging machine, of a piston and piston rod arranged to move in a cylinder by hydraulic pressure and connected to said dipper by cable or chain in such manner that the motion of the piston will elevate the dipper; 2nd. A hydraulic lift, for the spoon or dipper of a dredging machine, consisting of a water cylinder and piston with inlet and discharge water valves, said piston being connected to the spoon or dipper by cable or chain, in such manner that the dipper would be elevated by the pressure of water and allowed to descend by the discharge of water from the cylinder; 3rd. The combination with the crane, and connections of a dredging machine, of water cylinders provided with pistons operated by water pressure and oppositely connected to the crane by chain or cable, in such manner that the said crane and attachments may be revolved alternately in opposite directions on its pivotal points; 4th. The combination of appliances whereby the spoon or dipper of a dredging machine is elevated by hydraulic power, and whereby the crane and attachments are revolved alternately in opposite directions by hydraulic power.

No. 10,180. Improvements on Car Axle Boxes. (*Perfectionnements aux moyeux des roues des wagons.*)

Joseph Blakeley, Toronto, Ont., 3rd July, 1879, for 5 years.

Claim.—1st. In combination with a hollow axle box, provided with vertical recesses, the boxes B and the anti-frictional wheel d; 2nd. A hollow axle box, the inner face of which is provided with vertical and coincident recesses and in combination therewith, the boxes B, anti-frictional wheel d, box H and axle B.

No. 10,181. Improvements on Rock Drills, &c. (*Perfectionnements aux forêts des mines, &c.*)

William Weaver, Phoenixville, Penn., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. The frame A and hind leg B, in combination with the tightening clamp H; 2nd. The combination with the drill rod E, of the flexible friction washer K, inside of the friction clamp of the ratchet nut G; 3rd. The combination with the frame A and hind leg B, of the emery or grinding wheel L, supported upon said leg and operative in either the horizontal or vertical portions of said frame, 4th. The combination with the frame A and drill rod E, of the detrok M provided with the clamp N, which is attached to the ele ating rope.

No. 10,182. Improvements on Barrel Swingers. (*Perfectionnements aux oscillateurs des barils.*)

Levi Eckert and James M Harvey, Constantine, Mich., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. The upper grappling device composed of the stem C, with a base K, by which it is permanently secured and braced to the counter, and a grapple D, provided with a bracing sleeve d, in combination with the lower grapple G; 2nd. The lower grappling device G composed of a casting formed with the lines f, g, and a cylindrical base bearing hub I, whereby to form a continuous solid bearing upon the bed piece E, provided with the annular bearing m.

No. 10,183. Improvements on Steam Gauges.

(*Perfectionnements aux manomètres.*)

John R. Arnoldi, Ottawa, Ont., 3rd July, 1879, for 5 years

Claim.—The light metallic spring A, in combination with the insulated set screw B, or its equivalent, arranged in combination with an expanding tube or diaphragm pressure gauge, and operated as described, to open and close an electrical circuit, for the purpose of producing an alarm or signal.

No. 10,184. Improvements in Tree Protectors. (*Perfectionnements aux corsets-tuteurs des arbres.*)

Prince E. Drake, Belle-Ewart, Ont., 3rd July, 1879, for 5 years.

Claim.—1st. The segmental slats A, with or without bark and hinged hoops B; 2nd. The hinged hoops B, provided with the shoulder B₁ in combination with the butt and nut fastening C; 3rd. The combination of the rustic tree protector and the half checked stake E.

No. 10,185. Improvements on Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

John P Manny, Rockford, Ill., U. S., 3rd July, 1879, for 15 years.

Claim.—1st. The combination, in a front cut harvester, of a finger-beam and a shoe connected at its forward end to the coupling frame, the rear end of the shoe and the finger-beam being left free to rise and fall; 2nd. The combination in a front-cut harvester, of a coupling frame, a cutting apparatus pivoted thereto, at a point in advance of the line of the finger-beam, and a slotted standard upon the heel of the shoe; 3rd. In combination with the coupling frame and the shoe, a standard mounted on the heel of the latter, and provided with a slot made inclined and curved; 4th. In combination with the coupling frame of a front-cut harvester, a stop located on the shoe in advance of the finger beam, and operating substantially as set forth, to take the thrust of the coupling frame, the heel of the shoe being left free to rise and fall; 5th. In combination with a lifting or tilting lever, an eccentric sheave; 6th. In a front-cut harvester, a triangular draft frame, composed of the tongue and its hound, and carrying the gearing; 7th. In combination with the draft frame of a front-cut harvester, the crank-shaft and counter-shaft attached to the under side the rot at points in front of the main axle; 8th. In combination with the crank-shaft and counter-shaft, supported on the draft frame, in front of the axle, a driver's seat located behind the axle upon supports that are connected with the draft frame; 9th. A driver's seat mounted upon a vertical or inclined spring support which is made adjustable on a horizontal arm projecting rearward from the main frame; 10th. In combination with drive wheels capable of being locked upon the axle or remaining loose upon it, at the pleasure of the operator, the combination of a spur wheel mounted on the axle and of a counter shaft, when the two are arranged so as to remain constantly in gear; 11th. In combination with the tongue, carrying the crank-shaft and counter shaft on its under side, boxes mounted on the main axle, and constructed substantially as described to bring the tongue to the plane of the axle; 12th. The combination of the knife head provided with a socket opening outward in the direction of the path of the machine, a bent pitman entering such opening to form a ball and socket joint, and one or more adjustable followers arranged at the side of the head of the pitman.

No. 10,186. Improvements on Corsets.

(*Perfectionnements aux corsets.*)

Lucien M Chipley and Marshall D. Chipley, St. Louis, Mo., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. The clasp busks B having flat clasps c secured thereto, said busks being enveloped with cloth or other material C, and provided with flap C₁ for attachment to the inner face of the body of the corset; 2nd. The front busk or busks D arranged to fold over the face of, and conceal the flat clasps or other fastenings c.

No. 10,187. Improvements in Oil Stills. (*Perfectionnements aux alambics à huile.*)

Watson Ryter, Philadelphia, Penn., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. In an oil still, an arch G, forming the top and sides of the furnace; 2nd. In an oil still, the arch G, having curved sides G₁ G₂, in combination with the internal and external air flues; 3rd. In combination with an arch G and internal and external air flues n p, the supply pipe f, located

above the ridge *g* and having exit openings *f, f, 4th*. The combination, in an still, of a furnace having an arched crown and curved sides, internal and external air flues, a supply pipe *f*, having openings *A, A*, steam boiler *B*, receiving vessels *C, C*, pump *B*, still *D*, pipes *n, n*, condenser *E*, cooler *N* and receiver *F*. 6th The still *F*, having dome *d* and separate outlets, for products of different gravities.

No. 10,188. Improvements in Book Sewing Machines. (*Perfectionnements aux machines à brocher les livres.*)

David M. Smyth, Hartford, Conn., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. A horizontal range of arms upon a vertical shaft revolved intermittently, in combination with mechanism for introducing the thread into the folded back of the sheet, and sewing the sheets together, in succession, as presented by said arms. 2nd. The combination of the vertical shaft *a*, revolving horizontal sheet sustaining and presenting arms, with semi-circular needles, for carrying the threads into and out of the folded back of the sheet, and means for interlocking such threads together. 3rd. The combination of the sheet presenting and holding arms, the stripper the semi-circular eye-pointed needles, and the horizontal loop holding needles. 4th The combination, in a book sewing machine, of means for supporting the folded sheet, curved eye-pointed needles, means for giving a partial rotary movement to the needles and the stripper plate, for holding the sheet. 5th. A pair of curved eye pointed needles, arranged to act in opposite directions, in combination with the loop taking needle, that receives the loop from the two needles. 6th. A sheet supporter that is made of folded sheets of metal, notched at the portions of the fold, where the needles enter, in combination with an eye pointed curved needle that passes between the folded metal in stitching the sheet. 7th The combination of a shaft and radial sheet sustaining arms, with mechanism for imparting a progressive rotation and a guide or locking plate for holding the outer end of such arm in position while the sheet is being sewed. 8th. The combination of the sheet sustaining arm *o*, plate, with the swinging clip *f*. 9th The combination of the sheet sustainer, the stripper, the eye-pointed needles, the loop holding needles, means for reciprocating such needles and the bed *F*, upon which the edges of the sewed sheets rest. 10th The combination with the loop holding needles, of the sliding bar *r* and lever *S*, for withdrawing the needles from the sewed book.

No. 10,189. Improvements on Petroleum Rectifiers. (*Perfectionnements aux raffineurs de pétrole.*)

James K. Anderson and Andrew P. W. Grass (Assignees of John Daul), Buffalo, N. Y., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. In combination with the still *A*, rectifier *B* and condenser *D*, the separator *E*, with the pipe *n*, for conducting the oil directly back to the still *A*, also the attached pipe *n*, for drawing off the water; 2nd. In combination with the still *A* and rectifier *B*, a conducting pipe *c*, having its induction opening in the rectifier above the level of the opening of the draw-off or exit pipe *e* therein. 3rd. In combination with the perforated plates of the rectifier *B*, the cup pieces *f, f, &c.*, with the top openings at gradually increasing heights from the surface of said plates from the upper one *C* to the lower; 4th. In a petroleum rectifying apparatus, in combination with the still *A*, rectifier *B* and condenser *D*, the separator *E*, provided with the perforated plate *k* and pipes *m, n*, leading therefrom; 5th. The pipe *a*, connected either with the separator *E* or condenser *D*, and also with the still *A*, for conducting the oil, &c., directly back from either to the still *A*; 6th. In combination with the still *A*, rectifier *B* and condenser *D*, the separator *E* having suitable pipes leading therefrom

No. 10,190. Method of Fastening Carriage Seats. (*Manière d'ajuster les sièges des voitures.*)

Samuel Crabb, Courtland, and John N. Forshee, Tilsonburg, Ont., 3rd July, 1879, for 5 years.

Claim.—The combination of the lock *F*, with the notched vertical bar or strap *D* and the safety button *H*.

No. 10,191. Improvements on Bee-Hives. (*Perfectionnements aux ruches.*)

Philander Craford, Buckhorn, Ont. 3rd July, 1879, for 5 years

Claim.—The combination of outer wall *A* and inner wall *D*, forming a bee-hive having double walls, with a space between them, which may or may not be filled with some non-conducting substance, as may be deemed expedient.

No. 10,192. Improvements on Wrenches. (*Perfectionnements aux clés à écrous.*)

Henri Beautey, Quebec, Que., 3rd July, 1879, for 5 years.

Claim.—1o. La combinaison de la clé *A* et des clés du même principe s'ajoutant sur la pièce *B*; 2o. La combinaison d'ajustage de la clé *A* et des clés du même principe sur l'assemblage des pièces *B, C*, pour le vissage et le dévissage rapides tel que décrit. 3o. L'ajustage, avec la pièce *C*, de vilebrequin de différentes grandeurs de bras de levier.

No. 10,193. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Richard J. Creelman and Adam Kay, Georgetown, Ont., 3rd July, 1879, for 5 years.

Claim.—1st. The recess *A*, formed in the bed plate of machine to receive the extended ends of the needles. 2nd. The combination of the needle cylinder, the extended needles and the recess *A* provided with the bearing face *C*, to retain needles in place. 3rd. The combination with the needle cylinder, of a retaining band *C*, placed at the base of cylinder. 4th. The clasped band *C*, in combination with the machine cylinder provided with the groove *C*, and for the purposes of holding the needles in position, for

heel and toe work; 5th The detachable cam plate *D* and lever cam *D*, which holds cam plate, in combination with the cog-ring and the needle-cylinder. 6th. The combination with the needle cylinder and needles of a knitting machine, of a cog-ring or its equivalent, provided with a bearing face or edge *f*, the shanks of needles to travel upon, whereby the needles are exposed to view in operation, and so arranged that the cam plate can be detached and replaced without affecting the work on machine; 7th The sliding cams *D, D*, supported in any suitable manner on the cam plate and arranged to move backward and forward. 8th The movable tensioner *D*; 7th fastened to the plate *D*, in combination with the eccentrically slotted disc *D*; and the stationary stud *D*; 9th. The needle shank supporting band *E* in combination with the cog-ring and detachable cam plate of a knitting machine; 10th The needle shank recess *E*, formed at a lower level than, and parallel with, the working level of the shanks of needles, for the purpose of permitting all or any portion of the needles to be put out of action when desired; 11th. The spring cam *E*, in combination with the needle shank bearing band *E*, provided with a passage leading to recess *E*. 12th The adjustable differentially cogged wheel *F*, or equivalent, mounted on a spring support, in combination with the needle shanks and spring cam *E*. 13th. The sliding block *E*, in combination with the pivot *E* switch *E*. 14th. The switch *E* and inclined block *E*, arranged to change the needles from the lower to the upper line of travel; 15th. The hinged latch *E*, arranged in combination with the needle cylinder, shanks of needles and band *E*, to move the needles above their ordinary working level, to pass them down to the lower recess *E*, and to allow the needles to rise to their working level from the lower recess; 16th The ribber arm *J*, provided with the slotted socket *J*, in combination with the standard *J* and adjusting collar *J*; 17th The ribbing needle holder *H* and cam holder *K*, with upwardly projecting hub, in combination with the arm *J*, provided with socket *J*. 18th. The ribber hub *K*, centrally recessed at the point of connection with the supporting arm *J*, and perforated for the purpose of providing a passage for the yarn to feed the machine, without interference from the ribbing support; 19th The post *H*, or its equivalent, in combination with the ribber needle holder and the cam holder hub. 20th The cam holder *K*, recessed on its under face and provided with a bounding flange of such width as will permit of the insertion of the shanks of the needles at any point around its circumference; 21st. The recessed cam holder *K*, provided with the cams *K, K, K*, when desired, arranged in relation to each other in such manner that the needles can be properly operated to knit, or all or a portion can be switched out of action, and returned into action again, as desired by the movement of the cam *K*. 22nd. The switching cam *K*, in combination with the central cam *K*, or its equivalent. 23rd. The cams *K, K*, in combination with the cam *K*. 24th. The pointed ribber driver *L*, attached to the hub of ribber and connected to the yarn carrier or other operating part of machine in such manner so to be readily detachable. 25th. The adjustable stop block *H*, in the ribber, in combination with the pivoted adjusting lever *L*, on the machine cylinder; 26th The adjustable lever block *L*, in combination with a needle cylinder of a knitting machine; 27th. The eccentrically slotted bar *J*, in combination with the cam holder, and switch cam or cams provided with stud pins *k*, as used with ribbing or ordinary knitting cams. 28th The combination of the ribber cam-holder and cams, needle-holder and needles, ribber supporting arm and driving arm, and a circular knitting machine. 29th. The combination with the plate *M*, provided with notched edge of the bent books *N*, which books are pivoted in a groove on the edge of said plate by means of the band *N*, or its equivalent, and flexibly retained in position by the elastic band *O*; 30th. The elastic band *O*, and swinging books *N*, in combination with a receptacle, when used as a setting up device for knitting machine; 31st. The combination with the staple *P*, or eye of the pivoted locking bar *P*, provided with a loop on its free end. 32nd. The combination with a take up lock, of the spring take up bar *Q*; 33rd. The off-set *B*, in combination with the long shank *B*, of knitting needle, to allow of the needles being raised for heel and toe work, and still be held in position in a machine when no cam cylinder part above heel is used to hold them as specified. 34th The adjustable collar or set screw in combination with the ribbing arm of a knitting machine.

No. 10,194. Self-Feeder for Threshing Machines. (*Alimentateur pour les machines à battre.*)

John Edgar, Sacramento, Cal., U. S., 3rd July, 1879, for 5 years.

Claim.—1st. The combination of an endless web or draper *J*, the same being placed in a suitable frame, and rollers *H, I*, for a feeding device, the said draper also provided with slats *a*; 2nd. In combination with a feeding attachment to threshing machines, of a picker *E*; 3rd. In combination with a picker *E*, of a roller *G*; 4th. The frame *A*, rails *B*, picker *E*, roller *G*, draper *J*, with slats *a*, rollers *H, J*, brackets *L*, all gears *I*, constructed and operated as specified.

No. 10,195. Improvements on Lawn Mowers. (*Perfectionnements aux faucheuses à bras.*)

Frank G. Johnson, New York, N. Y., U. S., 3rd July, 1879, for 5 years

Claim.—1st. The cutting plates *F*, constituting the carriers of all the working parts, as the axles of the cutters *G*, bearing wheels *E*, pressure knife *L* and the adjusting screws *i, j*; 2nd. The operating wheel *C* and the adjustable sliding sleeve *B*. 3rd. The revolving cutters *G* and carrying shaft, with its long and short bearings, as combined with the bearing plate *F*, supporting wheels *E*, and driving wheel *D*. 4th. The combination with the cutters of a lawn mower, of an independent adjustable hand wheel, an end less band or chain and a pulley secured to the cutter shaft. 5th. The combination of the revolving cutters *G*, stationary pressure knife *L*, curved plates *F*, carrying wheels *E*, drive wheel *C* and the guiding frame *A*.

No. 10,196. Improvements on Sawing Machines. (*Perfectionnements aux scieries.*)

William W. Giles, Chicago, Ill., U. S., 3rd July, 1879, for 5 years

Claim.—1st. The frame *A*, curved and arranged at its rear upon the ground, and at its forward end upon the log to be sawed. 2nd. The combination, with a lever fulcrum *I* upon a suitable frame-work and carrying a saw at its lower end, of a movable seat mounted upon said frame upon rocking standards, and connected with said lever by mechanism for conjoint action of the body and hands. 3rd The combination, with a lever fulcrum upon a suitable frame-work, of a pair of treadle bars, fulcrumed at

their front ends upon a fixed or movable fulcrum, and connected with an offset from the lever by rods or their equivalents, for the conjoint action of the feet and hands: 4th. The combination, with a lever carrying a saw and fulcrumed in a suitable frame-work, of the seat E, mounted upon rocking standards and connected with said lever and a pair of treadles also connected with said lever and fulcrumed at their forward ends, for the conjoint action of the body and feet: 5th. The combination, with a suitable frame, of a lever carrying at its lower end a saw, a saddle mounted upon rocking standards and connected with the lever, and a pair of treadle bars fulcrumed at their forward ends upon a fixed or movable fulcrum, and connected also to the said lever, for the conjoint action of the hands, body and feet: 6th. The combination, with the lever B slotted at its lower end and provided with a cross pin, of the saw blade C and the attached bar D, tenoned and having an open slot D, leading upwardly from its lower edge, to form an easily detached connection: 7th. The combination, with the lever B, of the treadle bars connected near their middle with said lever by rods H, and connected at their ends with said lever by elbow lever K and connection L: 8th. The combination with the frame of a sawing machine, of a wedge connected to a suitable shaft or frame, and jointed to the forward end of said frame to enter the saw kerf and hold the frame in place, and open the kerf as described.

No. 10,197. Improvements on Middlings Purifiers. (*Perfectionnements aux épurateurs des graius.*)

Frederick Thompson, Wakefield, and William H. Williamson, Leeds, England, 3rd July, 1879, for 5 years.

Claim—1st. The combination of hoppers pans, provided with collecting trays or compartments, arranged concentrically tier upon tier, and so that the central compartment, or chamber, of each tier forms part of an air shaft open to each tier, and common to the entire series of tiers. 2nd. In combination with the hoppers pans with collecting trays compartments and air chamber the central spindle with its distributors constructed to admit of the passage of air (and other matters floating with the air) through said distributors. 3rd. The combination of the hoppers pans, collect air trays compartments, air chamber, central spindle, distributors and means whereby currents of air are caused to flow centrifugally, all into one central air shaft in which they combine, and between the said hoppers pans, collecting trays and said distributors, so as to pass through, and in opposition to the showers of material thrown out centrifugally by said distributors. 4th. The combination of hoppers pans, collecting trays, air chamber, central spindle and distributors with air passages through them, and with an exterior slope shaped to a parabolic or cycloidal curve or approximating thereto, down which slope material falls, and from which it is thrown by the rotating distributors into suitable showers: 5th. In combination with the hoppers pans, collecting trays, central spindle and distributors, central air shaft, a fan or exhaustor arranged on said spindle and driven thereby or thereon.

No. 10,198. Improvements in Threshing Machines. (*Perfectionnements aux machines a battre.*)

William Crutcher & David F. Keagy, Woodbury, Pa., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination, with the fixed and movable sections of a concave, of the concave lever D pivoted to the sides of the frame, the springs B, the lever B, fulcrumed at C and supporting said springs, the shaft D, and cans C. 2nd. The combination, with the perforated shakers D, hinged at their front ends, of the rock shaft E, having spaced alternating arms F, the crank F, and the vibrating levers F rocking said shaft: 3rd. The combination, with the spurred drum of a threshing machine, of a spurred yielding concave as specified. 4th. The combination, with a threshing machine drum, of a concave having a hinge support at one end and an elastic or yielding support at the other: 5th. The combination, with the spaced vibrating perforated shakers D, of the vertically vibrating and reciprocating saws G. 6th. The combination, with the shaker strips D, and the saws of the shaft I, having the alternating eccentrics I, and a ring and connecting rod tangential to said ring, and uniting said strips and eccentrics, whereby a vertically vibrating and reciprocating motion is imparted to said strips in alternation. 7th. The combination, with the suspended shoe L, having screens K, K, of the connecting rods G, the vibrating levers F, the eccentrics H and the rotary shaft H: 8th. The combination, with an end blowing fan, of vibrating slats journalled in the air passage, and a valve operated by suction of the fan, to open or close said slats: 9th. The combination, with a blowing fan, of a governor for regulating the air supply to said fan: 10th. In combination with a blowing fan of a threshing machine, the adjustable, deflecting board S, having upon the end of its journal a sector X, having spaced perforations and a pin or bolt for maintaining said adjustment: 11th. In combination with the vibrating shakers and endwise reciprocating saw-strips, the sectional vibrating pawl plates engaged above said saw-strips.

No. 10,199. Improvements on Fruit Driers. (*Perfectionnements aux séchoirs à fruits.*)

Marcus S. Lyon, Armada, Mich., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the steam generator A, having flange H, hooks F, steam supply pipe H, with pipe seat A, pipe I and steam chamber C with hooks E and valve K. 2nd. The generator A, with flange A, indicator G and hooks F, in combination with drying pan B, having flange B adapted in connection with flange A, for reception of packing, to render the joints steam tight: 3rd. The steam chamber C, having the adjustable supports C pivoted thereto, and pipe I and pipe seat A, for supporting the detachable steam chamber C, with drying pan B and valve K.

No. 10,200. Improvements on Fire Escapes. (*Perfectionnements aux sauteurs d'incendie.*)

Joseph R. Winters, Chambersburgh, Penn., and Vernor C. Murray, New York, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the nuts and jam nuts K, swivelled screws L, bevel gear wheels N, O, shaft P, crank wheel Q, cross bar M, and slotted upright bars J, with frame A and with cross bar J, to which the end of one of the bottom sections of the ladder B is pivoted. 2nd. The combination of the two swivelled screws D, the two pairs of bevel gear wheels E, F,

shaft G and crank wheels H, with frame A and with sliding cross bar C, to which the end of one of the bottom sections of the ladder B is pivoted. 3rd. The combination of the cross pipe R provided with a coupling S at each end, and two lines of hose T, passing up at the opposite sides of the ladder B and crossing each other, and passing from side to side of the said ladder B at the middle rounds of the ladder sections, with the said ladder B and with the frame A: 4th. The combination of the frame Z provided with the pulley Z at its lower corners, and the hooks Z at its upper corners, with the ropes or chains Y, attached to the drum V and to the cage A, for connecting the said cage A with the ladder B detachably.

No. 10,201. Improvements on Mailing Machines. (*Perfectionnements aux machines a timbrer.*)

Samuel P. Panton, of Milton, and Alfred F. Holmes, Napanee, O., 9th July, 1879, for 5 years.

Claim—1st. A galley or other suitable form for holding type having an intermittent motion imparted to it, in combination with a stamp having a reciprocating motion: 2nd. A spindle D, connected to eccentric E by the pitman N, in combination with the strap J, pawl K, spring M and the rack L.

No. 10,202. Improvements on Blast Furnaces. (*Perfectionnements aux fourneaux à fusion.*)

John F. Bennett, Pittsburgh, Penn., U. S., 9th July, 1879, for 5 years.

Claim—1st. Constructing a blast smelting furnace composed interiorly of two frustrums of cones, placed base to base or end to end, and having first, its greatest area in cross section not greater than four times, nor less than equal to the area of the base. second, the area of the throat not less than equal to, and not more than twice the area of the base, and third, the lower frustrum being not less than one fourth, and not greater than one-half the height of the upper frustrum. 2nd. Constructing a blast furnace, composed interiorly of two frustrums of cones, placed top to top, and having first, its base area not greater than four times, nor less than equal to its lesser area in cross section: second, the area of the throat not less than equal to, and not more than twice the area of the base, and third, the lower frustrum being not less than one fourth, and not greater than one-half the height of the upper frustrum. 3rd. In combination with a blast furnace having an interior form of an inverted cone frustrum, or of a cylinder, or of a cone frustrum, the tuyeres A projecting into the interior. 4th. The use of tuyeres A, arranged so that a circle drawn through their nozzles shall divide the horizontal plane of the furnace at that level into two equal, or nearly equal parts, in combination with a furnace having its greatest area in cross section not greater than four times, nor less than equal to the area of the base. 5th. The use of tuyeres A, arranged as described, in combination with a blast smelting furnace having its greatest area in cross section not greater than four times, nor less than equal to the area of the base, the area of the throat being not less than equal to, and not more than twice greater than that of the base, and the cone or bell equal to one-half the area of the throat: 6th. The combination, in a blast smelting furnace, of a throat having an area equal to, or not more than twice the area of the base, and a charging hole or bell of about one-half the area of throat.

No. 10,203. Improvements on Devices for Transmitting Motion. (*Perfectionnements aux appareils de transmission du mouvement.*)

Stephen Dennis, Bogota, D. C., U. S., 9th July, 1879, for 15 years.

Claim—1st. The frame A supporting the shafts a, b, c, d, pulleys B and C, clutch D, grooved rollers E E and cord, rope or chain F: 2nd. A device in which an endless cord, rope or chain is coiled one or more times around both driving and driven pulleys, and held in place by grooved rollers fixed in contact with it: 3rd. The combination of pulleys B C and cord, rope or chain F, with the grooved rollers E E, revolving in the same plane with the pulleys.

No. 10,204. Improvements in Piston Packing. (*Perfectionnements aux joints des pistons.*)

Samuel A. Youse, Sutter Creek, Cal., U. S., 9th July, 1879, for 5 years.

Claim—In an expandible piston packing, the body C provided with grooves J H, connecting ports I and flange D, in combination with the split rings G G E, head A and follower E, each provided with ports K.

No. 10,205. Car-Coupler. (*Attelage de wagons*)

John W. Whitely & Benjamin Morton (Assignees of John J. Lappin), Toronto, Ont., 9th July, 1879, (Extension of Patent No. 3,634), for 5 years.

No. 10,206. Improvements on Fishing Poles. (*Perfectionnements aux perches de pêche.*)

David J. Moore, Gananoque, O., 9th July, 1879, for 5 years.

Claim—An adjustable hook A and spring C combined together

No. 10,207. Improvements on Combined Plasters and Pads. (*Perfectionnements aux emplâtres plâtres.*)

Robert M. Kennedy, Pittsburgh, Penn., U. S., 9th July, 1879, for 5 years.

Claim—A combined plaster and pad united for application to the human body.

No. 10,208. Improvements on Hand Trucks. (*Perfectionnements aux camions a bras.*)

Moses Johnson, Lockport, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the expandible jaws A, A, shields C and axle a, 2nd. The sectional axle a with guides d, d, in combination with expandible jaws A, A: 3rd. The expandible jaws A, A with shields C, for

use when required, and adjustable axles *b b* supported by wheels *a* and operated by levers, 4th The adjustable axles *b b*, guides *d d* and jaws *A, A*.

No. 10,209. Improvements in Land Rollers.

(*Perfectionnements aux rouleaux d'agriculture.*)

John Dryman, Ramsey, Ont., 9th July, 1879, for 5 years.

Claim—1st The arrangement and combination of the roller *A*, journals *a*, boxes *b* and frame *B* having the tongue *C*, secured to one of its sides, with the brace *c* and seat *h*, 2nd The forward roller *A* and frame *B*, connected with the rear roller *D* and frame *E* by the hinge *d* and brace chain *g*.

No. 10,210. Improvements on Sun Dials.

(*Perfectionnements aux cadrans solaires.*)

Joseph W. Holmes, Wheatville, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st The combination of a graduated quadrant or segment of a circle mounted on a horizontal axis, a pivoted graduated circle and a fixed graduated circle, both mounted upon the segment and a gnomon consisting of an arc of a circle, and a traversing arm having apertures and fixed upon the pivoted circle, 2nd The combination of detachable sights with the traversing arm.

No. 10,211. Improvements on Steam Boilers.

(*Perfectionnements aux chaudières à vapeur.*)

Edward H. Ashcroft, Lynn, Mass., (Assignee of Daniel Sullivan, Bangor, Me.), U. S., 9th July, 1879, for 5 years.

Claim—The combination of a boiler and a steam drum or receiver, arranged and connected by a series of tubular necks, with a hood or casing enclosing the said drum or receiver and necks, and extending to the boiler and forming over the latter and about the drum and necks a space or chamber for the smoke and volatile products of combustion, from the smoke box or furnace, to circulate in and through previous to their escape into the chimney or discharge flue or duct, the steam boiler or drum having one or more connecting tubular extensions pressed out from, and in one piece with the metal from which the extension or extensions may project, each connecting neck of such boiler and drum being composed of two of such extensions arranged and riveted together, the steam boiler and drum connected by one or more tubular necks, each of which is composed in the whole or in part of tubular extensions, each of which is pressed out from and in one piece with the metal from which it may project, the steam boiler and drum connected, at their opposite ends, by such tubular extensions or necks, and having heads, each of which is in one piece of metal, and forms part of one of the necks.

No. 10,212. Improvements on Sleighs.

(*Perfectionnements aux traîneaux.*)

Joseph T. Clarkson and George W. Morrill, both of Amesbury, Mass., U. S., 9th July, 1879, for 5 years.

Claim—1st The combination, with body *A* and frame *B*, of the elastic hinge bars *h*, 2nd The combination, with the elastic hinge bars *h* and body *A*, of the elastic buffers *i*; 3rd The combination of the elastic hinge bars *h* and the springs *m*, supported by the frame *B* and arranged to cushion the body *A*, 4th In combination with the springs *n*, the pivoted guide rods *m*, 5th The springs *o* arranged upon guide rods *m*, between the floor *C* and nuts *p*, 6th In a tilting top or sleigh, the pivoted guide rods *m* secured to ends of the racking bar *l*.

No. 10,213. Improvements on Photo-Mechanical Printing.

(*Perfectionnements dans l'impression photo-mécanique.*)

William E. Lindop and William A. Cooper, both of St. Thomas, Ont., and Benjamin F. Powelson and Adolph Mueller, both of Detroit, Mich., U. S., (Assignees of Johann B. Obernetter, Munich, Germany,) 9th July, 1879, for 5 years.

Claim—1st The process of preparing photographic plates, for printing from by mechanical means, which consists in forming first, on a transparent or non-transparent plate, a coating or film of albumen and soluble glass, and then applying thereto a second or sensitive film for receiving the photographic image, 2nd As a new article of manufacture, a photographic printing plate provided with a ground coating of albumen and soluble glass and superposed sensitive coating or film.

No. 10,214. Improvements on Harvester Pitmans.

(*Perfectionnements aux bielles des moissonneuses.*)

Christopher C. Bradley, Syracuse, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—The conical joint for the wrist pin bearing, in combination with the ball and socket joint for the cutter bar head.

No. 10,215. Improvements on Car Starters.

(*Perfectionnements aux impulsurs des wagons.*)

John P. Weyer, Elmira, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st The combination of the clutch rods *f*, eccentrics *g*, lever *z*, rods *j*, spring lever *l* and the brakes; 2nd The drum *p*, placed loosely on the shaft *d* provided with the double ratchet *r*, in combination with the double pawl *t*, bent rod *u* and spring *v*, the spring being fastened to the middle of the pawl and made to exert its pressure upon either end of the pawl; 3rd The combination of the roller *l*, having the recess or catch in one side, with the spring *C* and rod *7*, whereby the springs are prevented from being acted on when the car is going down hill; 4th The combination of the clutch drum *a* with the spring *4*, fastened thereto, and the large drum *p*, whereby the large drum is made to act more quickly; 5th The combination of the drum *p* turning loosely on the axle, the ratchet secured to the axle pawl, bent rod *u*, spring *v*, roller *l*, connecting chains and springs.

No. 10,216. Improvements on Sash-Holders.

(*Perfectionnements aux arrête-croisés.*)

Jacob B. Yeagley, Indianapolis, Ind., U. S., 9th July, 1879, for 5 years.

Claim—1st The combination of the notched or grooved pivoted check shanks *D F*, spring *G*, elliptical tumbler *H* and key *K*; 2nd The combination of the notched or grooved pivoted check shanks *D F*, spring *G*, elliptical tumbler *H*, key *K*, case plate *I J* and the window frame face plate *C*.

No. 10,217. Improvements in Book Making.

(*Perfectionnements dans la confection des livres.*)

Ira Reynolds, Dayton, Ohio, U. S., 9th July, 1879, for 5 years.

Claim—1st A flexible consecutively ruled side opening book, composed of leaves, a flexible cover sheet board, both stitched through the centre and both folded in one fold, the stitching threads whereof are carried through and secured on the back or outside of the flexible cover sheet or board, and the dollar and cent or down line, or lines of which, on the right hand side of the book when opened and the date or down lines of which, on the left hand side of the book when opened, are consecutively ruled; 2nd A blank book composed of paper and manilla or other tough cover sheet, held by a line of stitches through the centre and folded in one fold, the dollar and cent or down line or lines of which on the right hand side of the book when opened and the date or down lines of which on the left hand side of the book when opened, are consecutively ruled; 3rd In combination with a flexible, consecutively ruled side opening book as above, a flexible side opening removable binder, arranged with one or more cords, tapes or bands around the pockets, which cords, tapes or bands are lapped where the ends come together, and reinforced at the points *a a a*, by turning the finishing leather around the cords, tapes or bands and inside boards of the pockets; 4th A flexible end opening removable binder, arranged with one or more cords, tapes or bands around the pockets, which cords, tapes or bands are lapped where their ends come together and reinforced at the points *a a a* by turning the finishing leather under and around the cords, tapes or bands and side boards of the pocket; 5th In combination with a flexible end opening removable binder, as above, a book complete, composed of leaves and flexible finishing board, both stitched through the centre, and both folded in one fold, the stitching threads whereof are carried through and secured on the back of the cover; 6th In securing the convex portion of the back of a book with strong flesher linen or other suitable material, by firmly pasting or gluing the same over the convex portion and between the cords, tapes or bands, flexible cover-sheet or board, and inside finishing sheet; 7th The cords, tapes and bands, as passed through, and secured to, the outside of the flexible cover-sheet or board, in combination with the strong flesher linen or other material, as firmly pasted or glued over the convex portion of the back of a book and between the cords, tapes or bands, flexible cover-sheet or board and inside finishing sheet; 8th The stop *B*, as arranged for the adjustment of the two boards of the cover and back of the book cover, in combination with the former or representative book *A*; 9th The springs *o o*, arranged so as to bring the two points *w w* of a book back on a level, while in the act of securing the two boards *n n*, of the book cover; 10th The curved spring *p*, as arranged to press and hold the book back to the former *A*, while the two boards of the cover are being secured to the linen, or other suitable material, that is pasted or glued on the concave portion of the book back; 11th The hub and band cut away on the inside as seen at *n n*, or as cut away at *u u*, and cast with elongated teeth, as seen at *h*, for the better security of the hub and band to the removable finishing binder; 12th The corner and side tips, as cast with elongated teeth *k k*, on the inside, so that the same may be pressed down into, and firmly secured to, the cover of a finishing binder; 13th A removable book cover, the back of which is made of metal having its two points turned in, so as to span and grasp the back of a book, and its points clipped or chamfered off as seen at *d d*, so as to obviate the cutting of the linen or other material at these points; 14th A removable stitched book, provided with compressed longitudinal ribs upon its back, as seen at *t t*, and its corner clipped or compressed so as to more readily enter the removable cover *c*, which is shaped to span and grasp the same; 15th The combination of the double spring back, the points *d* of the outer spring being clipped or chamfered off, so as to prevent the cutting of the linen, or other material, which holds the two lids, of the cover, said linen or other material being glued and riveted between the two springs, thus leaving the inner spring, with its points clipped or chamfered off, free and open to receive and grasp a book correspondingly so shaped as to be held firmly by the inwardly turned points *d d* of the inner spring; 16th The clamping frame *n*, arranged with guide supporting pieces *a a*, as extended across slot *10*, and of sufficient height to catch the points *a a*, of the upper guide supporting pieces when there is interposing paper laid between the upper and lower parts of the same, equal to the capacity of the stabber; 17th In combination with the clamping frame *n*, arranged with guide supporting pieces *a a* of sufficient height to catch the points *a a*, of the upper guide supporting pieces, the rabbeted rib *b*, extended up and on a line with the upper face of the lower sections of the clamping frame; 18th The swivelled screw adjusters arranged on both sides of the stabber, for the purpose of producing a simultaneous action of the sides of the sliding table *l*; 19th The combination of the grooved square and straight-edge, as arranged to adjust the spindles to a perpendicular position; 20th The adjustable driving roller or drum *B*, when it is dropped down so as to drive the spindles *p p p*, either from the upper or lower side of the roller, without a guide roller.

No. 10,218. Improvements in Sewing Machines.

(*Perfectionnements aux machines à coudre.*)

Edmund Wiseman, Luton, England, 10th July, 1879, for 5 years.

Claim—1st The application and use to, and in machines for uniting together heads or plait of straw, or other similar material, by the particular kind of stitch herein referred to, of an eye pointed needle *a*, and a hooked instrument *b* working together; 2nd The combination with the before mentioned arrangements of eye pointed needle *a* and hooked instrument *b*, working together, of the looper or loopers *c d*, for placing the needle thread in such a position as to be caught by the hooked instrument *b*, when withdrawing from the material; 3rd The peculiar adjustable feed mechanism, consisting of the combination of the slides *y x* with the levers *w z*, in conjunction with the pivoted feed bar *e*; 4th The modifications of the feed mechanism re-

ferred to in the preceding claim; 5th. The peculiar needle actuating mechanism, consisting of the combination of the cam or crank pin D connecting rod F, lever C, slide c; 6th. The thread "take up" lever B, in combination with the vertically adjustable stitch regulating slide 3 and stop 9, on the slide y, whereby more or less thread is drawn off the reel, according as the stitch is long or short.

No. 10,219. Improvements on Seed Sowers.
(*Perfectionnements aux semoirs.*)

Andrew Bartholomew, West-Springfield, Mass., U. S. A., 10th July, 1879, for 5 years.

Claim.—1st. The combination of the gauge plates e et, &c., with a bracket b and hopper A; 2nd. The combination, with the hopper A, of the rings or marks a, for ascertaining the quantity of seed placed in, or distributed from the hopper A; 3rd. The combination, with the hopper A and bracket b, made as described, of the holes c c; d and slides g g; f; 4th. The combination, with a hopper A and bracket b, of an agitator composed of the arms h h; 5th. The combination, with the hopper A and bracket b, of the gauge plates e et, &c., and slides g g; and means whereby they are brought close together so as to prevent the accumulation of seed which would otherwise occur; 6th. The arrangement of the slides g g, with the distributor j, whereby a right, left, or double cast may be thrown.

No. 10,220. Improvements on Threshing Machines. (*Perfectionnements aux machines à battre.*)

John A. Crone, Georgetown, Ont., 10th July, 1879, for 5 years.

Claim.—1st. A wind chest A, connected to the fan F by the pipe G, and having a longitudinal slit a, so arranged that the blast escaping therefrom will strike the grain, as it falls from the canvas belt of the threshler on to the sieve or riddle B; 2nd. A wind chest D, connected to the fan F by the pipe H, in combination with a series of tubes C, arranged beneath the sieve B, and each provided with a slit or porting to direct the blast vertically through the sieves B; 3rd. A wind chest D, connected to the fan F by the pipe H, and having a slit d, so formed that the blast escaping from it will pass obliquely through the grain falling from the upper sieve B, to the lower sieve E.

No. 10,221. Chemical Fire Engine. (*Extincteur chimique d'incendie.*)

William Morrison, Toronto, Ont., 10th July, 1879, for 5 years.

Claim.—1st. The combination of a water supply tank A, with the tilling gas producing cylinder B, by which the said cylinder B will be more speedily charged and recharged, when the engine is at work, than it would be without the tank A; 2nd. The construction of the cylinder B, or the modification of the same.

No. 10,222. Improvements on Window Blinds. (*Perfectionnements aux jalousies.*)

Edward Bowslaugh, Grimsby, Ont., 10th July, 1879, for 5 years.

Claim.—The combination of the rings E which are attached to the bands C C with the draw cord D.

No. 10,223. Improvements on Horse Powers.
(*Perfectionnements aux manèges.*)

Albion P. Benjamin, Waterville, Me., U. S. A., 11th July, 1879, for 5 years.

Claim.—The link C, of the peculiar construction shown and described; 2nd. The combination of link C, with the axle D and truck E; 3rd. The combination of link C, axle D and truck E, with the rag or sprocket wheels H; 4th. The combination of the oil cup I with wick i; 5th. The combination of the oil cup I, the curved and flanged rails f and bar K; 6th. The combination of the oil cup I, curved rail f and bar K, with link C, axle D and truck E; 7th. The combination of link C, axle D and truck E, with the bridge J and rollers L.

No. 10,224. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

James Authors, Toronto, Ont., 11th July, 1879, for 5 years.

Claim.—1st. The hook shaft of a rotary hook lock stitch machine, placed parallel with the driving shaft and driven therefrom by an eccentric and pitman in such manner that the two shafts shall complete a revolution in the same time, but the hook shaft shall be caused to rotate with a continuous rotary differential motion; 2nd. The hook G, provided with the recess G₃, in the rim enclosing bobbin for the purpose of allowing a bent or badly mounted needle to pass down without striking the hook; 3rd. The recess G₄, formed in the enclosing rim of hook behind the entering point, for the purpose of allowing one thread of the loop to pass readily behind the bobbin shell and also for the purpose of relieving the other thread of the loop from friction while passing under the bobbin cover and across the face of hook; 4th. The bobbin shell and bobbin enclosed within a recess of the hook, with the edge of the bobbin shell placed outward, in combination with the needle passing across the face of the hook; 5th. The recess or groove g₁, sunk in the back of hook, for the purpose of allowing the thread to enter and pass freely behind the bobbin shell; 6th. The enclosing rim of the hook, provided with a bevelled or enlarged edge on the face adjoining the bobbin shell, for the purpose of permitting the thread to pass freely behind and discharge from under the bobbin shell; 7th. The hook G, having a periphery tapered or diminished in diameter towards its front or needle face; 8th. The bobbin cover mounted on the end of a vertically swinging arm in an adjustable manner and held in place by a spring in order that the connection between cover and bobbin may be elastic; 9th. A thread nipper operated from a cam on the hook, or other suitable operating part and arranged to nip the bobbin thread on the front face of the hook; 10th. The tipping face g₃, formed on the front face of the hook; 11th. The block O, provided with a spiral groove cut in its face, in combination with the disc N, provided with a stud pin n; 12th. The spring plate O₂ and screw O₁, in combination with the adjusting block O, and disc N; 13th. The combination with the axle or stud pin of the rotary thread tension wheel, of the spring P; 14th. The combination with the cam wheel Q attached to the driving shaft of the spring rocking Q₁, to which the take up lever is connected.

No. 10,225. Means for augmenting the volume of sound in Musical Instruments. (*Moyens d'augmenter le volume du son dans les instruments de musique.*)

Daniel S. Conner, Montreal, Que., (Assignee of Stephen F. Wasley, London, England), 11th July, 1879, for 5 years.

Claim.—A stand or support for Piano-fortes, Organs and Harmoniums to rest on, provided with pointed feet or spikes, which penetrate through the carpet to the wooden floor.

No. 10,226. Apparatus for Cleaning Silk.
(*Appareil pour nettoyer la soie.*)

William B. Swift, Montreal, Que., 11th July, 1879, for 5 years.

Claim.—1st. The combination of a series of separate fixed cleaning plates, a corresponding series of separate movable cleaning plates, arranged in the same plane, slide bars for supporting said movable plates and the means for simultaneously adjusting all the movable plates; 2nd. The combination of a series of separate fixed cleaning plates, a corresponding series of separate movable cleaning plates, arranged in the same plane, slide bars for supporting said movable plates, the means for simultaneously adjusting all the movable plates and set screws for separately adjusting the several movable plates.

No. 10,227. Machine for Hulling Buckwheat.
(*Machine à écaler le sarrasin.*)

Giles S. Cranson, Syracuse, N. Y., U. S., 11th July, 1879, for 5 years.

Claim.—1st. The combination of a revolving horizontal cylinder, provided in its convex surface with grooves formed of an abrupt side a, and a bevelled side b and with narrow plain faces c, between said grooves, all arranged parallel to the axis of the cylinder and with the back or deepest part of the grooves, toward the feed of the machine, and a convex opposing surface arranged near, but not in contact with, the aforesaid cylinder, and presenting to the same grooves or notches with intervening plain surfaces, the former of which are bevelled in the direction of the feed; 2nd. A set or pair of cylinders having their respective convex surfaces provided with grooves formed of an abrupt side a and a bevelled side b, and with plain faces c between said grooves, all arranged parallel to the axis of the cylinders and disposed alike in both cylinders, geared to revolve in opposite directions toward each other and with an accelerated speed of that cylinder, which has the back or deepest part of the grooves of the upper half of the periphery nearest the opposing cylinder.

No. 10,228. Feather Renovator. (*Machine à rafraîchir la plume.*)

Eugène S. Manny et Paul Cartier, Beauharnois, Que., 11th July, 1879, for 5 years.

Résumé.—1er. La combinaison de l'engin G et du tuyau distributeur F; 2e. La combinaison de l'appareil de chauffage P R R et du calorifère D, avec la chambre ou cylindre troné C.

No. 10,229. Improvements on Snow Ploughs.
(*Perfectionnements aux charrues à neige.*)

Thomas S. Chapman, Marbleton, Que., 14th July, 1879, for 5 years.

Claim.—The sides A and mould boards B, in combination with the wings F F and lever D, also the combination of the guide board C C, cutters H and the oval bolt holes L L.

No. 10,230. Improvements in Fences. (*Perfectionnements aux clôtures.*)

James Grist, Blenheim, Ont., 14th July, 1879, for 5 years.

Claim.—The combination of pickets A, rivets or bolts B, arranged as described, forming a fence which may be extended or contracted at pleasure, and which may also be folded in compact form for transportation.

No. 10,231. Improvements in Waggon Racks.
(*Perfectionnements aux râteliers des wagons.*)

Levi Talcott, Minetto, N. Y., U. S., 14th July, 1879, for 5 years.

Claim.—1st. The abutment D, to which the boards A B C of the wings are attached, having their hinged ends faced with rubber, in combination with the cross bars E F G and hinges H, to clasp the sides of the waggon body and hold the rack on the same; 2nd. The hinged wings, held to the body by the cross bars E G, in combination with the body sides J J and half hinges K; 3rd. The combination of the hinged wings of the rack and cross bars E F G, with the movable ends L, having the lock bolts a, buttons b, handles c, eye bolts d and cleats e; 4th. The boards A C, of the rack wings, having their inner edges matched or dovetailed, in combination with the removable board B, having its edges matched or dovetailed to match the inner edges of the boards A C.

No. 10,232. Improvements in Torpedo Boats.
(*Perfectionnements aux bateaux à torpilles.*)

John L. Lay, Paris, France, 14th July, 1879, for 5 years.

Claim.—1st. The employment of a double screw or two screws revolving around the same axial line and driven in opposite directions, by means of either of the peculiar arrangements of gearing consisting of the bevel wheels 1 2 3 4 5 6, or the modification wherein the bevel wheel E₁ is geared with the bosses of the propellers; 2nd. The arrangements or contrivances for carrying an electric cable, and for paying out the same through a tube S extending art beyond the screw propeller or through a central tube S₁ passing through the propeller, and which cable may or may not have a brake applied to the same; 3rd. The reel or drum so constructed that when the cable is coiled thereon, the said cable will be retained by a sheath or cover

R₄, and the barrel or core R₁ of the reel may be removed, and the cable payed out from the centre of the coil; 4th. The ammoniacal gas motor, in which the gas is produced from liquid ammonia contained in a cylinder or vessel, surrounded with water and so arranged that the exhaust gas from the engine flows into this water, and either with or without the small rotary engine or propeller working in the same; 5th. In combination with the gas reservoir or holder, the employment of a reducing valve or series of such valves in the feed pipe; 6th. The employment, in combination with the carbonic acid gas holder and engine, of the water tanks or receptacles, and the water admission valve or valves; 7th. The peculiar construction of the reducing valves consisting of the box *b*, slide valve *d*, piston *f*, cylinder *g*, spring *t*, and other parts shown, or the modifications thereof; 8th. The valve, in which the slide *d*, piston *f*, cylinder *g*, spring *t*, and other parts shown, are adapted to serve for regulating the admission of water; 9th. In combination with the motor engines, the employment of a throttle valve controllable by the operator on shore; 10th. The peculiar construction of the throttle valve, which consists of the valve box *l*, valve *m* and rod *n*, piston *o*, cylinder *p*, slide valve *p* in the box *p*, lever *p*₂, and other parts arranged in combination with electro-magnets; 11th. The apparatus for working the rudder or rudders, consisting of the engine and rotating shaft T₁, geared with the rudder stock *u*, connected with an electrical circuit and controllable by the operator at the shore or other station; 12th. The modification of this apparatus for working the said rudder or rudders, consisting of a yoke U₆ fixed on the rudder stock U₁, one arm of which yoke is provided with an anti-friction roller working on a bent spring *u*₁₀, and whose other two arms are connected directly to the pistons of two single acting cylinders, which are connected with an electric cable and controllable by the operator at the shore or other station; 13th. The rods *z*, for indicating the position of the torpedo boat to the operator herein above termed the guide or guiding rods, so attached to the boat that they can be raised or lowered, and which are arranged by means of either of the forms of apparatus shown, or by other suitable devices, in connection with a small engine or cylinder supplied with gas by a valve, which is connected with an electric circuit and controllable by the operator; 14th. Providing a torpedo boat with a double set, or two pairs of side wings, or horizontal rudders H, mounted on shafts or journals I, or otherwise, and adjustable at the outside of the boat; 15th. The provision, in the bow or nose of a torpedo boat, of the firing rod or pin V, fitted to slide through a stuffing box W, and which, when driven inward, completes an electric circuit, and thereby explodes the charge in the magazine; 16th. The construction of a torpedo boat with a detachable magazine A*, so secured to the boat by a rod, or by other means, that when the boat strikes an object, the said magazine is detached and falls and the firing is effected; 17th. The electro-magnetic apparatus consisting of the key board S, connected with any suitable battery or generator of electricity, and provided with pole changers, switches, index and other devices, and connected with a cable consisting of a number of insulated wires, carried in and payed out from the boat, and each of which wires is connected with and operates apparatus in the said boat; 18th. The employment of means for sending or passing an electrical current through a wire or wires connected with apparatus on the shore, or wherever the operator may be stationed, and with electro-magnets arranged in combination with a valve on board the boat, which valve regulates or controls motor engines; 19th. The employment, in like manner, of means for providing an electrical current, and passing the same through the shunt and magnets for controlling the operation of the rudder or the guide rods of a torpedo boat; 20th. The apparatus, consisting of the segment U₂, geared in connection with the engine shaft and operated to turn the rudder in either direction by the engine, and the series of points or pins U₃ arranged in combination with the spring U₃, which is enclosed in an electric circuit, and thereby indicates on the key-board the position of the rudder; 21st. The mechanism consisting of the two pole changers *z*₂₃ geared together, and in combination with the index finger *z*₂₄ on the key board and other parts; 22nd. The combination, with the rudder stock and segment, of the devices consisting of the springs U₄ and resistance coils arranged at the two sides of the rudder stock, and connected with the electrical circuit, in such a manner that the rudder, when jammed hard apart or starboard, will be stopped without injury to any of the parts; 23rd. The arrangement of the electrical circuit, whereby the firing of the magazine is accomplished, with the two resistance coils and short circuit; 24th. A torpedo boat, or floating or moving torpedo, constructed and provided with apparatus for affecting its propulsion, guiding, or controlling and firing, and which apparatus is controllable by an operator at the shore or other station from which the torpedo is launched.

No. 10,233. Improvements on Apparatus for Feeding Steam Boilers. (*Perfectionnements aux appareils d'alimentation des chaudières à vapeur.*)

Edward Hamer and James Metcalfe, Aberystwyth, and Edward Davies, Llandinam, England, 14th July, 1879, for 5 years.

Claim—1st. In an injector for steam engines, a two part combining cone whereby the sectional area of the steam and water passage of said cone may be enlarged or contracted independently of the spindle; 2nd. The two part combining cone composed of the stationary part H, and the laterally movable part J, in combination with the casing F and a hand lever or equivalent device; 3rd. A laterally adjustable auxiliary combining cone Q; 4th. The combination of a discharging cone and a laterally adjustable auxiliary combining cone Q, with a laterally adjustable combining cone H J, provided with an annular chamber N, and the additional steam inlet *m*; 5th. A laterally adjustable combining cone H J, in combination with a laterally adjustable auxiliary combining cone Q; 6th. The combination of the laterally adjustable cone H L and the vertically adjustable cone D; 7th. The combination of the vertically and independently adjustable steam cone and spindle, and the laterally adjustable combining and auxiliary combining cones and the discharging cone; 8th. The combination, with the injector, the reservoir S and connecting pipe R, of a blast pipe, provided with suitable means whereby the volume of exhaust steam admitted to said reservoir and injector may be regulated; 9th. The blast pipe having a perforated head, in combination with the perforated out off plate O, constructed in such manner that the perforations in the latter may be made to register with those in the former, the steam reservoir S, connecting pipe R and the injector; 10th. In an injector specially adapted to be worked with exhaust steam, the combination of the spindle C, steam cone D, combining cone H J and its chamber N, auxiliary combining cone Q, additional steam inlet *m*, a discharging cone, steam inlet A, water branch G and over-flow pipe.

No. 10,234. Improvements in Direct Acting Engines and Drilling Apparatus. (*Perfectionnements aux machines à action directe et aux appareils à percer.*)

Henry Richman and Uriah K. Arnold, San Francisco, Cal., U.S., 14th July, 1879, for 5 years.

Claim—1st. The screw threaded tripod legs E₁, and the adjusting threaded sleeves F₁ receiving the legs E₁ into their upper ends; said sleeves having their lower ends pointed to rest upon the ground, together with the lock nuts H₁, to secure the adjustment; 2nd. The clamps C₁, fitted to receive the trunnions, and having a slotted extension which fits into the head I₁ of the legs of the tripod, said head being provided with a single screw by which the clamps are secured to the legs and to the trunnions at one operation; 3rd. The case B, fitted to receive and support the independently rotating driving cylinder C, said case having the threaded sleeve or nut H₁ secured to one side to receive the screw F, which is journaled upon the trough or carriage A, so that the case and cylinder may be moved forward and back without reference to the action of the cylinder or piston; 4th. The cylinder receiving and holding case B, with its removable head D, provided with the pawl T, together with the cylinder C, sleeve Q, having the curved slots R, and the ratchet S; 5th. The tapering slotted clamping screw A₁, which is formed to receive the drill, and to hold it by being screwed into the end of the piston rod, of which it then forms a part; 6th. The piston with its extension W, fitted to receive the drill clamp A₁, and having screw threads cut upon the outside, so that the collar X may be screwed up or down upon it to adjust the position of the lugs upon said collar with reference to the curved slots in the sleeve Q, and the holding key Z; 7th. The extension O of the cylinder with its straight slots P, together with the sleeve Q, with its curved slots R, and the collar X, with its lugs Y, whereby the drills is rotated while being reciprocated; 8th. The extension O with its straight slot, and the sleeve Q with its slots R, formed with an increasing curve, together with the adjusting collar X, with its actuating lugs Y, whereby the amount of rotation may be regulated and adjusted; 9th. The cylinder C, with its piston V, provided with the ingress and egress ports, and the valve *g* working concentrically within the piston and in the same direction; 10th. The piston V, with its contained actuating valve reciprocating within the cylinder C, said piston being provided with ports *h a o*, whereby both piston and valve are caused to move in the same direction; 11th. Forming the valve within the piston and concentrically with the cylinder, enclosing case and guide or trough, whereby the drill forming an extension of the piston rod is rotated with the cylinder within its case; 12th. The cylinder or case A₄, with its axially moving hollow piston B₄, in combination with the valve G₄, moving within the piston and in the same direction with it, and the supply and exhaust ports; 13th. The improvements in dental engines or mallets, consisting in the hollow piston or mallet B₄, moving axially within the case A₄, and containing the controlling valve G₄, which moves in the same direction with the piston, together with the ports H₄, valve surrounding spaces *a* *a*₃, and the passages *c* *c*₃, and exhaust ports K₄ L₄; 14th. The hollow piston or mallet B₄, moving within the cylinder A₄, and containing the valve G₄, moving in the same direction with the piston, in combination with the stem P₂, with its head O₂ and the spring R; 15th. The hollow piston or mallet B₄, moving longitudinally within the case A₄, and provided with the longitudinally moving valve G₄, in combination with the stem P₂, with its transverse pin T₁, and the slotted guide Q₁; 16th. In a dental engine, the piston or mallet B₄, moving within the cylinder A₄, so as to give successive blows upon the head of the stem P₂, in combination with the elastic spring and air tight packing R₁, to return the stem after a stroke and prevent leakage from the cylinder.

No. 10,235. Machine for Ripping, Surfacing and Matching Lumber. (*Machine à refendre, raboter et appareiller le bois.*)

John DuBois, Williamsport, Pa., U.S., 14th July, 1879, for 5 years.

Claim—1st. In combination with a ripping and surfacing machine A, and a duplex matching machine B, intermediate devices such as shown, to facilitate the feeding of the strips from the first machine to the second; 2nd. The rests C C₁ D D₁ E, arranged in connection with the ripping, surfacing and matching machine; 3rd. The combination of a multiple ripping and surfacing machine, a duplex matching machine, and devices constructed and arranged as shown, to enable a single attendant to feed two strips at a time, from the first machine to the second; 4th. In a series of laterally adjustable ripping saws mounted on a common shaft, a separate independent surfacing head or cylinder, and feeding devices, adapted to pass the boards to the saw and surfacer successively; 5th. The combination, in one machine, of the series of saws and their adjusting levers, the surfacing cylinder H and endless bed *w*, arranged for joint operation on the lumber; 6th. In combination with the surfacing head or cutter extending entirely across the machine, the two independent press rolls *p* *p*₁, arranged as shown, whereby the machine is adapted for surfacing simultaneously two boards of different thicknesses; 7th. In combination with the series of ripping saws, the guides *c* and the two arms *d*, with their levers C and the rack bar *f*; 8th. In combination with the laterally adjustable saws *g*, and their adjusting levers *i*, the rack bar K, and adjustable gate *l*; 9th. In combination with the endless slatted bed, having central teeth *b*₁, under the ends of each slat, the driving pulleys or wheels *b*₂, having their teeth arranged to act singly and centrally under the ends of the slats, against the teeth *b*₁; 10th. In combination with the laterally adjustable saws and their adjusting levers *i*, the indicator arms or plates, attached to the levers; 11th. In a wood planing or surfacing machine, the combination of an endless slatted bed *w* and supporting wheels or rolls, with fixed guides C₁, arranged to receive and sustain the ends of the slats on their front faces, for the purpose of preventing the corners of the slats from marking the lumber; 12th. In combination with the bed *w* and wheels *b*₂, constructed in the peculiar manner shown, the fixed guides C₁, arranged to bear on the front and rear sides of the slats; 13th. The cutter head consisting of two or more concentric grooved disks and one or more cutters secured by the grooves of the disks, and curved on the outside in the arc of a circle concentric to the disks; 14th. In a duplex matching machine, the combination of a transverse shaft L, provided with matching heads or cutters *h*₁ *h*₂, on opposite ends, and a second shaft M, provided with corresponding heads K₁ K₂, mounted in a vertically adjustable head N; 15th. In combination with the uprights O, provided with the toothed bars O₁, the vertically sliding shaft carrying head N, provided with the sliding locking bolts O₂.

16th. In combination with the standards G, having the toothed bars O, the vertically sliding head N, provided with bolts G and weighted levers O, and the cords G or P; 17th. In a matching machine, the combination of the main frame K and the press roll guides S, consisting of two round rods S₁ applied to the frame and sustained by the braces; 18th. The press roll carrying heads, bored out and mounted on two round rods S₂, applied to the frame and sustained by braces; 19th. The duplex catching machine provided with the inclined guides or supports D; 20th. A matching machine having two sets of matching heads and their accompanying feed mechanism, mounted on opposite sides for enabling a single attendant to feed two boards at a time; 21st. In a matching machine, the combination of two sets of matching mechanism on opposite sides, and intermediate rests or supports to facilitate the feeding of the lumber to both sides of the machine by a single attendant; 22nd. In a matching machine, the combination of two sets of matching devices on opposite sides, two side guides a and an intermediate rest or rests b inclined downward toward the two guides; 23rd. In a matching machine, a delivery spring V, arranged in rear of the matching heads, to effect the automatic side delivery of the boards; 24th. In combination with the rods S₂ and the sliding head thereon, the connecting plate B, screw L and spring T; 25th. In combination with the surfacing and matching machines, the sliding saws z; 26th. The adjustable guides z, for presenting the boards to the sliding saws; 27th. The combination of the supporting rollers O, feeding roller n and driving mechanism, whereby boards of different thickness may be fed simultaneously.

No. 10,236. Improvements on Clothes Wringers and Mangles. (*Perfectionnements aux essoreuses à linge et aux calandres.*)

Austin D. Cable and Walter M. Rice, Montreal, Que., 14th July, 1879, for 5 years.

Claim.—1st. A clothes wringer and mangle combined, in which a spring having the U S form is used; 2nd. A lug J or projection on the frame of the machine, through which passes a screw; 3rd. A flange O attached to the frame of the wringer or mangle; 4th. The combination of the plain smooth wood core rollers, or any other suitable material, with a sleeve of rubber of any required thickness, and also with the frame of the machine.

No. 10,237. Wood Working Machines.

(*Machine à travailler le bois.*)

William H. Doane and George W. Hughes, Cincinnati, Ohio, U.S.A. 11th July, 1879, for 5 years.

Claim.—1st. A universal wood worker, on one side of which a horizontal outer head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, such a machine having the respective tables, for said two cutter heads, mounted side by side at a distance apart, so as to leave a free open space between where a belt or belts may run over a counter shaft to drive the said cutter heads; 2nd. In a universal wood worker, on one side of which a horizontal outer head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, the combination of the respective tables, for said two cutter heads, mounted side by side at a distance apart, and the separate arbors of said two cutter heads which have pulleys on their ends overhanging the space between the tables; 3rd. In a universal wood worker, on one side of which a horizontal outer head operates on lumber fed over it by hand, while, on the other side, a horizontal cutter head operates on lumber fed under it by power, the combination of the respective tables for said two cutter heads, mounted side by side at a distance apart, the separate arbors of said two cutter heads, which have pulleys on their ends overhanging the space between the tables, and independent driving pulleys on a single countershaft adapted to drive the said cutter heads, either separately or together; 4th. In a universal wood worker, the combination of the hand wood worker and the moulding machine, arranged on a single frame and pointing with their front ends in opposite directions with a single counter-shaft arranged across the end of the machine, behind the hand wood worker; 5th. In a universal wood worker combining, in its construction, a moulding machine and a hand wood worker, the combination of a counter-shaft, the pulleys thereon for separately driving through belts the two axially arranged independent cutter heads and the intermediate shaft below the path of said belts for driving the feed gear of the moulding machine from the hand wood worker side of the combined machine; 6th. In a universal wood worker, the combination of the counter shaft, the loose driving sleeve thereon, the duplex friction clutch, a loose pulley on the driving sleeve adapted to be driven by one face of the friction clutch, and a fast but slidable pulley on the counter shaft, adapted to be driven by the other face of the friction clutch; 7th. The main frame of a universal wood worker composed of a single casting formed with two stands and a low connecting web to leave a gap between the stands, on each of which a table or tables and cutter heads are mounted for planing purposes; 8th. The combination and arrangement of the general counter-shaft of the machine, the pulley on the arbor of the upper cutting cylinder, the feed rolls, the feed roll driving shaft and a train of wheels for transmitting motion from said driving shaft to the feed rolls, said train of wheels being arranged outside of the straight path of the belts which runs from the general counter-shaft to the pulley of the upper cutting cylinder; 9th. The combination of the feed roll, the fixed shaft 13, the sleeve bearing of the feed roll shaft hinged to said shaft 13, the fixed bracket under the feed roll and the set screw in this bracket for limiting the descent of the sleeve bearing; 10th. The vertically adjustable main table of the moulding machine provided with permanent fence; 11th. The combination of the presser foot over the lower cutting cylinder and the swing arm carrying said presser foot, and adapted to be swung laterally entirely clear of the cutting cylinder and its tables; 12th. The combination of the internally adjustable pivoted bonnet and the swivelled supporting standard thereof; 13th. The combination of the endwise adjustable bearings of the upper cutting cylinder and the bonnet supported on such bearings; 14th. The combination of the table, the slide bar connected therewith, the link for automatically sliding said bar and table, and the screw spindle for raising and lowering the table; 15th. The combination of the table, the slide bar and the lever pivoted to the table and adapted to operate on the slide bar; 16th. The combination of the table, the slide bar connected therewith, the lever adapted to operate on the slide bar, the link for automatically moving the latter and the screw spindle for raising and lowering the table; 17th. The fence and its supporting bar directly connected together by cylindrical studs, on one, engaging elongated straight grooves, in

the other, which connection provides for adjusting the fence circularly as well as up-and-down on its supporting bar; 18th. The combination of the fence and its supporting bar directly connected together by cylindrical studs, on one, engaging elongated straight grooves, in the other, and a clamping device for rigidly securing the fence to its supporting bar after the proper adjustment thereon.

No. 10,238. Improvements on Barrels. (*Perfectionnements sur barils.*)

Samuel Wright, Harrison, Ont., 11 July, 1879, for 5 years.

Claim.—1st. A double skin veneer barrel made from stave shaped strips of veneer a, the joints of the stave on the one skin being made to overlap or braze, with the joints on the other skin, the whole, when together, forming a jointless bulge; 2nd. A veneer bulge-shaped barrel formed of the stave shaped strips a b, in combination with the hoops C E for retaining the head D; 3rd. The segment F, attached to the spider I to which the segments G H are hinged, in combination with the arm J pivoted to the spider.

No. 10,239. Magneto-Electric Machine. (*Machine magneto-électrique.*)

Wealey W. Gary, Boston, Mass., U.S.A. 16th July, 1879, for 5 years.

Claim.—1st. The described method of producing induced electrical currents consisting in vibrating an iron armature coiled with wire to and from the neutral line in the field of a permanent magnet; 2nd. In a magneto-electric machine or instrument, the combination of a permanent magnet, an induction coil and a soft iron armature arranged to move wholly within the magnetic field to and from the neutral line; 3rd. In a magneto-electric machine, the combination of a permanent magnet, an induction coil and an armature, and operating mechanism arranged, to vibrate the armature to and from the magnet, from or across the neutral line without departing from the magnetic field; 4th. The combination, in a magneto-electric machine, of a permanent magnet, an induction coil and a soft iron armature, vibrated only from the neutral line toward the magnet and back to the neutral line; 5th. In a magneto-electric machine, the combination of a permanent magnet, an induction coil and a soft iron armature arranged to vibrate to and from, and to stop upon the neutral line in the magnetic field; 6th. The combination, in a magneto-electric machine, of a permanent magnet, an induction coil, an iron armature vibrating wholly within the magnetic field, to or across the neutral line, and an automatic commutator arranged to change the course of the induced current when the armature is upon the neutral line; 7th. In a magneto electric machine, the combination of a permanent magnet, an induction coil and armature and an automatic commutator or current changer arranged to move as the armature reaches the neutral line in the magnetic field; 8th. In a magneto-electric machine, the combination of a permanent magnet, an armature moving to and from the same and a spring, or its equivalent, arranged to counteract the attractive influence of the magnet; 9th. The combination, in a magneto-electric machine, of a permanent magnet, an armature arranged to move to and from the magnet and spring, or equivalent devices, arranged to offer an increasing resistance to the armature as it approaches the magnet; 10th. The combination of the permanent magnet, the induction coil and the armature extending across both poles of the magnet and arranged to move to or from them both at the same time; 11th. The combination of the permanent magnet, the armature extending across both poles of the magnet, the induction coil, the vibrating lever and the eccentric arranged to vibrate the lever.

No. 10,240. Improvements on Explosive Projectiles and Torpedoes. (*Perfectionnements aux projectiles explosibles et aux torpilles.*)

James H. McLean and Myron Coloney, St Louis, Mo., U.S.A. 16th July, 1879, for 5 years.

Claim.—1st. A torpedo or projectile provided with magnets for attachment to a ship's side; 2nd. A torpedo provided with a propelling apparatus to cause it to approach an enemy and a magnetic appliance to adapt it to attach itself automatically to an iron body; 3rd. A torpedo or projectile provided with a magnetic appliance for attachment to the side or bottom of a ship and a time firing apparatus to determine the period of explosion; 4th. A torpedo or projectile provided with magnets mounted on pivots to adapt them to turn automatically into their operative position; 5th. A pair of torpedoes hinged in front to a coupling bar and provided with suitable propellers and with a brace adapted to hold them in parallel position, while moving forward, and permitting them to be drawn into line for action; 6th. A torpedo or projectile provided with a magnetic appliance for attaching it to a ship's side or bottom and with a flotation apparatus to regulate the depth of immersion; 7th. A torpedo or projectile constructed with an explosive chamber, one or more flotation chambers and one or more zones of magnets to adapt the torpedo or projectile to attach itself to an iron body; 8th. A torpedo or projectile provided with one or more zones of magnets M M arranged radially in circumferential tiers with their poles presented outward; 9th. A circumferential tier of radial magnets M, interposed discs V and bolts O; 10th. A shell or torpedo charged with an explosive compound contained in balls of elastic material arranged in tiers separated by discs of elastic material; 11th. A shell or torpedo constructed with an explosive chamber, one or more flotation chambers, one or more zones of magnets and a time firing apparatus; 12th. A torpedo or projectile provided with a mechanical device for effecting its explosion after any desired interval; 13th. A torpedo or projectile provided with a concealed mechanical device for effecting its explosion after a determined period and a stop to prevent the starting of the time mechanism until the torpedo or projectile is to be used; 14th. A torpedo or projectile provided with a concealed device, to effect its explosion after a determined period and a plug to prevent access to the interior of the shell after it is closed for use; 15th. The combination, in a torpedo or projectile, of a time mechanism for determining the period of explosion and an elastic envelope to prevent concussion; 16th. The combination, in a torpedo or projectile, of a time firing mechanism, an elastic envelope therefore and one or more elastic diaphragms having metallic rims; 17th. The combination of a time mechanism and a firing pin or hammer; 18th. The combination of a setting device H, trigger S and firing pin K with a time gearing; 19th. In a time firing mechanism constructed with a spring A, a train of gearing, a setting wheel p, adjustable on its arbor to determine the period of explosion, and a spring pin or hammer C released by said setting wheel; 20th. The com-

bication of the spring pin or hammer *t*, the trigger *s* and the adjustable setting wheel *p* recessed at *p*, to permit the retraction of the said trigger, and provided with a pin or tippet *r*, to retract it. 21st. The combination of the spring pin or hammer *t*, the socket *z* and the eccentrically pivoted cartridge receiver *z*. 22nd. The combination of a firing device to effect the explosion of a shell or cartridge, a time gearing to determine the period of said explosion and a governor to regulate the movement of said time gearing.

No. 10,241. Improvements in Gas Apparatus.

(*Perfectionnements aux appareils à gaz*.)

Reinhold Bocklen, Boston, Mass., U. S. A., 16th July, 1879, for 5 years.

Claim.—1st. The carburettor B constructed with the sides, top and bottom of fire-proof material and with the joint at its cap U; 2nd. The arrangement of the central air pipe M with the spiral generated conduit O and the screws N P with the absorbent material applied as stated; 3rd. The combination of the gas and air pipes with the air mixing valve or cock S and the carburettor; 4th. The combination of the carburettor B with its air pipe K and gas pipe T, adjustable regulator D and gas fixture A; 5th. The combination of the carburettor B, regulator D and gas fixture A with the air pump C, mixing cock S, gas outlet or pipe T and air inlet K; 6th. The combination of the carburettor with the air cock L, gas cock R and mixing cock S with the union couplings V attached for detachment; 7th. The combination of the hand pump F, can or barrel E with its cap X, and its air and liquid pipes with the carburettor B; 8th. The construction of the pump C with the inner drum *b*, its chamber *c*, stuffing box *e*, the bent pipe *a* and outer drum of the pump; 9th. The combination of the carburettor B, pump C, with a lamp post; 10th. The combination of the carburettor B, pump C, weight I, drum G, burner cock 17, crank 21, rod 22 and its adjustable collar 23 for extinguishment of the gas light automatically; 11th. The carburettor B, its cocks R S L, regulator D and check valves 28, air brake pipe 30, fixtures A and reservoir 29, and the hand pump F for application of the gas light in cars; 12th. The combination of the carburettor B, its gas and air cocks R L with the regulator D, the check valve 28, pipe 30 and fixtures A with coupling *a* and passages 32 and 33.

No. 10,242. Improvements in Telephones.

(*Perfectionnements aux téléphones*.)

Abner M. Roseburgh (Co-Inventor with Francis A. Skelton), Toronto, Ont., 16th July, 1879, for 5 years.

Claim.—1st. The combination, in one instrument, of a telephone and a magneto electric signalling apparatus of any convenient construction. 2nd. The combination of a telephone and an electric signalling apparatus with a single or compound permanent magnet in common to the two instruments; 3rd. In connection with an electric generator, with or without a speaking telephone and with or without a bell signal receiving apparatus, the combination of a short circuiting device and a circuit breaker. 4th. In connection with movable induction coils, with or without a speaking telephone and with or without a bell signal receiving apparatus, the combination of a spring break or any similar device, for the purpose of generating pulsatory electric currents on a telegraph or telephone line. 5th. On a telephone line or on a telegraph line, used for telephone purposes, and in connection with a system of telephones, the combination of a diaphragm and a telephone electro-magnet, for the purpose of calling attention when pulsatory electric currents are used for signalling purposes on said line. 6th. For the purpose of receiving weak undulatory electric currents or weak electric currents of opposite polarity, the combination of an electro-magnet pivoted between fixed polarized armatures, with or without a single permanent magnet used for induction purposes; 7th. In the combination of an electro-magnet pivoted between fixed polarized armatures with a short circuiting device, circuit breaker and movable induction coils with or without a speaking telephone; 8th. The combination of a resistance medium or a condenser, or both, and an electric generator of any convenient construction with or without a bell signal receiving apparatus and with or without a speaking telephone; 9th. In connection with a magneto-electric machine, with or without a speaking telephone, the combination of a resistance medium or a condenser, or both, and either a switch or one or more separate binding posts.

No. 10,243. System of Drainage and Ventilation.

(*Système de drainage et de ventilation*.)

Thomas Jewell, London, England, 16th July, 1879, for 5 years.

Claim.—The general arrangement and combination of flues A B C D E with pipes and apparatus.

No. 10,244. Improvements in Copying Ink.

(*Perfectionnements à l'encre à copier*.)

Joseph M. Jacobs, Montreal, Que., 16th July, 1879, for 5 years.

Claim.—1st. A compound of gelatine glycerine water and whitening; 2nd. A new article of manufacture a copying tablet composed of gelatine, glycerine water and whitening provided with a back or support A; 3rd. A compound of anniline crystals alcohol and water forming an ink in combination with a tablet composed of gelatine, glycerine water and whitening.

No. 10,245. Apparatus for Spooling in Combination with Sewing Machines.

(*Appareil à bobiner en rapport avec les machines à coudre*.)

John Kayser, Kaiserslautern, Germany, 16th July, 1879, for 5 years.

Claim.—1st. The combination, with the needle bar of a sewing machine, of the spindle *d*, carrying spool *g* held up by spring *e*, and friction wheel *f* put in gear at will with driving mechanism of machine. 2nd. In combination with spindle *d* rotated at will, the box *a* carrying the wheel *e*, which receives motion from worm *d* and operates lever *m*. 3rd. In combination with the rotating spindle *d*, the lever *i* with shoulder *l* and spring *k*.

No. 10,246. Improvements on Reaping Machines.

(*Perfectionnements aux faucheuses-moussonnuses*.)

Melville T. Neale, London, Eng., 16th July, 1879, for 5 years.

Claim.—1st. The combination of the flat inclined forward platform *l* and the flat rearward platform 28, constructed with spaces or slots, 2nd. The

rearward platform 28 consisting of transverse boards planks, or their equivalents, and longitudinal timbers or bars 28a, in combination with the sockets attached to the framing of the forward platform, so that said rearward platform may be adjusted longitudinally of the machine; 3rd. The rake or brush 4 with its arms 5 pivoted or jointed at 5a to arms carried by the axis 8; 4th. The combination, with the arms 5, of the bracket 6 with its roller or pin; 5th. The combination, with a pivoted rake or brush, of a ring or cam pat' for controlling the movement of the said rake or brush; 6th. The combination of the rake or brush 4, its arms 5, the pivot or joint 5a, the bracket 6 on the axis 8, the bracket 6 with its roller and the ring or cam pat' 7; 7th. The combination, with the rearward platform, of tines or prongs 8 and their equivalents, 8th. The combination, with the rearward platform 28 and the tines or prongs 34, of the springs or counterbalances for keeping the said tines or prongs in their proper normal position, 9th. The combination with the fixed receiver or hooks 35a, of the movable compressing arms 35, and in combination with the compressing arms 35 and cam on the main shaft 36 the volute pulley and yielding connection for operating the said compressing arms 35; 11th. The combination with the main shaft 19, cam 31, lever 32 and connecting rod 33, of the reciprocating intermittent fork or rake 29; 12th. In combination with the rearward platform and tying gear, the fork 29, tines or prongs 34, compressor hooks 35 and receiver 35a, for the purpose of gathering, compressing and holding the stalks to be bound; 13th. The combination, with the compressing arms 35, of bars or parts arranged to slide to and fro, and to project at the proper time for receiving the binding material in the absence of sufficient stalks to be bound; 14th. The combination with the compressing arms and sliding bar or part 40, of the spring hinge 40a to allow said bar or part 40 to accommodate its position to the strain on the binding material; 15th. The combination, with the compressing arms, sliding bars or parts and their forked frame, of the curved fixed bar or plate 41; 16th. The combination, with the arm 42 of the twine carrier, of the shield or guard 30 to prevent entanglement with the stalks during the passage of the said arm around them; 17th. The combination, with the arm 42 of the twine carrier, of the pinion 26 with the two projections or large teeth at its side; 18th. The combination, with the toothed quadrant 25, of the sliding ring or circle 27 with its two recesses; 19th. The combination, with the twine carrier arm 42, of the pinion 26 with its two projections or large teeth, the toothed quadrant 25, side wing 27, with its two recesses and gear for operating same; 20th. In combination, with the frame 18 and tying gear, of the timbers or bearers 17, carrying the said tying gear and adjustable sockets; 21st. The combination, with the loopers 50 51, of the fixed loop retainer 52a; 22nd. The combination, with the loopers 50 51, and main shaft 19, of the cam 61, lever 56 and connecting rod 55; 23rd. The combination, with the loopers and their frame, of apparatus for gripping the binding material to prevent the collection of stalks from receiving slack, while the loops are being delivered on to the tube or sheath of the reciprocating pincers; 24th. The combination of the bar 51a and its projections with the looper frame 54; 25th. In combination with the looper frame 54 and projection bar 51a, the bar or presser 49 with its tail out arranged to be operated by the projections of said bar 51a; 26th. The hook-shaped tightener 67 in combination with its spring 70; 27th. The combination, with the looper frame, of the spring tension device 66, with its pulley 66a; 28th. The combination with the main driving shaft 19, of the double faced cam 57, with its lever 58 and connecting rod 56 for operating the loopers, and its lever 60 for operating the tube or sheath; 29th. The combination, with the main driving shaft 19, of the double faced cams 61 and its lever 62, for operating the reciprocating pincers, and its lever 63 for operating the pusher; 30th. The combination with the sheath 44, of the tail piece 45; 31st. The combination, with the tail piece 45, of the shield or guard 45a; 32nd. The combination with the case 46 and sheath 44 of the twine carrier pincers, of the spring 46a and projections 46b; 33rd. The combination, with the main driving shaft 19 and the cam or kicker 48, of the flange lever 47, by which motion is transmitted to the sheath 44 of the twine carrier pincers; 34th. The combination, with the main driving shaft 19 and rake cam 31, of the clutch 20; 35th. The combination, with the tube or sheath 44, of the cleat discs, screws 65 and tail nut 33a, for the purpose of gripping the binding material.

No. 10,247. Improvements in Spring Motors.

(*Perfectionnements aux moteurs à ressort*.)

Walter M. Rice, Montreal, Que., (Assignee of Elisha Shiver, Pittsburg, Pa. U. S.) 16th July, 1879, for 5 years.

Claim.—1st. The two pinions *f g*, mounted in suitable shafts, both having a simultaneous motion into and out of gear with the spur wheel *l*, said motion being imparted from the winding shaft. 2nd. The shaft *g* of frame K, carrying the pulley shaft *l*, and two pinions *f p*, in combination with the spur wheel *l*, whereby the same attachments may be made operative in machines running in opposite directions. 3rd. In the spring T, through said and out of contact with the fly wheel N by the trip arm V, for stopping and starting, in combination with the rubber bar S and pressure lever U, for regulating the speed. 4th. The drum m on the shaft L, in combination with the rubber bar S, having a spring extension provided with a series of notches or ratchet teeth, and the pressure lever U, the lower end of which is adapted to engage in any desired one of the notches or ratchet teeth, and thereby regulate the speed. 5th. The wood pulley R, having working faces of different diameters and divided longitudinally into two halves, clamped upon the shaft by the screws *r*, passing from one half into the other. 6th. The gear driving wheels with their centres arranged in a straight line in combination with the spring shaft and driving springs. 7th. The combination of three or more frame plates or standards with the driving gear springs and operating parts. 8th. The hubs provided with spring connecting hubs and having a square hole, in combination with the shafts provided with squared sections to receive said hub.

No. 10,248. Machine for Gathering and Binding Corn, &c.

(*Machine à cueillir et à lier le blé-d'inde, &c.*)

William Woolnough and Christopher Kingsford, Kingston, Eng., 16th July 1879, for 5 years.

Claim.—1st. The combination of parts for binding corn and other cut crops into sheaves, composed of an arm fitted with oscillating nippers and movable jaw or cleat for holding the strings or other suitable binding materials, thus enabling the sheaf to be pressed close to the knotting gear, as a fork for twisting the strings having a vertical oscillating and rotary motion imparted to it by the rack and pinion herein described, nippers for drawing the strings

through the loop, a spring lever in connection therewith for tightening the knot close to the sheaf, and knives, between the edges of which the strings are forced in order to cut them all. 2nd. The machine for picking up corn or other cut crops and delivering the same to the aforesaid or other tying apparatus; 3rd. The machine for receiving corn or other cut crops from a reaper composed of a balanced tilting platform, which is automatically or otherwise put in motion through the medium of a clutch bolt and slide arrangement acting by reason of the weight or impulse of the corn or other crop falling upon the balanced platform and delivering the same to the aforesaid or other tying apparatus. 4th. A convertible machine constructed to perform either of the aforesaid operations.

No. 10,249. Improvements on Horse Power Machines. (*Perfectionnements aux machines.*)

John Jackson, Lucan, Ont., 16th July, 1879, for 5 years.

Claim.—The spur wheel H, and bull-pinion I, in combination with the stationary bull-wheel A, pinion B and spur wheel C.

No. 10,250. Machine for Cutting the Tapering Plug end of well Tube Joints. (*Machine à couper le bout cône des joints des tuyaux de puits.*)

Thomas Ford, Plattsville, Ont., 16th July, 1879 (Extension of Patent No. 3,625), for 5 years.

No. 10,251. Machine for Blocking Horse Collars. (*Machine à donner la forme à jour aux colliers de cheval.*)

William Vahay, Forest, Ont., 16th July, 1879 (Extension of Patent No. 3,702), for 5 years.

No. 10,252. Improvements on Machine Guns. (*Perfectionnements aux canons mécaniques.*)

Myron Coloney and James H. McLean, St. Louis, Mo., U. S., 17th July, 1879, for 5 years.

Claim.—1st. In a machine gun constructed with a horizontal range of barrels, a chambered breech slide working in rear thereof, and suitable guides to effect the simultaneous introduction of cartridges as the slide is projected alternately on each side of the range of barrels; 2nd. The combination of the range of hammers 71 71, elevating bars 78 and lever 79 80 81, to effect the simultaneous cocking thereof; 3rd. The combination, with a range of hammers 71 71, of a corresponding range of triggers 75 75, to release the hammers in succession; 4th. A battery gun mounted on a carriage with wheels transverse to the line of fire; 5th. A casing for machine guns constructed with a series of shelves 87 and a hinged door or tail-board 88, giving access thereto from the rear and supported by a brace 90; 6th. The casing constructed with shelves 87, compartment 92, ammunition box 94 and doors or shutters 93 95.

No. 10,253. Improvements on Electric Apparatus. (*Perfectionnements aux appareils électriques.*)

Charles F. Brush, Cleveland, Ohio U. S., 17th July, 1879, for 5 years

Claim.—1st. An annular armature constructed from a single solid piece of metal and grooved upon its periphery, or sides or both. 2nd. An annular armature, consisting of two or more plates formed with grooved sides or peripheries or both, and insulated either partly or entirely from each other. 3rd. A commutator cylinder consisting of an insulating hub or body to which are attached subsegments placed in proper electrical connection with the general mechanism in which the commutator is employed and wearing segments detachably attached to said subsegments. 4th. The combination of subsegments R, wearing segments S or T and screws K. 5th. The commutator having metallic insulating segments T. 6th. A commutator having metallic insulating segments I, attached to, and forming part of the adjoining conducting segments S, as shown in division three. 7th. A commutator having two conducting segments S, two opposing ends of which said segments are separated by an intervening insulator T, the other ends of said segments while insulated from each other being closely associated and not provided with an insulator T. 8th. A dynamo electric machine wherein a portion of the current produced, or capable of being produced thereby, is diverted for the purpose of maintaining a permanent magnetic field. 9th. In a dynamo-electric machine, the wire or helix E, having a comparatively high resistance and kept in closed circuit while the machine is running, in combination with the magnet wire or helix F, as commonly employed. 10th. In an electric lamp, the combination of the carbon holder and core of a clamp surrounding the carbon holder, said clamp being independent of the core but adapted to be raised by a lifter secured thereto. 11th. In an electric lamp, the clamp D, or its equivalent, by means of which the carbon holder B is firmly held and permitted to accurately feed the carbon point as the same is consumed. 12th. In an electric lamp or regulator, the combination of the clamp D and adjustable stop H, or their equivalent, by means of which the carbon points are prevented from becoming so far separated as to break the electric current and extinguish the light. 13th. In an electric lamp, the combination of core or armature C and the clamp D, by means of which the carbon points are separated from each other as soon as the electric current is established and held as under during the continuance of the current, and then permitted to come together as soon as the current ceases. 14th. In an electric lamp or regulator the combination of the core or armature C, the clamp D and adjustable stop D, or their equivalent, whereby the points of the carbons are separated from each other when an electric current is established, and prevented from separating so far as to break the current and gradually feed together as the carbons are consumed. 15th. In combination with the core C, one or more sustaining spring e, or other equivalent.

No. 10,254. Improvement on Breech Loading Fire Arms, &c. (*Perfectionnements aux armes à feu chargées par la culasse, &c.*)

Myron Coloney and James H. McLean, St. Louis, Mo., U. S., 17th July, 1879, for 5 years.

Claim.—1st. A breech loading gun constructed with a chambered slide and a recoil spring and follower to take up the force of the explosion. 2nd. A breech slide constructed with chambers extending completely through from front to back, said slide having a reciprocating movement transverse to the gun, so that one chamber, or set of chambers, is brought into position for loading while the other is in position for firing, and vice versa. 3rd. The combination of a chambered breech slide 8 and a shutter 14 to close or cover its rear end. 4th. A recoil spring, follower and firing pin combined to effect the automatic cocking of the firing pin by the force of the explosion. 5th. The trigger constructed with two holding pins to insure the catching of the firing pin. 6th. A cartridge constructed with a cylindrical shell and a ball of greater diameter, forming a shoulder for seating the cartridge in loading from the front and permitting the free expansion of the shell rearward after the ball is discharged. 7th. A circumferentially grooved cartridge in combination with a transversely moving breech slide and a suitable holder to permit the introduction and removal of the cartridge and shell by transverse movement, and to hold it against the stroke of the firing pin.

No. 10,255. Nail Machine. (*Machine à clou.*)

Royal C. Grant, Middleport, Ohio, U. S., 17th July, 1879 for 5 years

Claim.—1st. The combination with the cylinder, the movable block carrying the nipper, the shaft having an arm o, and the cam for raising and lowering the nipper block, for the purpose of carrying the blank down to the score in the dies and subsequently expelling the cam. 2nd. In rest plate M, the nipper block and the nipper combined with the feed tube and cylinder. 3rd. The movable die attached to the die block X, the eccentric, the cam for operating them, and arms or projections with which said cam comes in contact as the cylinder rotates, for the purpose of operating the die. 4th. The combination of the pivoted adjustable lever A, having an arm a, the L-shaped cam Z, and the eccentric and movable die; 5th. The combination of a vertical rotating feed tube and a horizontal rotating cylinder, e provided with suitable knives or cutters. 6th. The combination of the rotating feed tube, the tappet device, and the bars for holding and oscillating the nail plates. 7th. The tappet proper, having a screw nut and spring applied to its shank, in combination with the push bars and plate holding bars. 8th. The combination of the spring e and the push bars and plate holding bars b b.

No. 10,256. Improvements on Carriage Rockers. (*Perfectionnements aux roulements des voitures.*)

Joseph Benoit, North Hatley, Que., 17th July, 1879, for 5 years.

Claim.—The lower bar A, in combination with the countersunk lock C and the flanges b b, the upper bar D, in combination with the lock E, the flanges F F and the socket I, also the bolt cover K.

No. 10,257. Improvements on Boiler Furnaces. (*Perfectionnements aux fourneaux des chaudières.*)

William Scully and Richard S. Dillon, Detroit, Mich., U. S., 17th July, 1879, for 5 years.

Claim.—1st. The hopper D, table E and reciprocating slide or strike F F F, combined together for the purpose of intermittently measuring the fuel previous to discharging the same into a boiler furnace. 2nd. The mechanical devices composed of a reciprocating slide, mechanically actuated by means of which the fuel is discharged from the table E, upon the grate bars A of a furnace, through an opening in the front wall thereof. 3rd. The combination of a mechanically measuring and feeding device with a boiler furnace. 4th. The grate bars A. 5th. The combination of the grate bars A with mechanically measuring and feeding devices. 6th. In combination with a boiler furnace, an independent dumping grate C, actuated outside the furnace wall. 7th. The combination with the grate bars A, an independent dumping grate C, when said bars are adapted, in their reciprocating movements, to force the debris of the fire on to said dumping plate or grate. 8th. The combination of mechanically actuated fuel measuring and feeding devices with grate bars A, adapted to receive the fuel upon their forward ends, and gradually advance the same toward the rear of the furnace. 9th. A boiler furnace provided with a mechanically operating measuring and fuel feeding device, and with grate bars actuated by said measuring and feeding devices, the combination therewith of an independently actuated dumping plate. 10th. In combination with a boiler furnace provided with mechanical devices for measuring and feeding fuel to the same through an opening in the front of said furnace wall, the flue M immediately over said opening, for the purpose of discharging heated air on to the fuel as it enters the furnace.

No. 10,258. Machine for Nutting Bolts.

(*Machine à visser les noix sur les boulons.*)

Ralph Hudson, Orrin Clark and Albert Jenkins, (Assignees of Samuel L. Worsley,) Buffalo, N. Y., U. S., 17th July, 1879, for 5 years.

Claim.—1st. The combination of the nut holder constructed with a cross channel for the nuts, the nut mover and the bolt discharger. 2nd. The combination of the nut holder, the bolt holder, the bolt clamp and the turning mechanism. 3rd. The combination of the nut holder, the bolt holder, the bolt clamp, the turning mechanism and the leading cam. 4th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp and the turning mechanism. 5th. The combination of the nut holder, the bolt holder, the bolt clamp and the turning mechanism. 6th. The combination of the nut holder, the bolt holder, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam. 7th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam. 8th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam. 9th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp and the transfer mechanism.

mechanism; 10th. The combination of the nut mover, the bolt mover, the bolt clamp and the transfer flugers; 11th. The combination of the nut mover, the bolt mover, transfer mechanism, the bolt clamp, the turning mechanism and the leading cam; 12th. The combination of the nut mover, the bolt mover, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam and the piston rod having a head of uniform size in the rear of its shoulders; 13th. The combination of the nut holder, the bolt holder, the bolt clamp, the turning mechanism and the transfer mechanism; 14th. The combination of the nut holder, the bolt holder, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam and the bolt discharger; 15th. The combination of the nut holder, the bolt holder, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam, and the piston rod having a head of uniform size in the rear of its shoulders; 16th. The combination of the nut holder, the bolt holder, the bolt mover, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam; 17th. The combination of the nut holder, the bolt mover, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam; 18th. The combination of the bolt clamp, leading cam, and connecting mechanism, the last operating to close said clamp, to move it forward to advance the bolt carried by said clamp, into the nut, to permit said clamp to open and to move it back; 19th. The combination of the bolt clamp, the turning mechanism, the leading cam and the stop latch; 20th. The combination of the nut holder, the bolt holder, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam and the stop latch; 21st. The combination of the nut mover, the bolt mover, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam and the stop latch; 22nd. The combination of the nut holder, the bolt holder, the nut mover, the bolt mover, transfer mechanism, the bolt clamp, the turning mechanism, the leading cam and the stop latch; 23rd. The combination of the transferring flugers, the bolt clamp, the turning mechanism, the leading cam and the stop latch; 24th. The combination of the bolt holder, the bolt mover, the bolt guard and the transferring flugers; 25th. The combination of the bolt holder, the bolt mover, the bolt guard, the transferring flugers and the bolt clamp; 26th. The combination of the bolt holder, the bolt mover, the bolt guard, the transferring flugers, the bolt clamp, the nut holder and the turning mechanism.

No. 10,259. Improvements on Chisel Pointed Cut Nails and Machines for Making the same. (*Perfectionnements aux clous coupés biseautés et aux machines pour les fabriquer.*)

George Stacy, Montreal, Que., 18th July, 1879, (Extension of Patent No. 3666), for 5 years.

No. 10,260. Improvements in Ploughs. (*Perfectionnements aux charrues.*)

Francis Stanley, Toronto, Ont., 21st July, 1879, for 5 years.

Claim.—1st. The ploughshares B, pivoted on the bolts D to the frame A and provided with coulters bars E, in combination with the links Q and lever O; 2nd. The pivoted ploughshares B, provided with coulters bars E, in combination with the guide bars E'; 3rd. The wheel I, pivoted to the spindle J having an adjusting nut N, or its equivalent, in combination with the frame A of a gang plough; 4th. The barbed cultivating wheel S, when used in combination with an adjustable spindle, attached to the frame of a gang plough.

No. 10,261. Mechanism for Transforming Rectilinear Reciprocating Motion into Rotary Motion. (*Mécanisme pour changer le mouvement rectiligne de va-et-vient en mouvement rotatoire.*)

William F. Goodwin and Edward F. Roberts, New Brunswick, N. J., U. S., 21st July, 1879, for 5 years.

Claim.—1st. The mechanical movement composed of the reversed spirally inclined planes A B C, arranged to operate together in the manner described; 2nd. The reversed spirally inclined planes A B C, arranged within the cylinder D, in such manner that the cylinder will serve as an enclosure and support for the movement and to retain oil to the working surfaces of its spiral planes; 3rd. The combination with the cylinder D, of the reversed inclined planes B C, arranged to form the heads of said cylinder; 4th. The combination of the inclined planes A B C, the flanges b c of said planes B C, the cylinder D and its flanges d, and the hubs M N, constructed and arranged to serve the purpose of a lifting winding drum; 5th. The lever G, in combination with the reciprocating mechanism of the movement; 6th. In combination with the lever G, the anti-friction roller bearings H h h', 7th. In combination with the buffers I I', 8th. The combination with the shaft F, and collar or disk N; the bearing N, carriers N', rollers n, and the end plates n' n'; 9th. In combination with the hubs M M' and cylinder D of the movement, the cages of anti-friction rollers m, and the recessed bearings m'.

No. 10,262. Improvements in Fire Alarm Boxes. (*Perfectionnements aux boîtes d'alarme d'incendie.*)

Alexander Anderson and Josiah Nesbitt, Toronto, Ont., 21st July, 1879, for 5 years.

Claim.—1st. A fire alarm signal box, having its mechanism so arranged that the signaling mechanism shall be put in operation by the opening of the door or the withdrawal of a stop; 2nd. The double arm H, connected to the alarm works as specified, and provided at one end with a tongue F, and at the other with a hub I holding the double-ended crank J K, in combination with the ledge L, or its equivalent, and the latch O attached to the door P; 3rd. The spindle Q, having a suitable arm R, in combination with the latch O attached to the door P; 4th. Insulating the circuit breaker S, by inserting the rubber band T, or its equivalent; 5th. The switch W, pivoted to the post V, and arranged so that it can be brought in contact with the post V.

No. 10,263. Process and Apparatus for Evaporating Liquids. (*Procédé et appareil de vaporisation des liquides.*)

Francis Rourke, Dublin, Ont., 21st July, 1879, for 5 years.

Claim.—1st. The process for the evaporation of brine and other liquids having solids in solution, the said process consisting in forcing the liquid into the air in spray or a finely divided state; 2nd. The combination with appliances adapted to force brine or other liquids having solids in solution into the air in spray form, of receiving pans arranged to receive the precipitated salt and surplus liquid and to separate them as set forth.

No. 10,264. Improvements on Curd Cutters. (*Perfectionnements aux ménules de fromage.*)

Henry H. Potter, Sterlingville, and James B. Harris, Antwerp, N. Y., U. S., 21st July, 1879, for 5 years.

Claim.—1st. The combination with the frame A, having post B of the lever C, suspended follower D and box E, having a removable frame bolt M F provided with intersecting knives H; 2nd. The combination of the box E, having guide posts f, the follower D, suspended from the lever C, and the bent wire handle I, for swinging and sustaining the follower clear of the box, for insertion of the curd.

No. 10,265. Improvements on Washboards. (*Perfectionnements aux planches à savonner.*)

John C. Schoonmaker, Hamilton, Ont., 21st July, 1879, for 5 years.

Claim.—The combination of the wooden frame A, with a metal covering B, having the corrugated rubbing surface E, the soap rests C, and the cast soldered thereto.

No. 10,266. Improvements in Harvester Rakes. (*Perfectionnements aux râtaux des moissonneuses.*)

Christopher C. Bradley, Syracuse, (Assignee of Mary J. Holmes, administratrix of the estate of Perry Thompson, Ostrico), N. Y., U. S., 21st July, 1879, for 5 years.

Claim.—1st. An automatic mechanism for opening the gate of a harvester rake cam way, so as to force any particular arm to rake, the following devices in combination, viz. a trip latch M, adapted to be acted upon by the said raking arm, a counter balanced lever S, a cross lever G, connected with the gate, and a spring H; 2nd. An automatic mechanism for closing the gate of a harvester rake cam way, so as to force any particular arm to reel, the following devices in combination, viz. a shutting lever I, adapted to be acted upon by a raking arm, a lever and link connection J K L, a cross lever G, connected with the gate, and a self acting lock lever S to clutch the cross lever and keep the gate shut; 3rd. The combination with the cam way B, having a slight rotation about the rake head standard, with reference to the rake head and rake arms, of the automatic mechanism for opening and closing the cam way gate; 4th. In combination with a trip latch hung upon a slotted pivoted bearing O N, a removable pin P adapted to prop the latch up into position for action; 5th. In combination with a rake cam way, a movable gate C, arranged to be acted upon automatically by the rake arms to open and to shut, so as to cause the arms to rake and to reel; 6th. The trip latch M; 7th. The combination of the trip latch M, with the lock latch S; 8th. The lock latch S, counterbalanced by the weight U; 9th. The combination of the cross lever G, which carries the gate C, and is connected with the shutting lever I, with the lock latch S and supplement latch X; 10th. In combination with a trip latch hung upon a slotted pivoted bearing O N, a removable pin P, adapted to prop the latch up into position for action; 11th. A device for keeping the gate of a harvester cam way open, a spring H, in combination with a cross lever G, connected with the gate; 12th. As a means of connecting and controlling the relative position of the cam way gate C, a shutting lever I, the stems J F, levers K G and link L, in combination as described.

No. 10,267. Steel Tempering Furnace. (*Fourneau pour recuire l'acier.*)

John B. Armstrong, Guelph, Ont., 21st July, 1879 (Extension of Patent No. 4034), for 5 years.

No. 10,268. Improvements in Wringing Machines. (*Perfectionnements aux essoreuses.*)

Alfred Eddy (Assignee of Ransom G. Baldwin & Andrew J. Parkhurst, Oskaloosa, Iowa, U. S.), 21st July, 1879, for 5 years.

Claim.—The combination of the presser plate D, having groove d rack G, having ridge c, frame pieces ff, having butts g g, and pivoted cog lever H.

No. 10,269. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

William J. Stewart, St. Louis, Mo., U. S., 21st July, 1879, for 5 years.

Claim.—1st. The combination of convex faced eccentric D, shuttle driving lever F, yoke E E', and recessed roller blocks D, upon the arms of the yoke; 2nd. Roller blocks D', having bearing recesses d d', varying in position relatively to the pivot pin of the roller block; 3rd. The provision of the shuttle driving lever F, of the yoke arm connected to the arm by adjusting screw e and with end e', resting against spring e'; 4th. The combination of cam I, on shaft B, lever bar L, bell crank lever n and adjusting pin O, with eccentric bearing stud O; 5th. The friction block or rollers P formed with one or more recesses d; 6th. The feed operating head or disc O', formed with a series of stitches indicating numbers; 7th. The provision, in a sewing machine, of an indicator plate P, for indicating the numbers of needle, stick and thread that are to be used together; 8th. The operating disc O', provided with a series of stitch indicating numbers, in combination with the indicator plate P; 9th. The shaft g, made in two portions, and connected together by a coupling sleeve q; 10th. The take up lever S; 11th. The combination, in a needle holder for sewing machines, of a sleeve R, re-

cessed block *r*, and set screw *r*₁; 12th. The combination in a needle holder for sewing machines, of the block *r*, adjustable in the sleeve *R*; 13th. The combination, in a needle holder for sewing machines, of the sleeve *R*, having vertical collar *r*, for attachment to the needle arm with the needle holding block *r* and set or thumb screw *r*₁; 14th. The combination, in a needle holder for sewing machines, of the sleeve *R*, having vertical collar *r*, for attachment with the needle arm by thumb or set screw *r*, with the needle holding block *r*, recessed at one side and set or thumb screw *r*₁.

No. 10,270. Improvements on Scoop Shovels.
(*Perfectionnements aux pelles-écopes.*)

Benjamin F. Brown, Tilton, N. H., U. S., and Francis P. Buck, Sherbrooke, Q., 21st July, 1879, for 5 years.

Claim.—1st. A scoop shovel composed of the wooden bottom *A*, provided with lapped band *C*, and reinforcing band *D*, having attached to its side edge a die-formed flaring metal side rim *B* with pointed projections *L*, and a handle *E* having straps *F* *G*, with cross section *H* rivetted to the rim *B* and band *D*; 2nd. The handle *E*, suited to receive the rim *B*, and secured to the bottom *A* by rivetted straps *F* *G*.

No. 10,271. Improvements on Carriage Wheels.
(*Perfectionnements aux roues des voitures.*)

Hilare Paré, Sherbrooke, Que., 21st July, 1879, for 5 years.

Claim.—The yoke *A*, in combination with the shoulder *C* and cap *d*, also the tenon *B*, in combination with the screw *F*.

No. 10,272. Improvements on Paper Pockets for Cigars.
(*Perfectionnements aux sacs en papier pour les cigares.*)

Orville L. Parmenter and James Fogarty, Jr., Cincinnati, Ohio, U. S., 21st July, 1879, for 5 years.

Claim.—A series of pockets or receptacles for cigars composed of two thicknesses of suitable material fastened together at one edge and along the transverse lines *a*, and perforated transversely along the line *c* between the lines *a*; 2nd. The method of constructing cigar pockets or receptacles by folding a strip of material of suitable width upon itself once, and then fastening the two thicknesses together along transverse lines arranged sufficiently far apart to provide an enclosed space large enough to hold a single cigar, and perforating the strip transversely between the fastening-lines; 3rd. An elastic chain strip of cigar pockets, composed of a single piece of material folded upon itself, fastened together along the transverse lines *a*, bent or creased at the folded edge on a zig-zag line *b*, and perforated along the line *c*.

No. 10,273. Improvements on Nest Eggs.

(*Perfectionnements aux niches artificiels.*)

Orator F. Woodward, Le Roy, N. Y., U. S., 21st July, 1879, for 5 years.

Claim.—1st. An artificial egg made of a compound of brimstone, or brim stone and gypsum, carbolic acid, oil of cedar and asafetida; 2nd. The central body *a*, of gypsum or equivalent material, and a covering *b* of brimstone.

No. 10,274. Machine for Making Metal Screws.
(*Machine pour faire les vis metalliques.*)

Levi W. Stockwell, Cleveland, Ohio, U. S., 21st July, 1879, for 5 years.

Claim.—1st. A revolving series of non-rotating rod holders, in combination with a series of rotating tools, adapted to operate simultaneously and successively on the rods to perform the operations of milling the rods, threading the screws and severing the screws from the rods, the series of rod holders being adapted to carry rods, which may be fed forward at each rotation of the series for the formation of screws; 2nd. The carrier *L*, in combination with stop *h*₀, spring *z*₂, arms *A*₁ *A*₃, spring pin *s*₁ and wheel *e*, having a toothed segment; 3rd. The wheel *P*, having a toothed segment and cam *R*, in combination with the bar *d*₁, rods *a*₂, spindles *o*₇ and *o*₈ and chucks *D* *D*₁; 4th. The wheels *P* *e*, each having a toothed segment in combination with wheel *o*₁, shaft *d*₂, carrier *L*, pawl *b*₁, ratchet *b*₂, and the cam *R*, bar *d*₁, rods *a*₂, spindles *o*₇ and chucks *D* *D*₁; 5th. The cams *e*₁ *e*₂, in combination with rods *f*₀ *f*₁, screw wheel *c*₃ and screw *a*₅; 6th. The lever *o* and screw *o*₂ in combination with rod *d*₃, collars *f*₀ *f*₁, spring *f*₅, clutch *n* and pins *s*₁; 7th. The chuck *E*₁ and wheel *n*₁, in combination with wheel *o*₁, screw *o*₂, lever *e*₂, rod *d*₈ and clutch *n*; 8th. The clutch *o*₈, in combination with stop *c* and the scroll wheel *m*₀; 9th. The chuck *F* and screw *s*₁, in combination with wheels *o*₄, *o*₇, clutch *o*₄, stop *c*, wheel *n*₈ and scroll wheel *m*₀; 10th. The chuck *F*₁, spindle *2*, rod *d*₁, wheels *o*₄, *o*₇, screw *s*₁, collar *e*₂, lever *e*₁, collar *h*₅, spring *s*₈, rod *d*₁, clutch *1*, wheel *h*₁, spindle *5* and chuck *E*₁; 11th. The clutch *o*₄, for withdrawing chucks *F* *F*₁, in combination with lever *V*₂, screw *s*₁, collar *X*₁, lever *e*₂, rod *d*₁ and clutch *1*; 12th. The combination of chuck *F*, spindle *e*, sleeve *b* and wheel *n*₂, with wheel *n*₁, clutch *s*, sleeve *1*, spindle *4* and chuck *E*₁; 13th. The cam *R*, a part of *h* being parallel with its line of motion, in combination with bar *d*₁, rod *a*₂, spindle *7*, chuck *D*, and with the toothed segment wheel *P*, wheel *o*₁, toothed segment wheel *e*, shaft *d*₂, ratchet *b*₁, pawl *b*₂ and carrier *L*.

No. 10,275. Process and Apparatus for Filtering Sugar Solutions.
(*Procédé et appareil pour filter les solutions saccharines.*)

George C. W. Boelcher, St. Louis, Mo., U. S., 21st July, 1879, for 5 years.

Claim.—1st. The combination of a tight case, filtering bags within the case secured to one head only and stopping short of the other, a reinforcing

tube having suitable interstices and mechanism for supplying the liquor to be filtered under pressure; 2nd. The combination of pressure cylinder, filtering bags secured to one head thereof and stopping short of the other, and perforated metallic reinforcing tubes within the bags; 3rd. The combination of a tight case, filtering bags within the case secured to one head and stopping short of the other, and mechanism for supplying the liquor to be filtered under pressure; 4th. The combination of a tight casing, a series of independent filters suspended therein, mechanism for forcing the liquor to be filtered through the filter in one direction, and mechanism for passing the cleansing medium through the filters in the reverse direction; 5th. The combination of a pressure casing a series of independent filters in a common chamber therein, mechanism for forcing the liquor to be filtered into the chamber of the casing through the filters and out through their delivery tubes, and mechanism for passing a cleansing medium in through the filters, out into the chamber of the casing and through a suitable inlet, disintegrating and carrying with it the sediment or faecal previously deposited upon the outside of the filters; 6th. The combination of filtering bags hung by one end only, of perforated reinforcing tubes secured at the end corresponding with the mouth of the bag and free at the other end; 7th. The improved bottle for use in sugar filters, formed with an outward bulge or swell for the support of the bag, and from thence conveying inwardly and downwardly to the lower aperture; 8th. The improved bottle having the bulge and inward convergence in combination with the filtering bag and reinforcing tube; 9th. The combination of a sleeved tube, nipple and bottle with pressure casing *A*; 10th. The combination of a sleeved tube, nipple and bottle with the pressure casing, and the filtering bag suspended therein; 11th. The described method of cleansing the bags by forcing a stream through them in the opposite direction from the filtration.

No. 10,276. Improvements in Grain Binders.
(*Perfectionnements aux lieus à grain.*)

Edwin R. Whitney, Magog, and Charles L. Bossé, Montreal, Q., 21st July, 1879, for 5 years.

Claim.—1st. An automatic low level grain binder, attached to and operated by a reaping machine; 2nd. The combination of the binding apparatus proper, of an endless belt, or apron operated automatically by positive lever motion, moving at right angles to the line of traction of the reaping machine, and taking the grain from the delivery platform; 3rd. In combination with a lever acted upon positively and automatically to give, through a pivoted pawl and ratchet gear wheel motion to the gears and rollers working the apron *A*, a lever controlled by the driver and operating to vary the throw of the actuating lever, and thus diminish or increase the distance travelled by the apron; 4th. The combination with travelling belt, or apron, of a grain carrier traversing it at right angles, backward and forward, and operated in either direction by a positive lever motion; 5th. The grain carrier *I* with set *12*, formed on its lower bar; 6th. The combination with the rock shaft, to which the needle bar or binding arm is pivoted, of links and levers receiving motion from a counter rock shaft operated by a rising and falling arm; 7th. The needle bar *N*, attached at its rear end to a curved stationary arm by a link pivoted at both ends, and at a point farther forward pivoted to an arm kevel on the operating rock shaft; 8th. The holders *Q*; 9th. The lever *P* with arms *P*₁ *P*₂ acting and operated positively in either direction; 10th. The twister *R*, constructed as described, and having slot *R*₁, formed therein for the introduction of the wire; 11th. The combination of the twister *R*, with gears *B*, *B*₁, and pinion *T* starting them by the action of the log *T*₁, upon projections *T*₂ and rotating them intermittently by toothed segment *T*₃; 12th. In combination with the gears operating the twister *R*, a locking device detached therefrom intermittently by the cam *T*₂, under the actuating gear wheel *T* so timed as to fall into position, when the opening of the frame *S* and slot in the twister coincide in position.

No. 10,277. Machine for Cutting Veneers.
(*Machine pour couper les bois de placage.*)

John D. McEachern, Galt, O., and David H. Burrell, Little Falls, N. Y., U. S., 21st July, 1879, for 5 years.

Claim.—1st. The combination of the reciprocating knife with the pressure, roller or bar for gauging the thickness of the veneer, or preventing its checking; 2nd. The reciprocating knife, in combination with suitable mechanism for rotating the log from which veneers are to be cut; 3rd. The combination of the reciprocating knife, a presser roller or bar and mechanism for producing rotation of the log to be cut; 4th. The reciprocating knife bar, in combination with the sliding eccentric for producing such reciprocation; 5th. The reciprocating knife bar, in combination with the devices for supporting it during its reciprocations; 6th. The combination of a sliding knife, carrying frame with the swinging presser roller or bar and a reciprocating knife; 7th. The vertically swinging and horizontally adjustable presser bar, or roller, in combination with a knife carrying frame; 8th. The combination, with the feeding screws of a veneer cutting machine of the frictional gearing and automatic stopping devices; 9th. The toggle *T*, in combination with the vibrating shaft *H*; 10th. The toggle *T* and shaft *H*, in combination with the friction wheels *H* *G* *J*; 11th. The slide *I* and hook lever *U*, in combination with the pin *y*, upon the toggle *T*; 12th. The head block *C*, made horizontally adjustable for the purpose of cutting tapering logs; 13th. The reciprocating knife bar, in combination with the supporting wheels *a* *a*₁ and vertically adjustable axle bearings *m*₁; 14th. The combination of the reciprocating knife bar, perpendicular support *O* and suspension rods *n*; 15th. In a rotary veneer cutting machine, the concave knife with its concave face towards the revolving log, its bevelled edge forming a right angle to the radius of the log; 16th. The inclined ways for the purpose of supporting and gradually lowering the knife bar of a rotary veneer cutting machine, as it advances towards the centre of the log; 17th. The knife bar reciprocating in the side frames *m*₁ through openings provided with adjustable gibbs in combination with supporting rolls *W* and plate *P*; 18th. The combination of the system of friction wheels and feeding screws, with their driving gear, of the sliding clutch *L* and its operating lever *L*.

List of Patents issued up to 21st August, 1879, but not yet Officially published in the Patent Office Record.

- No. 10,297. J. B. Armstrong, Guelph, O., "Tempering Furnace," (Extension of Patent No. 4,034), July 23d, 1879.
- No. 10,298. O. Marland and J. J. Colley, Boston, Mass., U.S.A., "Method of Utilizing the Heat of Furnaces," July 26th, 1879.
- No. 10,299. Ed. Hodgson, London, O., "Process of Refining and Deodorizing Benzene and other Products of Petroleum," July 26th, 1879.
- No. 10,300. D. McPhee, Hamilton, Ont., "Ventilating Attachment for Stoves," July 26th, 1879.
- No. 10,301. H. Bamster, Erie, Penn., U.S.A., "Pipe Tongs," July 26th, 1879.
- No. 10,302. C. C. Bradley, New York, N.Y., U.S.A., "Self-Acting Pitman," (Re issue of Patent No. 5,990), July 26th, 1879.
- No. 10,303. W. E. Rendle, London, England, "System of Glazing," July 26th, 1879.
- No. 10,304. W. E. Eastman, Boston, Mass., U.S.A., "Mitering Machine," July 26th, 1879.
- No. 10,305. Sir J. L. Fowles, Chnton, Scotland, "Ships' Ventilating Apparatus," July 26th, 1879.
- No. 10,306. C. B. Camp, White Pigeon, Mich., U.S.A., "Clothes Wringer," July 26 h, 1879.
- No. 10,307. E. J. Molera and J. C. Cobrian, San Francisco, Cal., U.S.A., "System of Ligh ing," July 29th, 1879.
- No. 10,308. T. Ackland, Almonte, O., "Spring Gearing," July 29th, 1879.
- No. 10,309. O. D. and G. F. Barberie, Administrators of E. A. Barberie, Portland, N.S., "Force Pump," July 29th, 1879.
- No. 10,310. Jas. Irvingston and Jas. Wright, Toronto, O., "Hot Water and Steam Boiler," July 29th, 1879.
- No. 10,311. W. C. Cross, Boston, Mass., U.S.A., "Paper Bag Machine," Aug 1st, 1879.
- No. 10,312. H. Lehmann and A. Borendt, Hanover, Germany, "Fetlock-Sinews Protector for Horses," Aug 1st, 1879.
- No. 10,313. O. Twombly, Lake Village, N.H., U.S.A., "Knitting Machine," Aug. 1st, 1879.
- No. 10,314. O. W. Taft, New York, N.Y., U.S.A., "Bird Cage," Aug. 1st, 1879.
- No. 10,315. Jas. McCrum, Irish Creek, O., "Carnage Top," Aug. 1st, 1879.
- No. 10,316. W. Driscoll, Brockville, O., "Animal Trap," Aug. 1st, 1879.
- No. 10,317. G. H. Hyde, Boston, Mass., U.S.A., "Lamp Wick Adjuster," Aug 1st, 1879.
- No. 10,318. J. Henshaw, St. Hyacinthe, Q., "Stump and Stone Extractor," Aug. 1st, 1879.
- No. 10,319. John H. Davy, Brockville, O., "Iron Fence," Aug. 1st, 1879.
- No. 10,320. G. B. Kelly and M. J. Matthews, Boston, Mass., U.S.A., "Mechanical Musical Instruments," Aug. 1st, 1879.
- No. 10,321. A. Dormitzer, New York, N.Y., U.S.A., "Window Cleaning Step Chair," Aug. 1st, 1879.
- No. 10,322. A. Lesperance, Littleton, N.H., U.S.A., "Rotary Engine," Aug. 1st, 1879.
- No. 10,323. R. C. Cuff, Hamilton, O., "Meat Mincing Machine," Aug. 2d, 1879.
- No. 10,324. W. S. Archer, Yonkers, N. Y. (Assignee of J. A. Southmayd, Elizabeth, N. J., U.S.A.), "Fibro Separator," Aug. 7th, 1879.
- No. 10,325. The Swaincot Machine Company (Assignee of P. Quinn, South New Market, N. H., U.S.A.), "Upright Steam Boiler," Aug. 7th, 1879.
- No. 10,326. B. Hedge, Augusta, Me., and F. A. Cushman, Lebanon, N. H., U.S.A., "Dredging Machine," Aug. 7th, 1879.
- No. 10,327. J. Milne, Hamilton, O., "Fire Back Walls for Stoves," Aug. 7th, 1879.
- No. 10,328. T. A. Blake, New Haven, Conn., U.S.A., "Stone Crusher," Aug. 7th, 1879.
- No. 10,329. H. Kurth, Hamilton, O., "Cockle Separator," Aug. 7th, 1879.
- No. 10,330. K. De W. Bishop (Assignee of W. F. Glass and J. C. Briegleb, Cleveland, Ohio, U.S.A.), "Hydraulic Motor," Aug. 7th, 1879.
- No. 10,331. W. Porteous, Montreal, Q., "Stop and Waste Cock," Aug. 7th, 1879.
- No. 10,332. R. Sornberger, Stanbridge, and P. H. Bedard, Bedford, Q., "Governing Gauge," Aug. 7th, 1879.
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- No. 10,344. J. J. Frottier, Three Rivers, Q., "Improved Sewing Machine," Aug. 13th, 1879.
- No. 10,345. P. Provost, Little Chute, Wis., U. S. A., "Grain Drier," 13th August, 1879.
- No. 10,346. L. H. Bellamy, Augusta, Ont., "Heel Plate for Boots," 13th August, 1879.
- No. 10,347. A. S. Baker, Kalamazoo, Mich., U. S. A., "Harrow," 13th August, 1879.
- No. 10,348. W. A. Bury, Detroit, Mich., U. S. A., "Spring Bed Bottom," 13th August, 1879.
- No. 10,349. G. A. McCully, Hamilton, Ont., "Improvements in Boats," 13th August, 1879.
- No. 10,350. T. Deiotte, Galt, Ont., "Elliptic Spring Heads," 13th August, 1879.
- No. 10,351. T. H. Fletcher, Dover, N. H., U. S. A., "Pegging Machine," 13th August, 1879.
- No. 10,352. M. Harris, New York, N.Y., (Assignee of O. H. Arno, Wilmington, Mass.), U.S.A., "Mechanical Musical Instrument," 13th August, 1879.
- No. 10,353. M. S. Battice and O. S. Falls, Attica, Ind., U.S.A., "Hame Tug Loop," 13th August, 1879.
- No. 10,354. J. W. Powers, Portage, Wis., U. S. A., "Plough Clevis," 13th August, 1879.
- No. 10,355. C. D. Rogers, Providence, R. I., U.S.A., "Wood Screw Making Machine," 13th August, 1879.
- No. 10,356. C. D. Rogers, Providence, R. I., U.S.A., "Screw Head Burnishing Machine," 13th August, 1879.
- No. 10,357. P. Wallace, London, Ont., "Match Making Machine," (Extension of Patent No. 3763), 13th August, 1879.
- No. 10,358. W. A. Greene, Elizabethport, N. J., U.S.A., "Stove," (Extension of Patent No. 9877), 13th August, 1879.
- No. 10,359. W. A. Greene, Elizabethport, N. J., U.S.A., "Stove," (Extension of Patent No. 9877), 13th August, 1879.
- No. 10,360. W. R. White, Neaga, Ill., U. S. A., "Fence," 14th August, 1879.
- No. 10,361. F. L. Wilson, Saginaw, Mich., U.S.A., "Washboard," 14th August, 1879.
- No. 10,362. S. B. Bennett, Wallaceburgh, Ont., "Buggy Shaft Coupling," 14th August, 1879.
- No. 10,363. W. P. and W. T. Wood, Washington, Cal., U.S.A., "Vapour Engine," 14th August, 1879.
- No. 10,364. F. Bigaouette, Montreal, Que., "Advertising Apparatus," 14th August, 1879.
- No. 10,365. T. Sparham, Brockville, Ont., "Fire-Proof Paint," (Extension of Patent No. 3786), 16th August, 1879.
- No. 10,366. C. Hoffmann, New York, N. Y., U. S. A., "Furnace Grate," (Extension of Patent No. 3793), 16th August, 1879.
- No. 10,367. W. Abercrombie, Hamilton, Ont., "Sash, Blind, and Door Chump," (Extension of Patent No. 3767), 18th August, 1879.
- No. 10,368. E. Fisher and J. Watson, Kincardine, Ont., "Metallic Horse Collar," 19th August, 1879.
- No. 10,369. M. Harris, New York, N. Y. (Assignee of O. H. Arno Wilmington, Mass., U. S. A.), "Mechanical Musical Instrument," 19th August, 1879.
- No. 10,370. W. G. Eutreklin, Philadelphia, Penn., U. S. A., "Photograph Burnishing Machine," 19th August, 1879.
- No. 10,371. R. Church, St. Lambert, Que., "Improvements in Long Leg boots," 19th August, 1879.
- No. 10,372. A. H. Bagardus, Elkhart, Ill., U. S. A., "Pyrotechnic Cartridge," 19th August, 1879.
- No. 10,373. J. T. Clarkson & G. W. Morrill, Amesbury, Mass., U. S. A., "Sleigh and Pung," 19th August, 1879.
- No. 10,374. O. D. Spalding & L. C. Barnett, Mitchell, Iowa, U. S. A., "Grain Elevator," 19th August, 1879.
- No. 10,375. H. Harmer, Southampton, O., "Railway Switch Guard" (Extension of Patent No. 3770), 20th August, 1879.
- No. 10,376. J. McCrea, Orchardville; T. Swan, Mount Forest, and J. Irvine, Orchardville, O., "Rotary Horse Power," 21st August, 1879.
- No. 10,377. S. E. Whitemare, Bristol, R. I., U. S. A., "Rubber Boot or Shoe," 21st August, 1879.
- No. 10,378. A. Noteman, Toledo, Ohio, U. S. A., "Rotary Engine," 21st August, 1879.
- No. 10,379. J. Abbott, J. B. & C. Z. De Young, Philadelphia, Penn., U. S. A., "Wool Spinning Machine," 21st August, 1879.
- No. 10,380. G. F. Burch, Jackson, Mich., U. S. A., "Washing Machine," 21st August, 1879.
- No. 10,381. R. Pickel, Plattsburgh, N. Y., U. S. A., "Railway Switch," 21st August, 1879.
- No. 10,382. Jas. Fife, Toronto, O., "Sheet Metal Working Machine," 21st August, 1879.
- No. 10,383. M. J. O'Reilly, Buffalo, N. Y., U. S. A., "Steam Generator," 21st August, 1879.
- No. 10,384. G. Ayliffe, J. Hugill & C. Rinehart, Akron, Ohio, U. S. A., "Oatmeal Machine," 21st August, 1879.
- No. 10,385. E. N. Heney (Assignee of W. Davis), Montreal, Q., "Buggy Top," 21st August, 1879.
- No. 10,386. H. W. Callender, New York, N. Y., U. S. A., "Billiard Table," 21st August, 1879.
- No. 10,387. J. M. Pitblado, G. J. Grant & T. Clark, Traror, N. S. (Assignees of G. Dunning & C. B. George, Waukegan, Ill., U. S. A.), "Horse Shoe," 21st August, 1879.
- No. 10,388. E. R. Whitney, Magog, and C. L. Bossé, Montreal, Q., "Harrow," 21st August, 1879.
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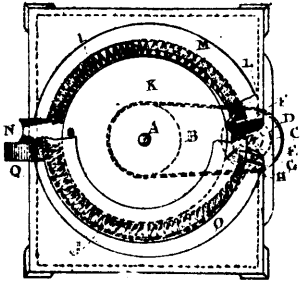
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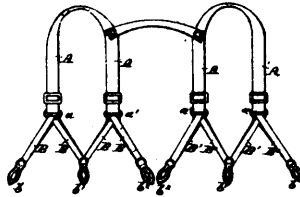
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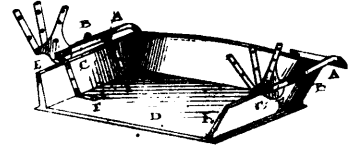
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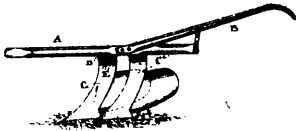
10148 Ellis, Scott & Edmondson's Conveyor and Air Ejector for Millstones.



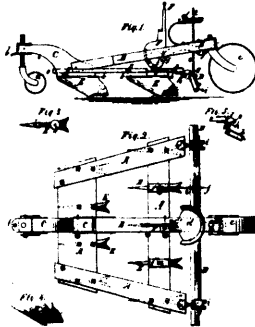
10149 Greely's Improvements on Suspenders.



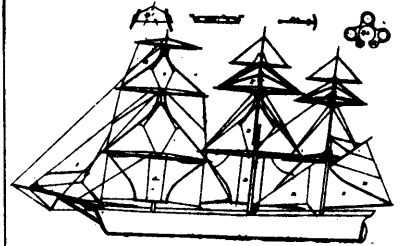
10150 Conboy's Adjustable Seat Rail for Carriage Tops.



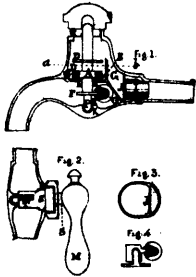
10151 Killam's Combined Gang Plough and Potato-Digger.



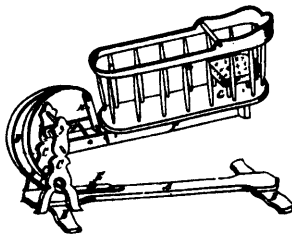
10152 Butler's Improvement on Harrows.



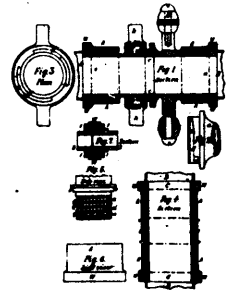
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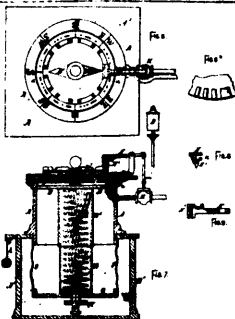
10154 Robertson's Improvements on Water Taps.



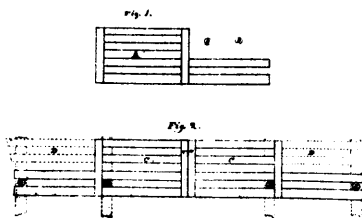
10155 Ziegler's Improvements on Baby Tenders.



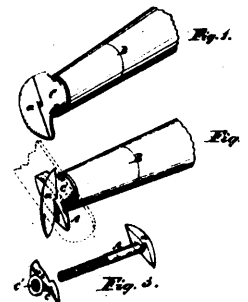
10156 Watkinson's Improvements on Hose Joints.



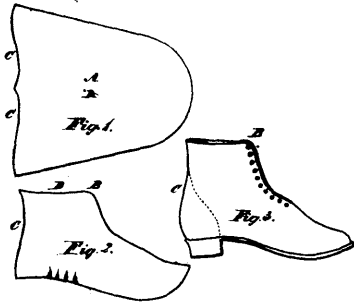
10157 Barker's Improvements on Marine Signals.



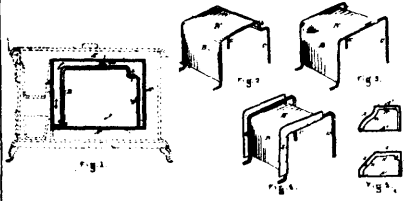
10159 Simons's Improvements on Gates.



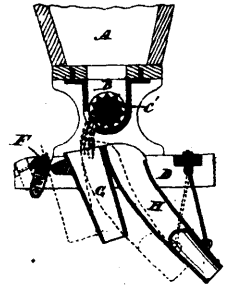
10160 Crandall's Improvements on Trace Fastenings.



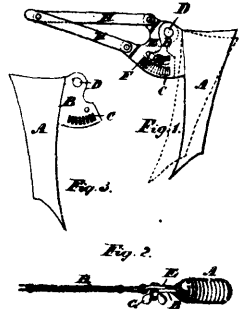
10182 Thurston's Improvements on Boot Uppers.



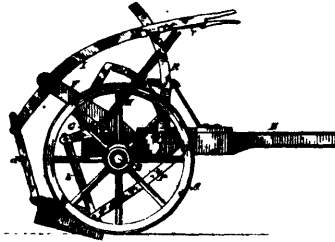
10163 Haywood's Improvements on Ovens.



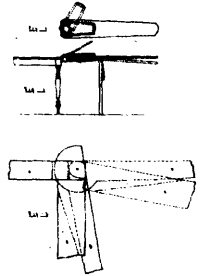
10164 Noxon's Improvements on Seeders.



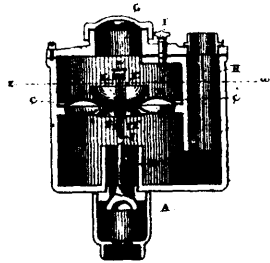
10165 Noxon's Improvements on Grain Drills.



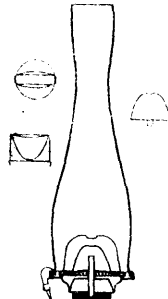
10166 Morrow's Improvements on Earth Scrapers.



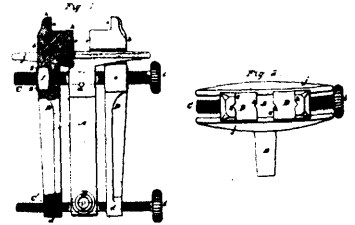
10167 Boyd's Ironing Board.



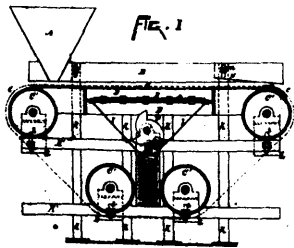
10188 Woodruff's Improvements in Gas Governors.



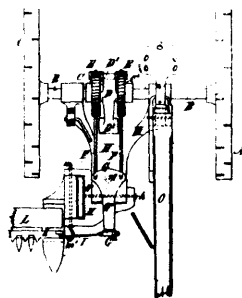
10169 Trent's Improvements in Lamp Burners.



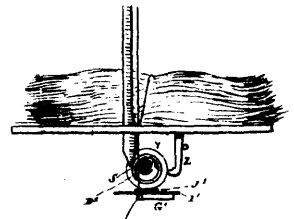
10172 Goodrich's Improvements on Wrenches.



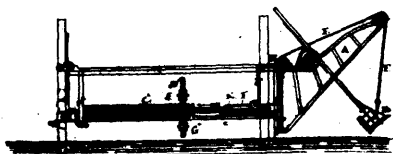
10179 Stephens' Improvements on Ore Concentrators.



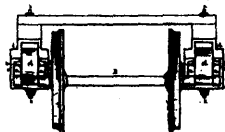
10174 Conway's Improvements on Mowing Machines.



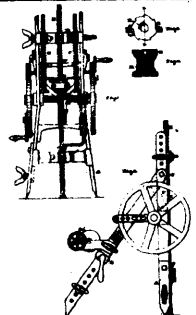
10178 Harrison's Improvements on Reaping Machines.



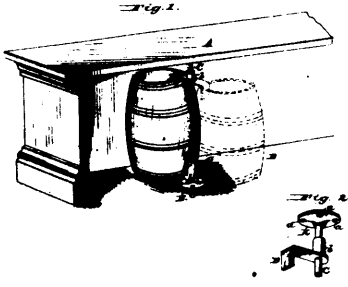
10179 Canaan's Improvements in Dredging Machines.



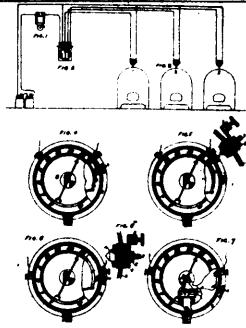
10180 Blakeley's Improvements on Car Axle Boxes.



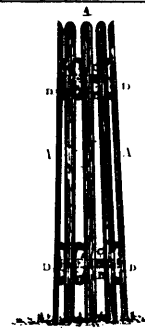
10181 Weaver's Improvements on Rock Drills, &c.



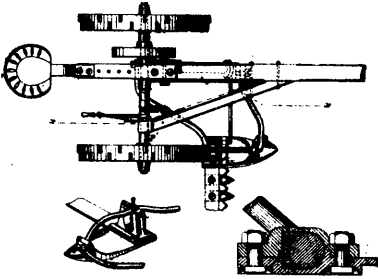
10182 Eckert & Harvey's Improvements on Barrel Swingers.



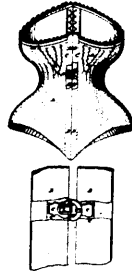
10183 Arnoldi's Improvements on Steam Gauges.



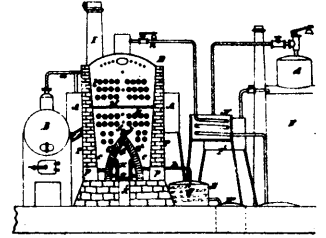
10184 Drake's Improvements in Tree Protectors.



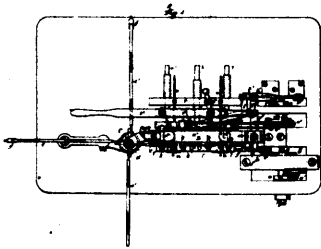
10185 Manny's Improvements on Harvesting Machines.



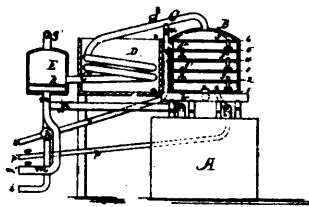
10186 Chipley's Improvements on Corsets.



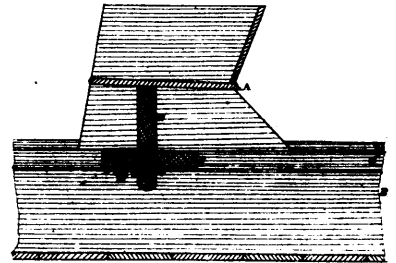
10187 Ryder's Improvements in Oil Stills.



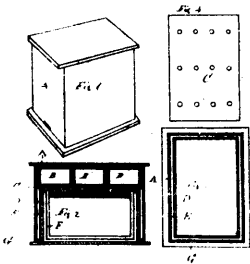
10188 Smyth's Improvements in Book Sewing Machines.



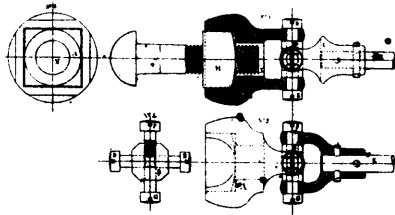
10189 Daul's Improvements on Petroleum Rectifiers.



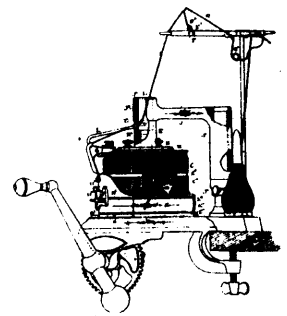
10190 Crabb's Method of Fastening Carriage Seats.



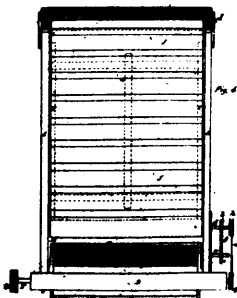
10191 Craford's Improvements on Bee-Hives.



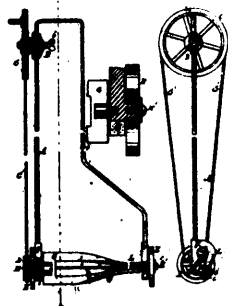
10192 Beauty's Improvements on Wrenches.



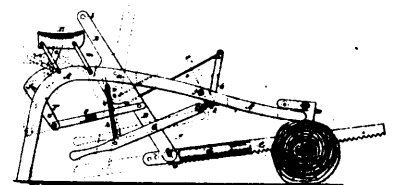
10193 Creelman & Kay's Improvements on Knitting Machines.



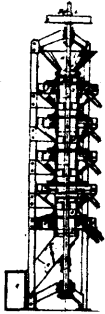
10194 Edgar's Self-Feeder for Threshing Machines



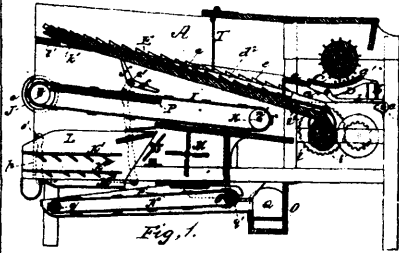
10195 Johnson's Improvements on Lawn Mowers.



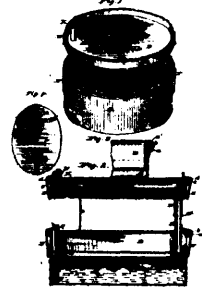
10196 Giles's Improvements on Sawing Machines.



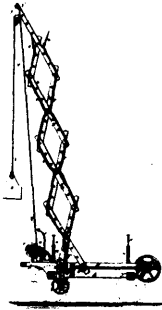
10197 Thompson & Williamson's Improvements on Middlings Purifiers



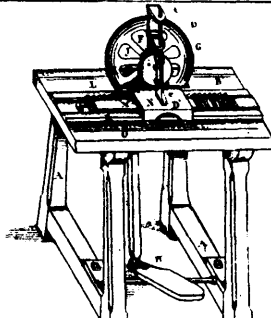
10198 Crotzer's Improvements in Threshing Machines.



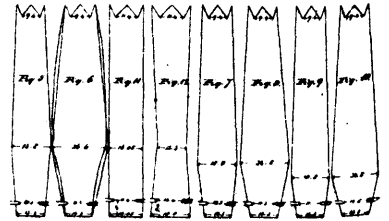
10199 Lyon's Improvements on Fruit Driers.



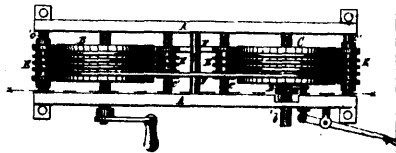
10200 Winterr's Improvements on Fire Escapes.



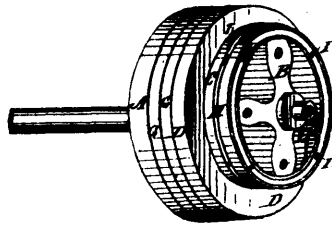
10201 Panton & Holmes's Improvements on Mailing Machines.



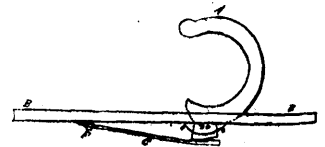
10202 Bennett's Improvements on Blast Furnaces.



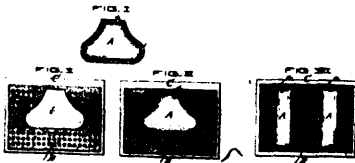
10203 Dennis's Improvements on Devices for Transmitting Motion.



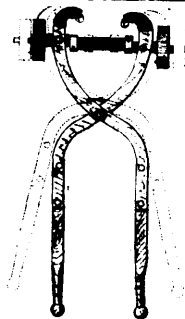
10204 Youse's Improvements in Piston Packing.



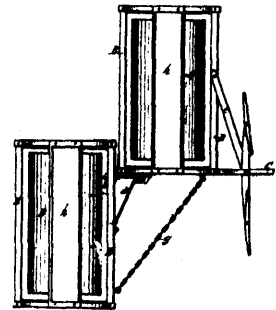
10206 Moore's Improvements on Fishing Poles.



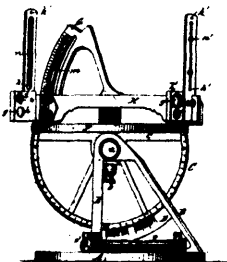
10207 Kennedy's Improvements on Combined Plasters and Pads.



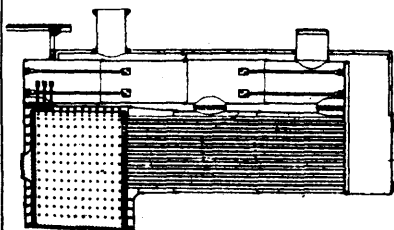
10208 Johnson's Improvements on Hand Trucks.



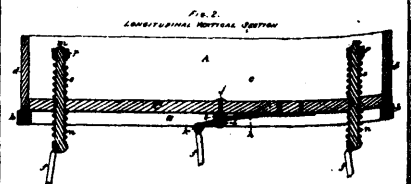
10209 Drynan's Improvements in Land Rollers.



10210 Holmes's Improvements on Sun Dials.



10211 Sullivan's Improvements on Steam Boilers.



10212 Clarkson & Morrill's Improvements on Sleighs.

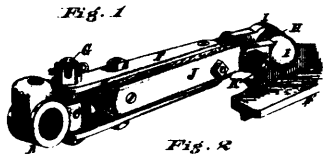


Fig. 1



Fig. 2

10214 Bradley's Improvements on Harvester Pitmans.

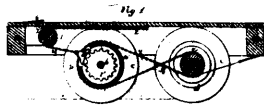


Fig. 1

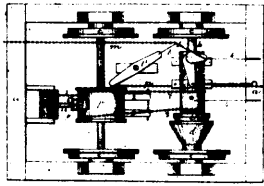
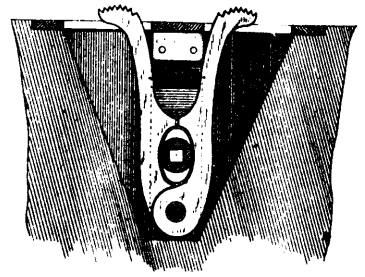
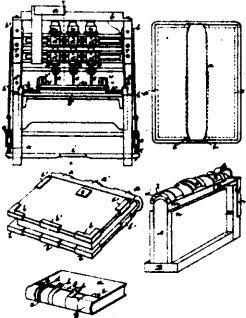


Fig. 2

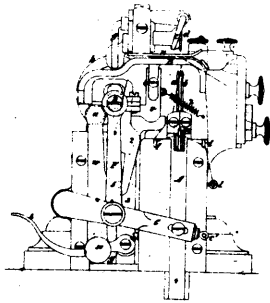
10215 Weyer's Improvements on Car Starters.



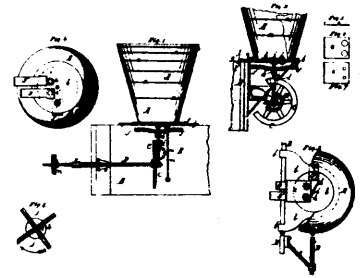
10216 Teagley's Improvements on Sash-Holders.



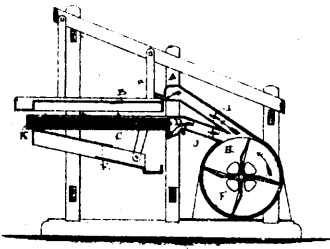
10217 Reynolds's Improvements in Book Making.



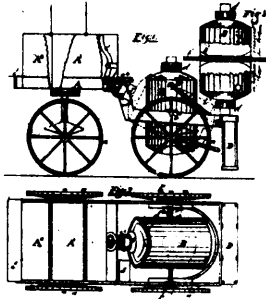
10218 Wiseman's Improvements in Sewing Machines.



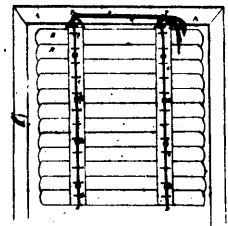
10219 Bartholomew's Improvements on Seed Sowers.



10220 Crone's Improvements on Threshing Machines.



10221 Morrison's Chemical Fire Engine.



10222 Bowslough's Improvements on Window Blinds.

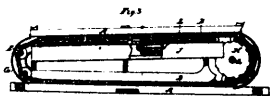


Fig. 3

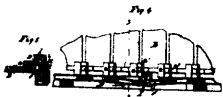


Fig. 4

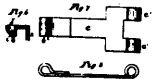
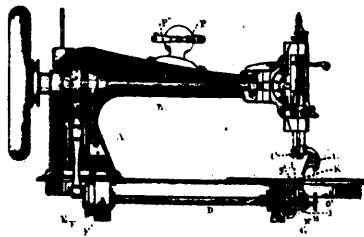
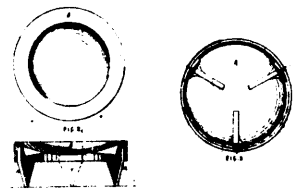


Fig. 5

10223 Benjamin's Improvements on Horse Powers.



10224 Authors's Improvements on Sewing Machines.



10225 Wasley's Means for augmenting the volume of Sound in Musical Instruments.



10226 Swift's Apparatus for Cleaning Silk.

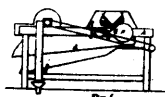


Fig. 1

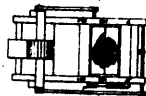
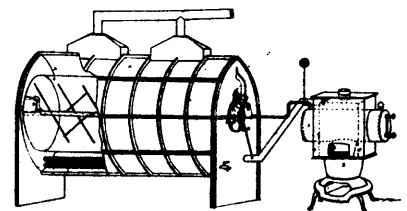
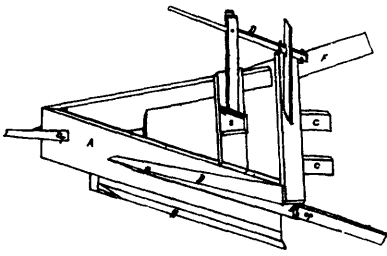


Fig. 2

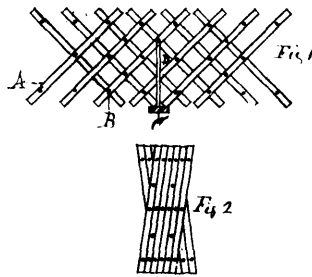
10227 Cranson's Machine for Hulling Buckwheat.



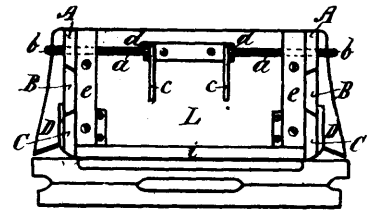
10228 Manny & Cartier's Feather Renovators.



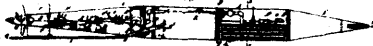
10229 Chapman's Improvements on Snow Ploughs.



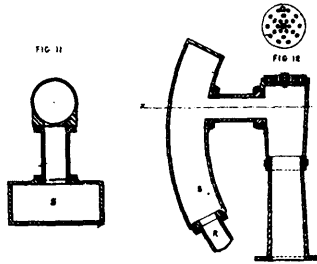
10230 Crist's Improvements in Fences.



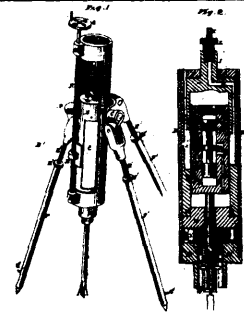
10231 Talcott's Improvements in Waggon Racks.



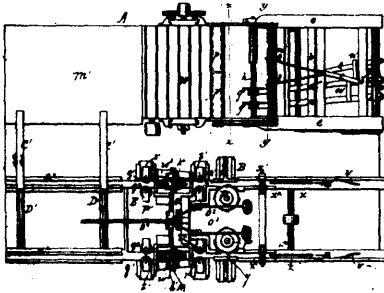
10232 Lay's Improvements in Torpedo Boats.



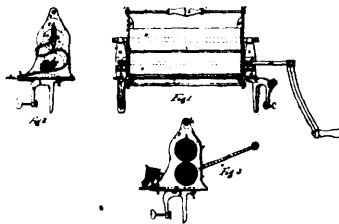
10233 Hamer, Metcalfe & Davies's Improvements on Apparatus for Feeding Steam Boilers.



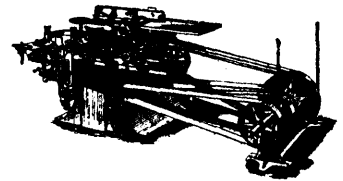
10234 Richman & Arnold's Improvements on Direct Acting Engines and Drilling Apparatus.



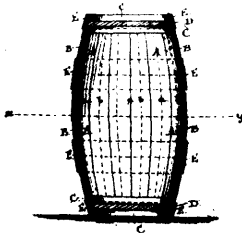
10235 DuBois's Machine for Ripping, Surfacing and Matching Lumber.



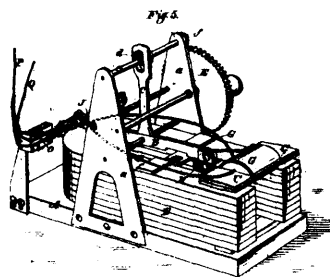
10236 Cable & Rice's Improvements on Clothes Wringers and Mangles.



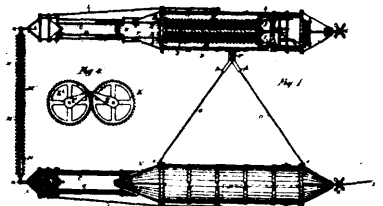
10237 Doane & Bugbee's Wood Working Machines.



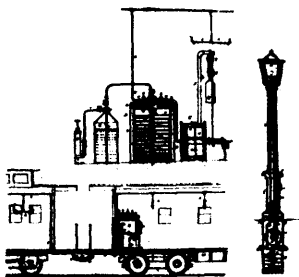
10238 Wright's Improvements on Barrels.



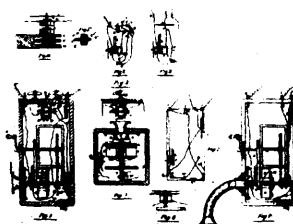
10239 Gary's Magneto Electric Machine.



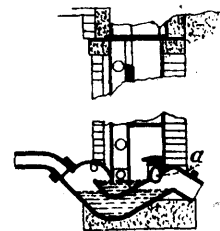
10240 McLean's Improvements on Explosive Projectiles and Torpedoes.



10241 Bocklen's Improvements in Gas Apparatus.



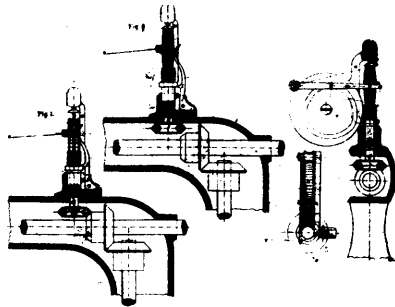
10242 Roseburgh & Skelton's Improvements in Telephones.



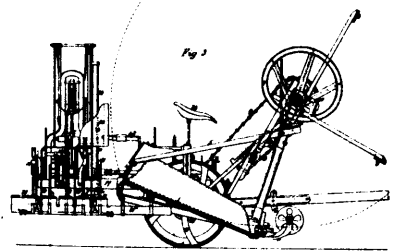
10243 Jewell's System of Drainage and Ventilation.



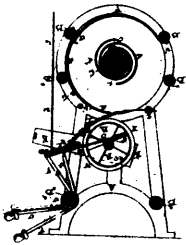
10244 Jacobs's Improvements in Copying Ink.



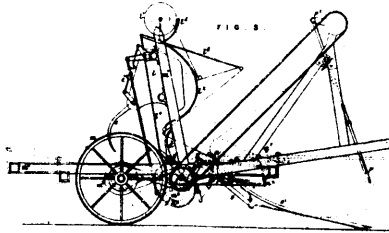
10245 Kayser's Apparatus for Spooling in Combination with Sewing Machines.



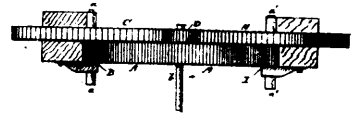
10246 Neale's Improvements on Reaping Machines.



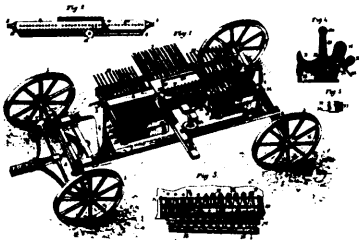
10247 Shiver's Improvements in Spring Motors.



10248 Woolnough & Kingsford's Machine for Gathering and Binding Corn, &c.



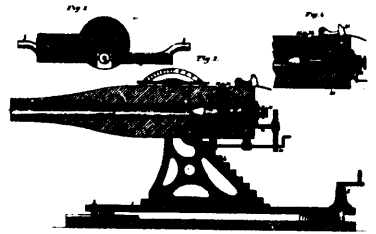
10249 Jackson's Improvements on Horse Power Machines.



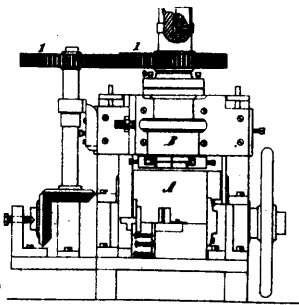
10252 Coloney's Improvements on Machine Guns.



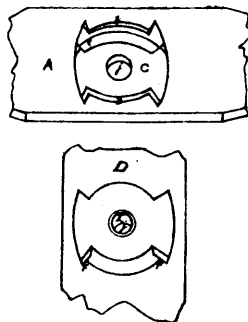
10253 Brush's Improvements on Electric Apparatus.



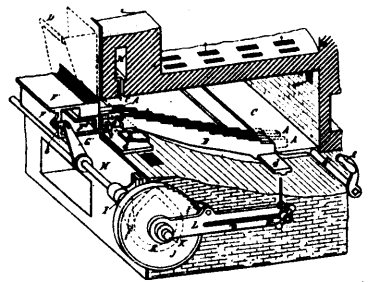
10254 Coloney's Improvement on Breech Loading Fire Arms, &c.



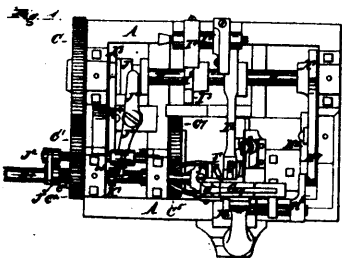
10255 Grant's Nail Machine.



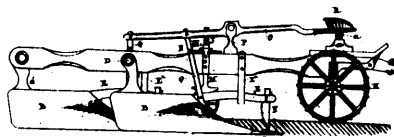
10256 Benoit's Improvements on Carriage Rockers.



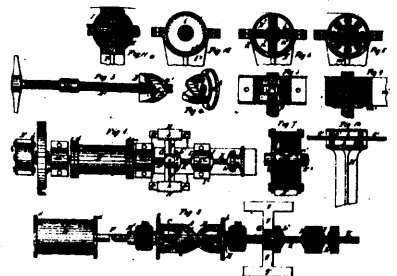
10257 Scully & Dillon's Improvements on Boiler Furnaces.



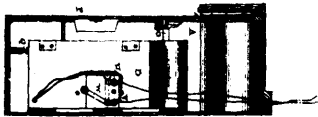
10258 Worsley's Machine for Nutting Bolts.



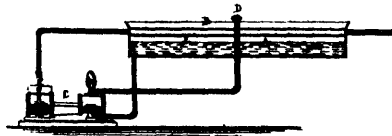
10260 Stanley's Improvements in Ploughs.



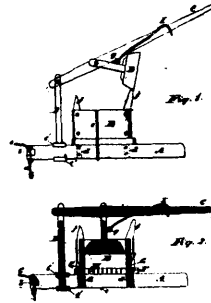
10261 Goodwin & Roberts's Mechanism for Transforming Rectilinear Reciprocating Motion into Rotary Motion.



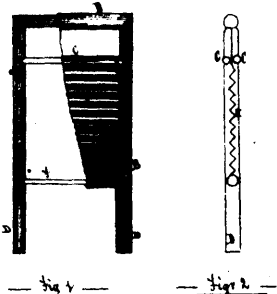
10262 Anderson & Nesbitt's Improvements in Fire Alarm Boxes.



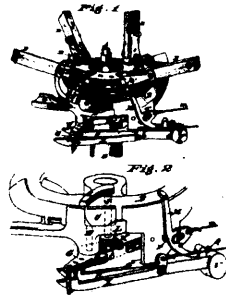
10263 Rourk's Process and Apparatus for Evaporating Liquids.



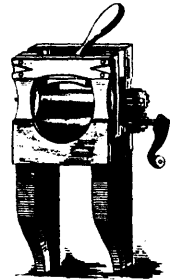
10264 Potter's Improvements on Curd Cutters.



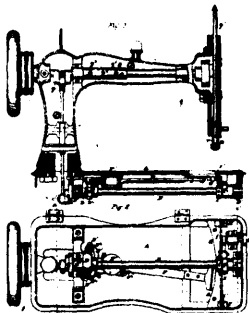
10265 Schoemaker's Improvements on Washboards..



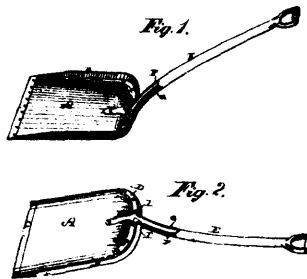
10266 Thompson's Improvements in Harvester Rakes.



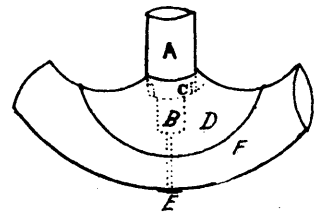
10268 Baldwin & Parkhurst's Improvements in Wringing Machines.



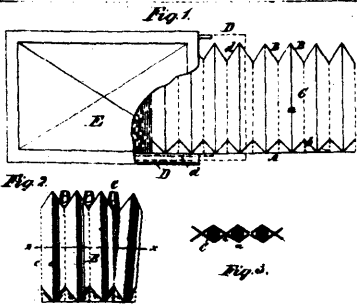
10269 Fairbank's Improvements on Sewing Machines.



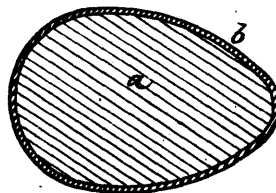
10270 Brown & Buck's Improvements on Scoop Shovels.



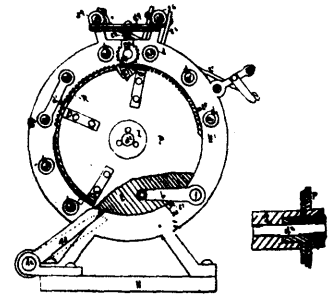
10271 Paré's Improvements on Carriage Wheels:



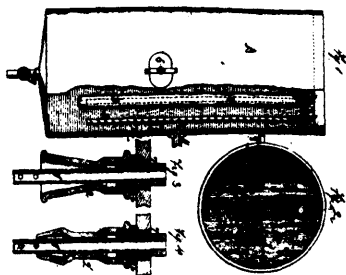
10272 Parmenter's Improvements on Paper Pockets for Cigars.



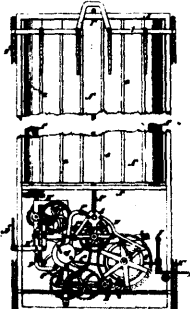
10273 Woodward's Improvements on Nest Eggs.



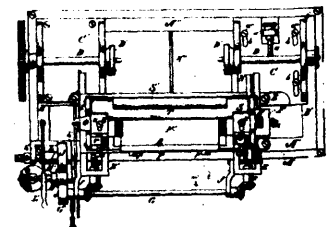
10274 Stockwell's Machine for Making Metal Screws.



10276 Belcher's Process and Apparatus for Filtering Sugar Solutions.



10276 Whitney's Improvements in Grain Binders.



10277 McEachern & Burrell's Machine for Cutting Veneers.