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# The Canadian Patent Office

## RECORD




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### INVENTIONS PATENTED.

#### No. 10,278. Improvements on Milk Vats.

(Perfectionnements aux boites a lait.)

James McKelvey, St. Catharines, Ont., 21st July, 1879, for 5 years.

Claim—1st The combination of a filter in connection with a cream still or portable cream gatherer; 2nd, The filling down or opening of the ice chamber, 3rd, The two subdivisions of the ice chamber.

#### No. 10,279. Cockle and Oat Separator. (Séparateur de nielle et d'avoine.)

Herman Kurth, Hamilton, Ont., 21st July, 1879, for 5 years.

Claim—1st A grain separator, in combination with an open revolving cylinder or cylinders having indentations or cavities on the inner surface and provided with brush, catchboard trough, spout, or conveyor, 2nd A revolving cylinder or cylinders for extracting cockle from the full and broken kernels of grain; 3rd A revolving cylinder or cylinders, provided with pockets or cavities, in combination with a shaker having a lateral shaking movement, including one or more sieves with different sizes of holes one or more of said sieves, to be placed on the top of said cylinder or cylinders, in combination with a blind bottom return spout in the cylinder or cylinders; 4th A revolving cylinder C, or cylinders, in combination with a trough or spout or conveyor; 5th A revolving cylinder, or cylinders, in combination with a brush q; 6th A revolving cylinder, or cylinders, in combination with a catchboard z; or catchboards; 7th A revolving cylinder C, or cylinders, in combination with a suction fan a3, feed roller a, air trunk b, air trunk b1, suction leg c1, partition i suction regulator g, screenings discharge box w, air hole e1 with regulator or partition r, first movable door z z, second movable door z z, suction boxes a a a b1 b1; 8th A cylinder, or cylinders, with indentations or cavities, in combination with a suction fan a3, to be placed on the top of said cylinder or cylinders; 9th A cylinder, or cylinders, in combination with a suction fan and air chambers, for the purpose of taking dust and light impurities from the grain and carrying it around over the said fan so as to discharge said impurities opposite when the grain is discharged; 10th A cylinder, or cylinders having indentations or cavities made from one single thickness of zinc, or other metal, or perforated cylinder or cylinders with a consolidated or non-removable jacket, in combination with a suction fan, so as the grain passes through an air chamber by entering into the machine, and when leaving said machine each air trunk is to be so regulated as to remove the light impurities and discharge them independent from each other; 11th A cylinder C, or cylinders, in combination with a shaker placed on the top and inside of said cylinder, or cylinders, in combination with a series of sieves, one or more to be placed on the top of said separation sieve, or sieves, so to bring a lateral shake motion on said set of sieves (which have different sizes of holes) so as the shaker operating first on the grain by a lateral shake motion and afterwards by an end-shaking motion; 12th A revolving cylinder C, or cylinders, with indentations or cavities in combination with an arrangement of zig zag sieves placed over and across the cylinder, in combination with a movable slide or oil cloth, in the shape of a window blind, which is to be placed on the head of each sieve; 13th A cylinder, or cylinders, having indentations or cavities, pockets or cells on the inner surface, the same being divided into two compartments D E by means of an annular disc or ring y and the large perforations m near the middle of the cylinder, for the discharge of the small wheat immediately in front of the annular disc or ring y; 14th A revolving cylinder, or cylinders, with indentations or cavities, pockets or cells, which discharge the clean grain nearer to the middle than the ends of the cylinder through perforations, or an elevator instead of the perforations as an equivalent for carrying away the grain; 15th A grain separator, in combination with one or more suction separators and oat separator attached with grain separator sieves or sieves, in combination with revolving cylinder, or cylinders, having indentations or pockets on the inner surface; 16th An open revolving cylinder with

indentations or pockets on its inner surface, with one flange g on its front end, and the annular disk or ring y, near the central inner portion of the cylinder; 17th A revolving cylinder, or cylinders, with indentations or pockets on its inner surface in which the cockle, etc., is first separated from the large wheat, then from the small wheat and lastly from the broken grain, by means of the automatic action of the machines itself and without the assistance of an operator; 18th The combination of the revolving separator C, constructed with open ends R, a sieve K, or sieves, spout or trough p p1, brush q, connected together and placed in zig zag form with bank and forward end motion, the large grain discharge box P, scootered box H, spring Q Q, etc., the zig or top sieve K, being placed on the top of the revolving separator C, while the spout or trough p p1, brush q are placed inside, a catchboard z passing through the inside of the cylinder and attached to the frame at each end; 19th An open revolving cylinder C (one or more may be used) having indentations or pockets on its inner surface, of proper size, to receive singly the grains of cockle or other small seed, the rings z z, the friction rollers t t, shafts u u, on a side the cylinder, the same being placed inside the cylinder, and operating it therefrom to support the same and enable it to rotate with unobstructed ends.

#### No. 10,280. Improvements in Spark Arresters. (Perfectionnements aux arrête-flammèches.)

John Abell, Woodbridge, Ont., 22nd July, 1879, for 5 years.

Claim—1st The smoke deflecting plate E, extending over the smoke passage and arranged for the purpose of deflecting the smoke, sparks, etc., into a water reservoir; 2nd The deflecting plate E in combination with the dome D and water reservoir C.

#### No. 10,281. Improvements on Water Wheels. (Perfectionnements aux roues hydrauliques.)

William Young, Townsend, Ont., 22nd July, 1879, for 5 years.

Claim—The combination of the curved plates D, attached to the central cylinder B working the shaft A, said curved plates being encased in a circular rim C extending around the wheel.

#### No. 10,282. Improvements on Mechanical Movements. (Perfectionnements aux mouvements mécaniques.)

Irving M Avery, New York, N. Y. U. S., 22nd July, 1879, for 5 years.

Claim—The combination, with an oblique disc B mounted on a revolving or rocking shaft of a lever D which connects with a slide E, so that when the shaft is turned, a reciprocating motion is imparted to the slide, and the slide is prevented from being crowded on its guide, or in its bearings.

#### No. 10,283. Improvements in Pipe Cutters. (Perfectionnements aux coupeurs de tuyaux.)

William L Truland and Edward Tracy, Lansingburgh, N. Y., U. S., 22nd July, 1879, for 5 years.

Claim—The cutting blade D, constructed with an arm D1 and heel D2, the arm being provided with a screw F on one side of lever A, and the heel having the pressure spring C, on its opposite side.

#### No. 10,284. Improvements on Steam Engines. (Perfectionnements aux machines a vapeur.)

Frederick A Gardner, Buffalo, N. Y., U. S., 22nd July, 1879, for 5 years.

Claim—1st The cylinder frames A A1, provided with the steam passages B B1 in combination with the cylinders D, having trunnions and ports and a base provided with longitudinal steam passages J J1 and reversing valve E2; 2nd The crank shaft composed of the parts E1 E2, in combination with the sleeve F1 perforated piston ends F and frames A A1; 3rd The sleeves B1 in combination with the trunnion C1, packing B1 B1, tightening glands D1 and frames A A1; 4th The combination of two oscillating cylinders, having trunnions C1, removable port sleeves B1, a supporting frame on each side having steam passages leading to the trunnion ports, a base provided with passages for a lifting beam to the passages in the frames A A1 and for receiving the exhaust therefrom, and a reversing valve.

**No. 10,285. Improvements on Bark Cutting Machines.** (*Perfectionnements aux machines à couper l'écorce.*)

William Chicken, Boston, Mass., U. S., 22nd July, 1879, for 5 years.

*Claim.*—1st. A cutting cylinder F, composed of cutting discs *f* having their teeth alternately inclined to the right and left and located side by side on an arbour, forming alternate V-teeth and clearing spaces; 2nd. The screen consisting of the parts *u u* having perforations *v v* and intermediate inwardly projecting ribs *w w*.

**No. 10,286. Improvements in Car-Couplings.** (*Perfectionnements aux attelages des wagons.*)

James B. Safford, Buffalo, N. Y., U. S., 22nd July, 1879, for 5 years.

*Claim.*—1st. In a draw-bar, the pallet F, having a practically straight bearing face and having its pivotal end projecting rearward; 2nd. A coupling pin provided, near its lower end, with a stop or projection A arranged on the rear side of the pin; 3rd. A coupling pin provided with two intersecting horizontal bores or cavities *o* and having a rivet *k* secured therein.

**No. 10,287. Improvements on Bricks or Stove Linings.** (*Perfectionnements aux briques ou doublures des poêles.*)

Elijah Stilwell, Montreal, Que., 22nd July, 1879, for 5 years.

*Claim.*—The plate A with projections B, either cast on the plate, A, or on the stove plates, in combination with the fire clay C.

**No. 10,288. Improvements on Grain Binders.** (*Perfectionnements aux lieuses à grain.*)

Alexander G. McIntosh, Atalissa, Iowa, U. S., 22nd July, 1879, for 5 years.

*Claim.*—1st. The combination, in a harvester, of the knife X and the elevator U O; 2nd. The combination, with the fixed tooth bars O<sub>1</sub> O<sub>2</sub>, of the median movable bar W<sub>1</sub> V<sub>1</sub> operated by the cams T<sub>1</sub> T<sub>2</sub> and spring W<sub>2</sub>; 3rd. The combination of the two straps O, wound in opposite directions, with the hinged bar of the rake L M, for raising and lowering the rake teeth and for pressing down the gavel, while being bound; 4th. The combination, in a harvester, with the elevator and knife, of a knotting or binding mechanism that ties two knots between each sheaf.

**No. 10,289. Improvements on Furniture Castors.** (*Perfectionnements aux roulettes de meubles.*)

John H. Schlott, Freeport, Ill., U. S., 22nd July, 1879, for 15 years.

*Claim.*—1st. The two half-balls D and the central plate B, pivoted in the castor frame and having the axles *a* cast upon its opposite sides; 2nd. The centre plate B, having hollow axles *a*, in combination with the half-balls D and axle *i*; 3rd. The hollow half-balls D; 4th. The centre plate B mounted, in the castor frame, on pivots which are placed slightly out of the true centre of the plate.

**No. 10,290. Improvements in Torpedo Boats.** (*Perfectionnements aux bateaux à torpilles.*)

John L. Lay, Paris, France, 22nd July, 1879, for 5 years.

*Claim.*—1st. In a torpedo boat, the provision for using quicklime in, or with, the gas generator or reservoir B, and for conducting water by the tube B<sub>1</sub>, or their equivalents, to the line in the spaces C; 2nd. The utilization of a portion of the hull or body A of the same, to serve as a gas chamber by securing therein the tube plates A<sub>2</sub> and fitting the same with tubes B<sub>3</sub>; 3rd. The improved method of heating the carbonic acid gas, in the gas generators or reservoirs, by the combination of alcohol, or its equivalent, and supplying the same with air for maintaining its combustion; 4th. The apparatus consisting of the flasks B<sup>\*</sup>, receptacle E, the tubes F F<sup>\*</sup> D<sup>\*</sup> H, reservoir I, piston and cylinder J J<sup>\*</sup> and valve H<sub>1</sub>, or the equivalent of these parts, in which apparatus alcohol is burned, while air is admitted to the same to maintain its combustion, and is ignited and extinguished; 5th. The arrangement of the gas flask or reservoir B, in the hull or body A of the same, so that there is an annular space A<sup>\*</sup> between the said flask and hull, for the combustion of the alcohol for heating the said gas; 6th. The guide rods L<sup>\*</sup> provided with a light or lamp L and arranged in combination with the apparatus or mechanism for adjusting the said rods, or equivalent mechanism; 7th. In combination with the conductor or cable, whereby an electric current is sent from a shore or other station to a torpedo boat not otherwise connected with the said station, the employment of mechanism or apparatus whereby to employ a cable consisting of a single wire, (or of two wires) for effecting the transmission of the current between the shore or other station and the torpedo boat, for causing the operation or adjustment of all the various devices on the said boat, for controlling, steering, firing or otherwise manipulating or manoeuvring the same; 8th. The apparatus or mechanism consisting of the commutator *d* on the index spindle *a*, in combination with the springs *d*<sub>3</sub> and block *d*<sub>4</sub>, arranged in connection with the said cable or conductor and co-operating with the index finger or pointer *a*; 9th. In the said apparatus or mechanism, the combination of devices comprising the circuit closing lever *e*, lever *f* and spring plate *f*<sub>3</sub>, posts *h g*, or their equivalents, for closing and breaking the circuit and thereby adjusting the said apparatus to send either a powerful or weak current, from the shore or other station, to the torpedo boat; 10th. In an apparatus for controlling or working a torpedo boat and in combination with the peculiar kind of cable or conductor above described, the commutator *d*, in the apparatus at the shore or other station, connected with the dial and index or pointer *a* and the commutator *l*, in the boat, arranged in connection with the various parts of the apparatus, whereby the various operations of the boat are effected in obedience to the movements of the said index or pointer; 11th. In the said apparatus and in combination with the cable or conductor consisting of one wire (or of two wires), the device consisting of the pivoted three-armed lever *s*, the notched disk *a*<sub>3</sub> and ratchet wheel *a*<sub>2</sub> on the index shaft *a*, or the equivalents of these parts, and the lever *e*, or other parts, operating in connection therewith for preventing premature firing of the torpedo boat; 12th. The arrangement of the exhaust pipe or pipes in combination with the

tube through which the cable passes from the boat, in such a manner that the exhaust gas, or other fluid from the engines, passes out through the said tube.

**No. 10,291. Improvements on Grain Binders.** (*Perfectionnements aux lieuses à grain.*)

Charles L. Travis, Minneapolis, Minn., U. S., 23rd July, 1879, for 5 years.

*Claim.*—1st. The combination of the binder arm shaft having the arm I, the vibrating lever H and the crank or wheel G; 2nd. The combination of the knoter operating shaft provided with crank G, the binder arm shaft provided with arm I and the connecting lever H; 3rd. In a rotary tying head, the combination of a recessed rotary block or head, a finger or nipper *c*, arranged to close therein, and a second finger or nipper *f*, arranged to close within the outer side of finger *c*; 4th. In combination with the rotary finger *c*, the rotary head or block recessed to admit the finger and provided with the groove K, to retain the cord in place at the centre of the head; 5th. In combination with the rotary finger *c*, the finger *f* seated and pivoted at its middle in a recess in the outer side of finger *c*; 6th. The combination of the rotary head or socket, the rotating and sliding shaft *a*, having the recessed finger *c*, the finger *f* pivoted within the finger *c*, and the sliding bar *h*, mounted in the shaft and connected to finger *f*; 7th. The combination of the hollow rotary head or socket, the two laterally movable fingers *c f*, arranged to rotate with the head and mechanism arranged to first draw the fingers into the head, then rotate the head and open the finger *f* outward, and then close the finger *f* and move both fingers outward from the head while the rotation continues and finally open finger *f* a second time; 8th. As an improvement in the construction of knotting or tying heads, the combination of a round shaft *a*, having one end flattened and fashioned into a finger *c*, a flattened and recessed block *i* seated in the side of the shaft, an encircling ring *l* secured to the block; 9th. A rotary knotting or tying head, a straight round shaft *a*, having one end out away so as to form a flat face and an upright finger thereon; 10th. In combination with a rotary head or socket, two knotting fingers rotating therewith and arranged to close within the head during the first revolution, and then move outward and stand in front of the head during the second revolution; 11th. The combination of the knotting head, the binder arm and the retaining spring P, to hold the severed ends of the applied band; 12th. The combination of a knotting head and a device P below the same, adapted to retain the severed ends of the applied band with a frictional or yielding hold thereon during the formation of the knot, in order that the slack formed by the knot shall be taken up towards the bundle; 13th. In combination with the tying head and the retaining device P, a knife or cutter arranged to sever the ends of the applied band in rear or outside of the retaining device prior to the formation of the knot; 14th. The combination of the knotting head revolving in a vertical plane and provided with the fingers or nippers at one end, and the vertically moving binder arm provided with the projection *a*, having two notched edges arranged to carry the cord to the centre of the tying or knotting head; 15th. In combination with the knotting head rotating in a vertical plane, the guard *t*, located directly above the same; 16th. In combination with the binding or cord carrying arm, the rotary cutting and clamping knife arranged to discharge the waste ends of the cord; 17th. The rotary tying shaft mounted on the sliding plate *m*, in combination with the cam O; 18th. The combination of the tying shaft *a* mounted on the sliding plate, the rotary head or socket *i* secured against end movement, and finger *f* connected with sleeve *u* having cam *w* arranged to act in a bearing on plate *m*; 19th. The combination of the rotary knife spring N, spring arm *d*, lever *e* and cam *f*.

**No. 10,292. Improvements in Paper Bags and Bag Machines.** (*Perfectionnements aux sacs de papier et aux machines pour cet objet.*)

Otis E. Davidson and Washington B. Mitchell, Clarksville, Tenn., U. S., 23rd July, 1879, for 15 years.

*Claim.*—1st. The rotating feed-roll, the segments for applying paste to the paper strip, a vertically acting knife for severing the pasted piece, the toothed segment and the cam for depressing and spring for raising the knife; 2nd. The cylindrical feed-roll, the segments C C, for pasting the edges of the paper strip, the segment *m*, for intermittently engaging the pinion *a* and the rotating shaft *n*; 3rd. The vertically reciprocating former F, consisting of a flat metal plate, the hinged vibrating folders I I, so constructed as to receive or embrace the former, and the hinged table H, adapted to maintain a horizontal position when the former descends and the said folders act on the blank; 4th. The hinged side folders I I, the flaps V V, the hinged table H, and toothed arms *k* for acting on the pinion fixed on the rock shaft *f f* of the flaps; 5th. The vertically acting former having a slotted shaft F, and the hinged table having an arm *n*; 6th. The spring arms *j*, pivoted to the base of the folders I, and the fingers or studs *k* projecting from the folders I; 7th. The combination of the vertically acting former having the slotted shaft F, the hinged table having arm *n*, racks *h* and the corner folders V; 8th. The combination of the hinged spring arms W and table H, having arms *h h*, with the former F and the slotted shaft F; 9th. The seamless bottom bag, having oppositely disposed lapped side seams and bottom corners which are folded and secured exteriorly upon said seamless bottom.

**No. 10,293. Improvements on Nut Locks.** (*Perfectionnements aux arrête-noix.*)

Conrad G. Bacon (Assignee of Edward C. Smith), Middletown, Conn., U. S., 23rd July, 1879, for 5 years.

*Claim.*—The combination, with a screw bolt and its ordinary nut H, of the flexible locking nut J, having a reversed thread fitted upon a reduced screw-threaded continuation of the shank of the bolt.

**No. 10,294. Electric Railway Signal.** (*Signal électrique de railroute.*)

Stephen C. Hendrickson, Brooklyn, N. Y., U. S., 23rd July, 1879, (Extension of Patent No. 3,734), for 5 years.

**No. 10,295. Improvements in Bridges.***(Perfectionnements aux ponts.)*

Philip Jarvis and Josiah Cochran, Mount Avt. Iowa, U. S., 23rd July, 1879, for 15 years.

*Claim.*—A bridge having the truss formed by passing tri-rod from each end of each cross beam to the points on the arch where the vertical suspension rods are attached.

**No. 10,296. Improvements on Horse Detach-ers.***(Perfectionnements aux palonniers des voitures.)*

John Carr, Boston, Mass., U. S., Francis O'Donohue and John L. Douglas, Toronto, Ont., 23rd July, 1879, for 5 years.

*Claim.*—The combination of the body A, bolts C C, springs H H and cords or straps E, connected to a ring or plate G<sup>1</sup> and guide pin or bar G<sup>2</sup>, on which the said plate slides.

**No. 10,297. Steel Tempering Furnace.***(Fourneaux à recuire l'acier.)*

John B. Armstrong, Guelph, Ont., 23rd July, 1879, (Extension of Patent No. 4,034), for 5 years.

**No. 10,298. Method of Utilizing the heat of Boiler Furnaces.***(Mode d'utiliser la chaleur des fourneaux des chaudières.)*

Obadiah Marland and John J. Cilley, Boston, Mass., U. S., 26th July, 1879 for 5 years.

*Claim.*—1st. The combination of a furnace and abstracter with a mechanical exhauster; 2nd. The combination of an air forcing device, furnace abstracter and a mechanical exhauster; 3rd. An abstracter composed of plates or sheets of conducting material formed into chambers a b, alternately arranged for passage of air and volatile products of combustion, and removable filling pieces, the abstracter being combined with the discharging end of a furnace and with the furnace space over the grate bars; 4th. An exhauster and an abstracter with passages a b, in combination with the discharging end of a furnace and, by means of a suitable passage, with the space under the grate-bars; 5th. An exhauster and an abstracter with passages a b, in combination with the discharging end of a furnace, and by means of a suitable passage, with the combustion chamber at or beyond the first bridge wall; 6th. An abstracter composed of metal plates or sheets, placed with relation each to the other to form chambers a b, and of removable filling pieces to permit the abstracter to be cleaned; 7th. A heating chamber, or chambers, located within the combustion chamber and above the grate bars of a furnace, and arranged to receive air, to heat the same and to deliver it, highly heated, in fine streams, to mingle with and perfect the combustion of the gases escaping from the fuel; 8th. The combination, with a furnace provided with chambers c<sub>1</sub> c<sub>2</sub> c<sub>3</sub>, or both, located within the combustion chamber of an abstracter and exhauster to operate as described.

**No. 10,299. Process of Refining and Deodorizing Petroleum.***(Procédé pour épurer et désinfecter le pétrole.)*

Edward Hodgens, London, Ont., 26th July, 1879, for 5 years.

*Claim.*—The mode of refining and deodorizing benzine and other products of petroleum, before issuing from the still, by the introduction of caustic soda in solution charged with litharge or other oxides of lead, the impurities being separated by distillation.

**No. 10,300. Improvements in Ventilating Apparatus for Stoves.***(Perfectionnements aux appareils de ventilation pour les poêles.)*

Donald McPhie, Hamilton, Ont., 26th July, 1879, for 5 years.

*Claim.*—1st. In combination with a stove, the air chamber B and tubes D; 2nd. The combination of the air chamber B, pipes D and air duct F; 3rd. The combination of the air chamber B, tubes or pipes D, air duct F and ventilators J.

**No. 10,301. Improvements on Pipe Tonges.***(Perfectionnements aux tenailles à tuyaux.)*

Henry Baister, Erie, Pa., U. S., 26th July, 1879, for 5 years.

*Claim.*—1st. The pipe or blacksmith's tongs having, in connection with the vertically slotted body B, the jar C forming a box bearing e, the transversely slotted body a of the main jaw A, and the centrally squared pivot pin D, having the cylinder end journals g h, and fitting by its squared portion n neatly in the slot of the main jaw through which it passes; 2nd. The jaw C, having a holding head E opening toward the main jaw, and perforated in its top and base, and the reversible and rotary adjustable prismatic gripping block G, confined in the head by the axis pin extending in the direction of the length of the jaw, and enabling the gripping edges of the block to be presented to the work by rotation thereon.

**No. 10,302. Improvements in Harvesters.***(Perfectionnements aux moissonneuses.)*

Christopher C. Bradley, Syracuse, N. Y., U. S., 26th July, 1879 (Re-issue of Patent No. 5,990).

*Claim.*—1st. In a harvester, a spherical cutter-bar head, cast or formed hollow; 2nd. In a harvester, a hollow spherical cutter-bar head to contain lubricating material; 3rd. In a harvester pitman, the combination of a detached socket clasp F, a fixed socket clasp E, a bolt and nut lock G and an elastic cushion K, the whole forming an elastic socket joint.

**No. 10,303. Improvements on Glazed Structures.***(Perfectionnements aux constructions vitrées.)*

William E. Rendle, London, Eng., 26th July, 1879, for 5 years.

*Claim.*—1st. The construction of bars X with groove or channel A, slots D and holes E, also the construction of bars Y with groove or channel B and holes I; 2nd. The construction of bars Z with groove or channel A, groove or channel B, slots D and holes E I; 3rd. The construction of the bars Z X with a gutter G; 4th. The construction of bent sheet metal bars K, for holding the side edges of the panes of glass of glazed structures; 5th. The employment of bars X, in combination with bars Y, for receiving and holding the top and bottom edges of the panes of glass of a glazed structure; 6th. The employment of the bars X, in combination with the bars Y Z, for receiving and holding the top and bottom edges of the panes of glass of glazed structures; 7th. The employment of bars K, for holding the side edges of the panes of glass, in combination with bars X Y, or bars X Y Z, for holding the top and bottom edges of the panes of glass.

**No. 10,304. Improvements on Mitring Machines.***(Perfectionnements aux machines à onglets.)*

William E. Eastman, Boston, Mass., U. S., 26th July, 1879, for 5 years.

*Claim.*—1st. A reciprocating knife, having a guiding projection, in combination with a guide provided with a curved slot; 2nd. The triangular carrier and knives pivoted thereto, in combination with the guides having the curved slot, whereby a partial rotation, as well as a drawing cut, is given to the knives; 3rd. The combination of the triangular carrier, the pivoted knives, the slotted guides and the front guide; 4th. The boring tool y, in combination with reciprocating cutting knives, when all are operated simultaneously by the same mechanism.

**No. 10,305. Apparatus for Preventing the Entrance of Water into, and for Ventilating Boats.***(Appareil pour empêcher l'eau de s'introduire dans les bateaux, et pour les ventiler.)*

Sir James L. Foulis, Clinton, Scotland, 26th July, 1879, for 5 years.

*Claim.*—The valves or flaps b, arranged in combination with opening a.

**No. 10,306. Improvements on Clothes Wringers.***(Perfectionnements aux essoreuses à linges.)*

Charles B. Camp, White Pigeon, Mich., U. S., 26th July, 1879, for 5 years.

*Claim.*—1st. The equalizing cross-bar H, having descending journal seat arms h for the upper wringer roller playing in ways z of the standards, and centrally pivoted to the fixed cross-bars B<sub>2</sub>; 2nd. The cross bar H, having ascending journal seat arms h for the lower roller playing in ways z of the standards, and a pressure connection I extending downward to the suspended lever J; 3rd. The combination, with a lower wringer roller supported by a cross-bar H and a lever connection to produce an upward pressure thereon, of an upper wringer roller bearing against a centrally pivoted equalizing cross-bar; 4th. The combination, with the supporting cross-bar H, the lever J and pressure connection I, of the lever L, below lever J and the connection k; 5th. The combination, with a pair of swinging rollers, of the lever J hung upon the bail K attached to frame A with strap k, connected to the lever L having projections m and the leg c with ratchet n; 6th. The cross-bar H, supporting, by its arms h, the lower roller and carrying the drip pan P; 7th. The drip pan or spout P, having the small roller P raised above its bottom, and adapted to hold the goods passing to said rollers clear of the bottom of the pan; 8th. The combination of the wringer frame A B C and the front basket rack or shelf N, having a leg y and hinged to the front of said frame to fold underneath the same.

**No. 10,307. Improvements on Systems of Lighting.***(Perfectionnements aux systèmes d'éclairage.)*

Eusebius J. Molera and John C. Cebrían, San Francisco, Cal., U. S., 29th July, 1879, for 5 years.

*Claim.*—1st. The combination, with a generator of electricity and electric connections, of devices adapted to subdivide the main body of light into different beams, respectively composed of parallel rays and included passages which conduct said beams through them, together with devices adapted to be adjusted within said passages, so as to apply the light in greater or less volume at desired points; 2nd. The combination, with a generator of electricity and electric connections, of devices which subdivide the main electric light into beams, respectively having parallel rays and included passages which conduct said beams through them, together with adjustable prisms, or their equivalent, fitted in said passages, and devices fitted in the egress ends of the passages adapted to pass the beams out in diverging or converging pencils of light; 3rd. The combination, with a generator of electricity and electric connections, of devices which enclose the main body of the electric light and divide it into beams, respectively having parallel rays, together with included passages which conduct the beams through them, and devices adapted to be adjusted within said passages, to change the course and size of said beams; 4th. The combination, with a generator of electricity and electric connections, of devices which subdivide the main electric light into beams, respectively having parallel rays, and included passages which conduct said beams through them, together with prisms, or their equivalent, adjustable within said passages, which colour or modify the beam light; 5th. The combination, with an electric machine and an hydraulic motor for actuating the same, of a reservoir located above the motor and connected therewith by a pipe, and a pumping engine adapted to elevate the water that passes through the motor to the reservoir, whereby said motor is supplied with a constant fall of water, to actuate the electric machine in an unvarying rate of speed and maintain the electric light at any pre-determined candle power; 6th. The combination, with an electric candle, of a float stem secured directly to the lower end thereof, and formed as a tube having a closed top and an open bottom provided with a detachable cap, the sam-

being adapted to permit either liquid or solid matter to be introduced within said stem; 7th. The combination, with a fixed plate formed with two vertical or vertically inclined guides and located within a hollow stand suitably filled with liquid, of floats having free longitudinal movement respectively within said guides, and whose upper extremities are secured to the electric candles, together with guides formed in the top of the stand, and made vertical or vertically inclined, corresponding with the plate guides and top guides, being adapted to permit the burning extremities of the electric candles to have unrestrained endwise movement therein; 8th. The combination, with a horizontal plate fixed transversely in a hollow stand and immersed within the liquid with which the latter is suitably filled, said plate being formed with vertical or vertically inclined guides within which the candle floats have free endwise movement, of the guides formed in the top of the stand and made corresponding vertical or vertically inclined, whereby the burning extremities of the electric candles, whose opposite ends are secured respectively to said floats, may have unrestrained longitudinal movement within the same; 9th. The combination, with a chamber, suitably filled with liquid, in which the electrodes are supported either by floats or pistons, of an electro-magnet actuated by the electric current of the lamp, the same being adapted to vary the level of said liquid, whereby the electrodes are adjusted relative to each other, corresponding with the intensity of the electric current and the reverse; 10th. The combination, with a float regulator adapted to maintain the electrodes in burning position within certain limits, of a magnet regulator adapted to control said limits by varying the level of the liquid coincident with the variance in strength of the electric current of the lamp; 11th. The combination, with the electrodes, of a chamber, or chambers, suitably filled with liquid, in which the same are supported by floats or pistons, said chamber being capable, in connection with devices adapted for the purpose, to vary the volume of liquid contained therein, according as the electric current of the lamp varies in strength; 12th. The combination, with a chamber, or chambers, suitably filled with liquid, and in which the electrodes are supported in burning position, of a supplementary chamber communicating therewith and adapted in connection with an electro-magnet actuated by the electric current of the lamp, to draw a portion of the liquid from out of said electrode chamber, or chambers, and to recharge the latter with the same, corresponding to the strength of said electric current; 13th. The combination, with a chamber, or chambers, suitably filled with liquid and in which the electrodes are supported in burning position, of a communicating chamber, made wholly or partially elastic and adapted in connection with an electro-magnet through which the electric current of the lamp passes, to vary in capacity as the strength of said current varies; 14th. The combination, with a chamber, or chambers, suitably filled with liquid and in which the electrodes are supported, of an elastic chamber communicating therewith, and located with its top below the lowest level of liquid in said electrode chamber, or chambers, a part of said elastic chamber being formed of a magnetic substance, and adapted in connection with an electro-magnet through which the lamp current passes to expand and contract corresponding to the variance in the strength of said electric current; 15th. The combination, with the elastic chamber, of a spring device adapted to vary the tension with which the same resists expansion, when subjected to the attraction of the electro-magnet; 16th. The combination, with the elastic chamber, of an electro-magnet and adjusting device adapted to move the latter to and from said chamber; 17th. The combination, with a float regulator which maintains the electrodes in burning position, of a magnet regulator which automatically lights the lamp in the first instance, and relights it when afterwards it may be put out, the same being adapted to vary the level of the liquid in said float regulator coincident with the variance in strength of the electric current, whereby the electrodes are relatively adjusted, corresponding with the intensity of the electric current, and also whereby the intensity of said current is varied corresponding with the relative adjustment of the electrodes; 18th. The combination, with a chamber, or chambers, suitably filled with liquid and in which the electrodes are held in burning position by floats or pistons, of an expansible chamber communicating therewith, and provided with an elastic tension device, together with an electro-magnet through which the lamp current passes, that portion of the expansible chamber nearest said magnet being formed of soft iron or other magnetic substance, the whole being adapted to cause the electrodes to separate as the electric current increases, and to approach each other as said current decreases in strength; 19th. The combination, with a float regulator which adjusts the electrodes M6 M7 in burning position, of an optical regulator L6 adapted to move the electric lamp in compensation for any change in position of its electric arc; 20th. The combination, with a float regulator capable, by means of a single float C6, to adjust the electrodes in burning position, of an optical regulator adapted to move bodily the electric lamp, so as to compensate for any change in location of the centre of its electric arc; 21st. The combination, with two electro-lens M6 M7, located one above the other, of a single float C6, buoyed in liquid and adapted to maintain said electrodes in burning position; 22nd. The combination, with suitable substances capable of adjusting the lamp by means of the expansion of suitable substances when subjected to heat, of a lens L6, or its equivalent, which concentrates light upon said mechanism, as the centre of the electric arc may vary in its position, the same being adapted to maintain said arc centre at a practically constant point; 23rd. The combination, with a lever D6 adapted to adjust the lamp, and lens actuating mechanism which operates by means of the expansion of suitable substance when subjected to heat, of a lens L6, or its equivalent, which converges light upon said mechanism as the centre of the electric arc may change its position, thereby causing the lamp to move in compensation for any such arc movement; 24th. The combination, with a lever D6 which supports an electric lamp on one arm, and mechanism adapted, by means of the expansion of suitable substance when subjected to heat, to actuate the other arm of the lever, of a lens L6, or its equivalent, which directs the light of the varying arc centre upon said lever actuating mechanism, and thereby adjusts the lamp in compensation for the change in position of its electric arc; 25th. The combination, with a lever D6 which supports an electric lamp on one arm, and adjusting devices which, by means of the expansion of suitable substances when subjected to heat, actuate the other arm of the lever respectively in opposite directions, of a lens L6, or its equivalent, which directs the light of the varying centre of the electric arc respectively upon said adjusting devices, the same being adapted to move the lamp in direction opposite, but in degree equal to the movement of said electric arc; 26th. The combination, with a horizontally pivoted lever D6 which supports an electric lamp on one arm, while the other arm is suitably counterbalanced, together with upper and lower pistons and piston rods which move the latter arm in opposite directions, of independent tubes F6 F7 filled with liquid which expand, when subjected to heat, and in the lower extremities of which said piston,

and piston rods have actuating movement, the same being in connection with a stationary lens L6, or its equivalent, adapted to focus light from the centre of the electric arc, as the latter may vary in position, respectively on the upper or opposite extremities of said tubes.

### No. 10,308. Improvements on the Dexter Spring. (*Perfectionnements aux ressorts dits "de Dexter."*)

Dudley Ackland, Almonte, Ont., 29th July, 1879, for 5 years.

*Claim.*—1st. The converging of the lower springs E E from the bottom of the hind axle, at outside springs, to the centre of the front axle; 2nd. The mode of attaching springs E E to hangers F F; 3rd. The hangers F F joining together and taking the king bolt tie at the bottom of the front axle B.

### No. 10,309. Improvements on Pumps. (*Perfectionnements aux pompes.*)

Olivier D. Barberie and George F. Barberie (Administrators of the effects of Edwin A. Barberie), Portland, N.B., 29th July, 1879, for 5 years.

*Claim.*—1st. The wood chamber A used as a submerge force pump; 2nd. The iron box B and the packing ledge  $xz$ ; 3rd. The escape holes K C, to allow the water to escape from the pipe; 4th. The mode of seating the valve box E E in the bore (cylinder) of wood chamber; 5th. The mode of arranging the packing leather in four or more pieces, or less, and cutting them on a curve; 6th. The bracket C and its uses; 7th. The mode of attaching the lever K to iron plate J J and pump; 8th. The mode of constructing the tin air chamber and attaching it to the pump.

### No. 10,310. Improvements in Steam Boilers. (*Perfectionnements aux chaudières à vapeur.*)

James Livingston and Joseph Wright, Toronto, Ont., 29th July, 1879, for 5 years.

*Claim.*—1st. The ash pit section At, provided with the fine E and the water sections A2 A3 A4 A5 placed one above the other and provided with a fire chamber D, coal reservoir H and return flues G G; 2nd. The combination of two or more water sections provided with return flues for the heat and products of combustion, and communicating water ports; 3rd. The combination, with the lower water sections provided with flues G G, of the top water section G5 said section being recessed on its under side to form the chamber I and provided with tubes G3; 4th. The combination, with the steam and water boiler A built up on sections having communicating water ports, of the inlet pipe K and the outlet pipes N; 5th. The combination, with the upper sections A5 provided with the tubes G3 corresponding to the tubes in the lower sections, of the sectional plate L.

### No. 10,311. Improvements in Paper Bag Machines. (*Perfectionnements aux machines à sac de papier.*)

William C. Cross, Boston, Mass., U. S., 1st August, 1879, for 5 years.

*Claim.*—1st. The combination of the severing knife or cutter and the independent mechanisms, for imparting to it rising and falling and backward and forward motion, with the reciprocating plate knife folder; 2nd. The combination with the guide finger of a reciprocating follower provided, at its front end, with jaws arranged and operating to direct the paper tube to pass around the guide finger; 3rd. The combination, with the rising and falling severing knife or cutter, of the reciprocating follower provided with yielding jaws and arranged to move backward and forward in the interval between the knife and its head, or stationary blade, in conjunction with which it acts; 4th. The combination, with the guide finger, of a vibratory folder arranged and operating to break down the upper ply of the tube as it is fed forward under the guide finger; 5th. The combination with the guide finger and the plate knife folder operating together to make the first or diamond fold of the vibratory folder; 6th. The vibratory folder carried by the guide finger and arranged and operated to enter the tube with the guide finger and to turn back and thus break down the upper ply of said tube; 7th. The delivery rolls arranged and operating to open or separate, to permit the end of the diamond fold to pass between them; 8th. The combination, with the mechanism for forming the final fold, of the guide arranged and operating to keep down the second fold and to present it in proper position to pass into the final rolls; 9th. The combination of the vertically reciprocating folding knife and the second fold guide carried by, and moving with, said knife and united therewith; 10th. The combination, with the paste trough or reservoir and the vertically reciprocating paster, of the box, in which said paster moves, arranged to communicate with the reservoir and the sliding box bottom or paster stem formed in two parts connected to permit the upper part to partly descend without actuating the paster; 11th. The combination with two stems, in combination with the coupling sleeve; 12th. The paster and its two stems, the wiper rod, the sliding bottom, its hinged actuating rod, operated by the wiper rod and the spring for returning the sliding bottom to its position; 14th. In combination with the folding knife, the guard for keeping the paste-covered part of the fold from contact with the knife; 15th. The combination of the trunk or former, the reciprocating follower and the intermittently moving feed rolls placed in advance of the former or trunk, under the arrangement and for operation as set forth.

### No. 10,312. Protector for the Fetlock Sinews of Horses. (*Protecteur pour les nerfs du fanon des chevaux.*)

Huns Lehmann and Aurel Borendt, Hanover, Germany, 1st August, 1879, for 5 years.

*Claim.*—An elastic ring, or equivalent appliance made of India rubber or other elastic material, which at one end or side is connected to an anklet boot or similar appliance around the leg of the horse, and at the other end or side is connected to a strap or similar appliance around the fetlock.

### No. 10,313. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Orison Twombly, Lake Village, N. H., U. S., 1st August, 1879, for 5 years.

*Claim.*—1st. The combination, with the stationary needle plate A, of the rotary cam-wheel B provided with the fixed cam B<sup>1</sup> and the adjustable cam *k k*; 2nd. The combination of the single supporting arm D, the yarn carrier *u* supported upon the standard T, the bobbin carrier V, and tension spring *z*; 3rd. The combination, with the cam wheel B provided with the sleeve C, through which the spindle of the needle plate passes, of the level gear wheels G H and crank arm I I<sup>1</sup>; 4th. The combination, with the needle plate A, of the adjustable fingers S; 5th. The combination, with the rotary cam-wheel B provided with the gear wheel H engaging with gear wheel G, of the horizontal bobbin carrier and yarn carriers Q M P, so arranged as to allow the said bobbin and yarn carriers to rotate freely, without obstructing the action of the crank while in operation; 6th. The auxiliary yarn carrier M in combination with the yarn carrier N, the spur wheel N, cam-wheel P, and the needle plate A.

### No. 10,314. Improvements in Bird Cages. (*Perfectionnements aux cages à oiseaux.*)

Owen W. Taft, New York, N. Y., U. S., 1st August, 1879, for 5 years.

*Claim.*—1st. The combination of the cap A, having band B, with standard E, tension wires I and lower band F, having bottom of cage attached thereto; 2nd. The combination, in the base L, of the parts, ridge M forming angular space N, also forming a socket for the reception of the flange Q of the cup or bath O; 3rd. The combination of the base L, having ridge M, with cup or bath O; 4th. The combination of the band B, having hooks D, tension wires I, and band F having notches G; 5th. The combination of the band B having hooks D, standards E, and band F having notches G and tension wires I; 6th. The combination of the bottom I, provided with openings and springs C, with feed cups b; 7th. The cap A, having perforations C forming hooks D; 8th. The combination of the bottom L provided with openings over which are attached the feed cups b; 9th. The combination of the perch, having spring ends d, with standards E.

### No. 10,315. Improvements on Carriage Tops. (*Perfectionnements aux soufflets des voitures.*)

James McCrum, Irish Creek, Ont., 1st August, 1879, for 5 years.

*Claim.*—1st. In a carriage top, the combination of any one of its bows with the pivot plate B, pivot a, and pin hole f; 2nd. The combination of the bow A with the spring g and lock lever D; 3rd. The pivot plate B having the pivot a, lugs d and pin hole f; 4th. The segment C having the pivot a, standard b, pin holes c and feet h; 5th. The arrangement and combination of the bow A, pivot plate B, segment C, lock lever D and spring g.

### No. 10,316. Improvements on Animal Traps. (*Perfectionnements aux pièges à vermine.*)

William Driscoll, Brookville, Ont., 1st August, 1879, for 5 years.

*Claim.*—1st. The elbow lever C, pivoted to the sides of the box A, in combination with the falling platform c and tilting shelf D; 2nd. The combination, with the box A, having the falling platform c, of the pivoted elbow lever C and tilting shelf D; 3rd. The combination of the tilting platform c, lever C, tilting shelf D, with the box A.

### No. 10,317. Improvements on Lamp Wick Adjusters. (*Perfectionnements aux bocs des lampes.*)

George H. Hyde, Boston, Mass., U. S., 1st August, 1879, for 5 years.

*Claim.*—1st. The combination of the tube C, the two independently moving wick adjusting wheels A B and a suitable operating mechanism, whereby the burning end of the wick may be adjusted evenly; 2nd. The combination of the wick tube C and the edge adjusting spur wheels A B, with the quill and finger wheel B B and the shaft and finger wheel A A.

### No. 10,318. Improvements in Stump Extractors. (*Perfectionnements aux arrache-souches.*)

Joshua Henshaw, St. Hyacinthe, Que., 1st August, 1879, for 5 years.

*Claim.*—1st. A stump or stone extractor capable of acting both in the upward and downward stroke of the lever or handle; 2nd. The combination and arrangement of the fixed stem A, movable or lifting bar C C, embracing and sliding on the stem A and provided with a set of ratchet teeth *e e*, on each of its outer edges, with the double break or lever D, lifting pawls f f and retaining pawls g g.

### No. 10,319. Improvements on Iron Fences. (*Perfectionnements aux clôtures de fer.*)

John W. Davy, Brookville, Ont., 1st August, 1879, for 5 years.

*Claim.*—1st. An iron fence post, having feet a a formed by splitting the bar flatwise, longitudinally and curvilinearly bending the split portion; 2nd. A wrought iron fence panel, constructed of two or more flat horizontal bars B C and vertical rods D passing through punctures in the bars having ends notched and tenoned to lock together; 3rd. A wrought iron fence, composed of post A having outwardly bent feet a a, and two or more horizontal bars B C and inserted vertical rods D, the ends of said bars passing through punctures in the posts, and formed with a tongue P, to lock with notches in the bent end d, of an adjoining section or panel to secure the post A interlockingly; 4th. A wrought iron fence panel, constructed of two or more flat horizontal bars B C and vertical rods D, passing through punctures in the bars having angular bent ends to bolt or lock to the posts; 5th. A wrought iron fence, composed of posts A having outwardly bent feet a a, and two or more horizontal bars B C and inserted vertical rods D, the ends of said bars angularly bent and bolted to the posts A intermediately placed between two panels.

### No. 10,320. Improvements on Musical Instruments. (*Perfectionnements aux instruments de musique.*)

George B. Kelly and Mason J. Matthews, Boston, Mass., U. S., 1st Aug., 1879, for 15 years.

*Claim.*—1st. In combination with the driving shaft, the feed rolls of a mechanical musical instrument A in which a strip of perforated paper, or other flexible material, is used, one or more pitman rods connected to said shaft, and the shaft J connected to the bellows by crank J<sup>1</sup> J<sup>2</sup>, and links m m; 2nd. In combination with a mechanical musical instrument in which a strip of perforated paper, or other flexible material, is used, the rollers L M mounted and adapted to be revolved in suitable bearings, in the supplementary or removable frame C; 3rd. A strip of paper having perforations arranged to represent a quadrille, or other piece of dancing music, and adapted to control the passage of wind through the reeds, and having marked or printed thereon the "calls" or "figures" belonging to said quadrille or other dancing music, at the proper place for the same to be called; 4th. A strip of paper having perforations arranged so as to represent a quadrille, or other piece of dancing music, and adapted to control the passage of wind through the reeds, having marked or printed thereon the "calls" or "figures" belonging to said quadrille or dancing music, at the proper place for the same to be called, and marks or lines formed thereon to indicate to the operator the proper time to give the calls.

### No. 10,321. Window Cleaning Step Chair. (*Chaise marche-pied pour nettoyer les fenêtres.*)

Anna Dormitzer, New York, N. Y., U. S., 1st Aug., 1879, for 5 years.

*Claim.*—1st. A window cleaning chair having a platform A, raised strip B, side strips E E, strip F supported by braces c c, guards C D D, supports G G, iron supports I, rods g, spring k k, eccentricities h h, step H, auxiliary step K, side strips L, rod l, holes m m, support M provided with plated and trussed cross-beam N, spring O, rod S, clamp g t, drain R provided with ratchets t, shaft u, lugs v provided with pawls z, forks T provided with handles z<sup>1</sup> and stops z<sup>2</sup>; 2nd. In combination with the window cleaning chair, the standard W provided with device c<sup>1</sup>; 3rd. In the construction of a window cleaning chair, the combination of a drum R provided with ratchets t, shaft u, lugs v provided with pawls z, forks T provided with pawls w and cords P; 4th. In the construction of a window cleaning chair, the combination of the spring z, supports G G, cross-pieces g, step H, springs d<sup>1</sup> k k<sup>1</sup>, concentricities h h<sup>1</sup>, supports I, rod g<sup>1</sup> and auxiliary step H, provided with sockets f, legs r r<sup>1</sup> and slots s<sup>1</sup>; 5th. The steps z<sup>1</sup>; 6th. The rear support M provided with cross beam N that is furnished with an iron plate n, a truss rod o and spring O; 7th. The sliding wedges U, held in grooves in the side strips L faced with leather, or other soft material, and provided with handles z<sup>1</sup>, in combination with the stops z<sup>1</sup>; 8th. The cords P that are secured at one end to the pins p, and thence passing through the cross-beam N, over the grooved rollers Q and through F, have their other ends secured to the drum R; 9th. The spring O wound around the rod l, with the loop resting against the lower face of the platform and with ends entering the support M, which it serves to throw open as the tension of the cord P is relaxed; 10th. The springs f<sup>1</sup> in combination with the platform A and auxiliary step K; 11th. The plated and trussed cross-beam N.

### No. 10,322. Improvements on Rotary Engines. (*Perfectionnements aux machines rotatives.*)

Alexander L'Espérance, Littleton, N. H., 1st Aug., 1879, for 5 years.

*Claim.*—1st. The casing E, having brackets II provided with downwardly projecting arms J J, in combination with the foundation A having openings K K, uprights B B and the rotary disk E; 2nd. The pistons S, having rods Q provided with transverse pins R, in combination with the pivoted levers V having pivoted arms W provided with sockets X and studs Y, and the cam groove disk or plate F; 3rd. The combination of the plates F G and curved plates H H, having grooves K<sup>1</sup>, with the springs L, packing rods M and the rotary disk E; 4th. The abutments A<sup>1</sup>, composed essentially of the plates B, having bolts C, recessed plates D, springs E, and angular plates F, G, H, and a binding plate and nut; 5th. The combination, with the rotary disk E having annular groove O, of the abutments A<sup>1</sup>.

### No. 10,323. Machine for Mincing Meat. (*Machine pour hacher la viande.*)

Robert C. Cuff, Hamilton, O., 2nd Aug., 1879 (Extension of Patent No. 3 725), for 5 years.

### No. 10,324. Machine for Disintegrating Fibres. (*Machine pour désagréger les fibres.*)

William S. Archer, Yonkers, N. Y. (Assignee of John A. Southmayd Elizabeth, N. J.), U. S., 7th Aug., 1879, for 5 years.

*Claim.*—1st. A machine for disintegrating fibres, in which the finer and coarser fibres are separated by means of a picker and a stop or stops, and carried off in different directions; 2nd. In combination with a current or currents of air, the screen H, picker D and a stop or stops; 3rd. In combination with a current or currents of air, the picker D, carrier z and stop N; 4th. In combination with a current or currents of air, the picker D, carrier z, stop N and stop M; 5th. In combination with a current or currents of air, the adjustable carrier z provided with the loop e, apertures c and a rod.

### No. 10,325. Improvements on Steam Boilers. (*Perfectionnements aux machines à vapeur.*)

The Swamscot Machine Company (Assignees of Patrick Quinn), South Newmarket, N. H., U. S., 7th Aug., 1879, for 5 years.

*Claim.*—1st. The neck b, extending down from the main part a, in combination with the vertical stack of pipes c (extending up through such neck) the smoke chamber f, return pipes g and encompassing flue i arranged with such neck b and main part a; 2nd. The insulating chamber l, smoke cham-

ber, *f*, neck *b*, tubes *e* *g* and smoke flue *h*; 3rd. The neck *b* (to extend into the furnace), stack of pipes *g*, *e*, going through the neck and the main part *a*, into the smoke chambers *f*, *h*, encompassing flue *i* and the two ducts *p* *q* and damper *r* arranged in the lower of said ducts; 4th. The chambers *f*, *h*, open at top and there provided with covers *k*, *m*, in combination with the stack of pipes *e* *g*, neck *b*, smoke chamber *h* and encompassing flue *i*.

### No. 10,326. Improvements on Dredging Machines. (*Perfectionnements aux machines à dragueur.*)

Barnabas Hedge, Augusta, Me., and Francis A. Cushman, Lebanon, N. H., U. S., 7th Aug., 1879, for 5 years.

*Claim.*—1st. The combination of the receiver B and telescopic extension C, provided with suitable operative mechanism; 2nd. The combination of the receiver B, telescopic extension C and discharger I J; 3rd. The combination of the receiver B, discharger I, united by the elbow H and constituting the vacuum chamber, with the extension tube C; 4th. The combination of the receiver B, discharger I J and air supplying tube R; 5th. The combination of the receiver B, telescopic extension C, discharger I J and air tube R; 6th. The combination, with receiver B, of the discharger I having gate at one end, and air, steam and water valves at the other end; 7th. The combination of the receiver B, telescopic extension C and connecting or stiffening bars E.

### No. 10,327. Fire Back Wall for Stoves. (*Arrière-mur à feu pour les poêles.*)

John Milne, Hamilton, O., 7th Aug., 1879, for 5 years.

*Claim.*—1st. In combination with stoves, ranges, &c., a fire back wall A provided with a hollow recess B, ventilating holes C, all constructed in one or more pieces; 2nd. A ventilating fire back wall constructed hollow, so as to allow air to pass up through and out at the ventilating holes at the top, to prevent it from burning out.

### No. 10,328. Improvements on Stone Crushers. (*Perfectionnements aux broyeurs de pierre.*)

Theodore A. Blake, New Haven, Conn., U. S., 7th Aug., 1879, for 5 years.

*Claim.*—1st. The combination of a pair of upright convergent jaws, mechanism for imparting a reciprocating or vibratory movement to one of said jaws, and an elastic or yielding material between said jaws and the point where the power takes its bearing; 2nd. The combination, in a pitman, of the block and head, with rod or rods connecting said head and block, and nuts and springs to adjust the length of the pitman; 3rd. The combination of an adjustable pitman and adjustable toggle block; 4th. The combination, with upright convergent jaws, of the front and rear parts, tension bars, or rods, and toggle joint; 5th. The upright convergent jaws, the clamps C longitudinally embracing that part of the frame where the jaws are arranged; 6th. The combination of a pair of upright convergent jaws, one of which has a reciprocating motion with respect to the other, a toggle bearing upon said jaw and an adjustable pitman through which and said toggle the power is communicated to said jaw, and the movement of said jaw adjusted or varied as may be desired.

### No. 10,329. Improvements on Cockle Separators. (*Perfectionnements aux séparateurs de la nielle.*)

Hermann Kurth, Hamilton, Ont., 7th August, 1879, for 5 years.

*Claim.*—1st. Two or more revolving cylinders, provided with pockets upon their internal periphery, of different sizes, with the cylinder having the smaller pockets arranged to receive the materials to be separated from the cylinder or cylinders having larger pockets; 2nd. A revolving cylinder, having inner pockets or cavities or an inclined bottom combined with a conveyor and trough arranged to carry the cleaned wheat in opposite directions from the cockle; 3rd. The cylinder A having inner cavities *a* and separate intervening perforations *b*; 4th. In a cockle separator, a cylinder having inner cavities or pockets supported at one end and rotated by a central shaft, and supported at its periphery at the other, so as to permit the use of means for delivering the cockle and wheat at opposite ends of the cylinder; 5th. The inclined cylinder A, attached to the central shaft at one end and free from the same at the other, in combination with the trough F projecting outside the cylinder, at its free end, and the shaft D carrying conveyor G, arranged to revolve in the trough F and discharge the cockle at the free end of the cylinder; 6th. The combination, with the revolving cylinder, in a grain separator, of supporting rollers having an elastic periphery, and a bushing of glass or analogous anti-friction material; 7th. The catch board hinged or pivoted to the receiving trough within the cylinder, and self-adjusting with respect to the cylinder by its own weight; 8th. The combination, with the revolving cylinder, of the catch-board, having a detachable and adjustable elastic strip clamped between the edge of catch-board, and a longitudinal plate by means of binding screws; 9th. The cylinder B, having indented cavities, upon the inside, pressed up to form conical projections, upon the outside, with a greater thickness of metal at the apex of said cone or the bottom of the cavity; 10th. The combination, with the cylinder supported at one end upon a central driving axis and free at the other from the same, of the trough F swung upon the shaft D, at one end, and projecting outside of the cylinder, at the other, and connected with a rigid support; 11th. The combination, with the indented cylinder B, of the brush H connected with the shaker C, and both being driven by the eccentric K; 12th. In combination with the lower cylinder B, the sieve C constructed over the top of the said cylinder, for the purpose of separating small wheat and cockle from the large grain, when the top cylinder A is not used; 13th. In combination with the indented cylinder B, an independent catch-board I, held by two arms *p* and adjusted by thumb-screws *g* and springs *r*.

### No. 10,330. Improvement on Hydraulic Motors. (*Perfectionnement aux moteurs hydrauliques.*)

Kirke D. Bishop (Assignee of William F. Class and John C. Briegleb), Cleveland, Ohio, U. S., 7th August, 1879, for 5 years.

*Claim.*—1st. In motors for producing currents of air and pressure of air, a hollow head or shaft A, journalled in a frame and provided with tubular arms projecting therefrom, from either side, and having a tubular connection with said head below the axial line thereof, in combination with a tubular stationary key on which the said head and tubular arms vibrate; 2nd. A stationary tubular key D, having side openings therein above the axial line of said key and holding such relation to the head or shell A, in which it is fitted, that the openings in the said head and the openings in the key are not in open relation to each other, when the arms C, projecting from the said head, are in a horizontal position, but become openly related, alternately, on vibrating the said arms; 3rd. In combination with the tubular arms, the cylinders G H respectively attached or connected to said arms in an openly related manner, and provided with air pipes, whereby air is conveyed from the said cylinders to the air vessel N; 4th. In combination with the vibratory cylinders, the two way cocks J and J', connected to each other by a pipe and operated conjointly with and by the vibratory cylinders, arm P and link; 5th. The stop-cock F, arranged in relation to, and in combination with the key and head of the vibratory arms and air vessel N; 6th. In combination with the cylinders, waste valves I, arranged in the bottom thereof, respectively, and opening inwardly therein by means of a stem depending from said valves to a discharger; 7th. The air vessel N, having a flexible top and provided with a weighted lever D, connected by a link to a stop-cock F, and said air vessel having therein a ball valve with appropriate seats above and below said valve, for closing the inlets and outlets of the vessel, all adapted to operate in relation to each other; 8th. The vibratory cylinders G H, with their respective valves, air pipes and arms, stationary key provided with openings above the axial line thereof, shell or head A provided with openings below the axial line and corresponding to the openings in said key, and arranged in relation therewith, two way-cocks J J', stop-cock F and air vessel having therein a valve for closing the inlet and outlet thereof, and having a flexible top attached thereto and weighted lever connected to the said cock F by a link for operating the same.

### No. 10,331. Improvements on Stop and Waste Cocks. (*Perfectionnements aux robinets de retenue et de déchargement.*)

William Porteous, Montreal, Que., 7th August, 1879, for 5 years.

*Claim.*—1st. The combination of the body A, the reciprocating stem B, having the threaded enlargement *c* slotted, grooved or channeled above the enlargement to furnish outlet from body A to chamber D; 2nd. The combination of body A, stem B, the movable waste chamber D recessed and having a flange projecting between the body and its cap, and the packing *a*; 3rd. In that class of stop-cocks in which the valve is lowered to its seat, by a threaded enlargement, on its stem engaging with the threaded body of the cock, a waste passage constructed in the stem or its enlargement, leaving a permanent passage way for the waste water from the water-way of the valve shank to that portion of the body above said enlargement; 4th. The combination of main stem *b* with stem *h*, pin *i* and spring *s*, the stem *h* having a circumferential groove wider than the head of pin *i*.

### No. 10,332. Improvements on Plough Gauges. (*Perfectionnements aux jauges des charrues.*)

Rodney Sornberger, Stanbridge, and Peter H. Bedard, Bedford, Que., 7th August, 1879, for 5 years.

*Claim.*—1st. The combination of the standards A and the surface shoe; 2nd. The combination of the horizontal bars B and farrow shoe or gauge.

### No. 10,333. Improvements in Submerged Pumps. (*Perfectionnements aux pompes submergées.*)

Benjamin J. C. Howe, Syracuse, N. Y., U. S., 7th August, 1879, for 5 years.

*Claim.*—1st. The yoke having, at its upper end, the socket to which the plunger-rod is attached, and, at its lower end, the plunger-carrying standard, all made in one piece; 2nd. The non-corroding cylinder A, having the interior flange *a* forming the valve seat, in combination with the cap B and the valve *b* clamped between the two.

### No. 10,334. Improvements in Wire Coiling Machines. (*Perfectionnements aux machines à croquer le fil de fer.*)

John Tye and Harry C. Lindsay, St. Paul, Minn. (Assignees of William F. Moody, Chicago, Ill.) U. S., 7th August, 1879, for 5 years.

*Claim.*—1st. A wire guide, one end of which is straight and receives the wire from the rollers, and the other end bent into a helical form, for bending and delivering the wire in a spiral form; 2nd. The wire guide or former, composed of a tube bent into a helical form, in combination with the stud S and rollers D D.

### No. 10,335. Improvement on Animal Fibre. (*Perfectionnement de la fibre animale.*)

William S. Archer, Yonkers, N. Y. (Assignee of John A. Southmayd, Elizabeth, N. J.) U. S., 7th August, 1879, for 5 years.

*Claim.*—A fibre produced from the fur of the bison.

### No. 10,336. Improvements on Clasps. (*Perfectionnements aux agrafes.*)

Bennett Greig, New-York, U. S., 7th August, 1879, for 5 years.

*Claim.*—1st. The combination of two jaws, flexible ears projecting from the edges of the shanks of said jaws and a spring which is placed between the jaws, and the ends of which are fastened to the shanks of said jaws by

means of the flexible ears; 2nd. The combination of two jaws, flexible ears projecting from the edges of the shanks of said jaws, a spring placed between the jaws and held in position by the flexible ears and hooks formed on the shank of one of said jaws; 3rd. The combination of two jaws, flexible ears projecting from the edges of the shanks of said jaws, a spring placed between the jaws and held in position by the flexible ears, hooks formed on the shank of one jaw and a spring clamp formed on the shank of the other jaw, the whole being constructed of three pieces.

### No. 10,337. Improvements on Bottle Stoppers.

(Perfectionnements aux bouchons des bouteilles.)

August Peterson, (Assignee of Charles G. Hutchinson.) Chicago, Ill., U. S. 7th August, 1879, for 5 years.

Claim.—1st. In combination with the neck of a bottle, a laterally yield-

ing spring applied to a plug or stopper adapted to close the lower end of the neck, when the said spring and stopper are adjustable vertically together, and the spring is fitted to the neck and adapted to suspend the plug or stopper alternately in its open and closed position; 2nd. The combination of the plug B, the laterally yielding and self-suspending spring C and a bottle having a contracted neck.

### No. 10,338. Improvements on Churns.

(Perfectionnements aux barattes.)

George W. Barton, Unidilla, Mich., U. S., 13th August, 1879, for 10 years

Claim.—A table A, having opening K and provided with fly-wheel B gear G, pinion H, crank J, wrist-pin D, feed-pin E, guide E and churn dash F.

## List of Patents issued up to 24th September, 1879, but not yet Officially published in the Patent Office Record.

No. 10,390. J. W. Morgensier, Sheboygan, Wis., U. S. A., "Hinge," August 27th, 1879.

No. 10,391. B. F. Penney, Dedham, Me., U. S. A., "Shingle Machine," August 27th, 1879.

No. 10,392. E. P. Carter, Arcade, N. Y., U. S. A., "Improved Waggon and Waggon Springs," August 27th, 1879.

No. 10,393. W. W. Grier and H. Barr, Hulton, Penn., U. S. A., "Fifth Wheel for Vehicles," August 29th, 1879.

No. 10,394. W. Hadden, New York, N. Y., U. S. A., "District Telegraph Signalling Apparatus," August 29th, 1879.

No. 10,395. M. G. Carey, Greensborough, Penn., U. S. A., "Process and Apparatus for Aging Liquors," August 29th, 1879.

No. 10,396. A. Macfie, Chatham, Ont., "Shelf Supporter," August 29th, 1879.

No. 10,397. G. S. Rice, Chicago, Ill., U. S. A., "Music Teaching Chart," August 19th, 1879.

No. 10,398. L. H. Baker, Fairfield, Ill., U. S. A., "Sliding Box and Valve Combined," August 29th, 1879.

No. 10,399. J. Simpson, York Township, Ont., "Land Roller," August 29th, 1879.

No. 10,400. J. V. Taylor, Lansingburgh, N. Y., U. S. A., "Cake Griddle," August 29th, 1879.

No. 10,401. J. Keats, Wood Green, England, "Sewing Machinery and Caps used therewith," August 29th, 1879.

No. 10,402. E. M. Ball, Hatley, and W. Sleeper, Coaticooke, Que., "Stove Pipe Sewing Machine," August 29th, 1879.

No. 10,403. E. Moore, Portland, Me., and A. R. Wright, Geneva, N. Y., U. S. A., "Railway Derrick," August 30th, 1879.

No. 10,404. E. Moore, Portland, Me., and A. R. Wright, Geneva, N. Y., U. S. A., "Concrete Skips," August 30th, 1879.

No. 10,405. P. K. Dederick, Albany, N. Y., U. S. A., "Horse Engine," (Extension of Patent No. 3,900), August 30th, 1879.

No. 10,406. B. F. Fitch, Lacrosse, and C. H. Masters, Sparta, Wis., U. S. A., "Water Feeding Device for Boilers," August 30th, 1879.

No. 10,407. S. E. St. O. Chapleau, Ottawa, Ont., "Railway Nut Lock," September 2nd, 1879.

No. 10,408. H. Webb, Rockport, Mass., U. S. A., "Fish Trap," September 2nd, 1879.

No. 10,409. C. Bentley, Dresden, Ont., "Plow," September 2nd, 1879.

No. 10,410. S. H. Short, Columbus, Ohio, U. S. A., "Electric Telephone," September 2nd, 1879.

No. 10,411. S. Y. Love, Philadelphia, Penn., U. S. A., "Sewing Machine Attachment," September 2nd, 1879.

No. 10,412. G. Mullin, Hullett, Ont., "Elevator and Bag Holder," September 2nd, 1879.

No. 10,413. B. H. Skoyles, Odessa, Ont., "Bolting and Crushing Reel," September 2nd, 1879.

No. 10,414. W. Metcalf, Toledo, Ohio, U. S. A., "Key Fastener," September 2nd, 1879.

No. 10,415. J. F. Avery, Halifax, N. S., "Composition for the Relief of Ear-ache," September 2nd, 1879.

No. 10,416. G. M. Phelps, Brooklyn, N. Y., U. S. A., "Electric Telephone," September 2nd, 1879.

No. 10,417. E. A. C. Pew, Welland, Ont., (Assignee of W. J. Abrich, Elkton, Md., U. S. A.), "Roasting and Baking Pan," September 3rd, 1879.

No. 10,418. E. T. Starr, Philadelphia, Penn., U. S. A., "Dental Engine," September 3rd, 1879.

No. 10,419. J. B. Burbank and J. W. Atkins, Danville, Que., "Butter Worker," September 3rd, 1879.

No. 10,420. H. S. Parmelee, New Haven, Conn., U. S. A., "Fire Extinguisher," September 3rd, 1879.

No. 10,421. W. W. Huntley, A. P. Hulcomb, and A. Heine, Silver Creek, N. Y., U. S. A., "Means for Cleansing the Meshes of Bolting Screens," September 3rd, 1879.

No. 10,422. H. P. Ballou, Needham, Mass., U. S. A., "Knitting Machine," 3rd September, 1879.

No. 10,423. W. Marks, Hopewell, N. Y., U. S. A., "Fertilizer-Distributor," 3rd September, 1879.

No. 10,424. G. Gilmore Cote St. Paul, Q. e., (Assignee of W. Tucker, Fiskdale, Mass., U. S. A.), "Apparatus for Dropping Cuts of Augers and Auger Bits," (Extension of Patent No. 3993), 6th September, 1879.

No. 10,425. J. J. Thornycroft, Chiswick, England, "Propeller," (Extension of Patent No. 3968), 6th September, 1879.

No. 10,426. J. A. Quesnel, Arthabaskaville, Que., "Railway Nut Lock," 6th September, 1879.

No. 10,427. E. Lavigne, Quebec, Que., "Swing," (Extension of Patent No. 37), 8th September, 1879.

No. 10,428. C. C. Holton, (Assignee of E. G. Goad), Chicago, Ill., U. S. A., "Steam Generating and Heating Device for Boilers," 8th September, 1879.

No. 10,429. J. C. Covert, Troy, N. Y., U. S. A., "Rope Clamp," 8th September, 1879.

No. 10,430. O. H. Goodwin, San Francisco, Cal., U. S. A., "Music Leaf Turner," 8th September, 1879.

No. 10,431. W. S. Wilson, Sunderland, England, "Galvanic Cells or Batteries," 8th September, 1879.

No. 10,432. A. P. Gotham, Chicago, Ill., U. S. A., "Artificial Fuel," 8th September, 1879.

No. 10,433. E. F. Pfeuger, Akron, Ohio, U. S. A., "Drip Basins for Barrels, &c.," 8th September, 1879.

No. 10,434. C. Friedeborn, Clare, Mich., U. S. A., "Churn Dasher," 8th September, 1879.

No. 10,435. H. Doetsch, London, England, "Process for Extracting Copper from its Ore," 8th September, 1879.

No. 10,436. H. Doetsch, London, England, "Process for Extracting Copper from its Ore," 8th September, 1879.

No. 10,437. R. Hay, Mineral Point, Wis., U. S. A., "Draw Bar for Locomotive Tenders," 10th September, 1879.

No. 10,438. A. Burgess, Owego, N. Y., U. S. A., "Magazine Fire Arm," 10th September, 1879.

No. 10,439. J. Moreau, Jr., Windsor Mills, Que., "Dumb Stove," 10th September, 1879.

No. 10,440. T. B. & T. R. Jordan, London, England, "Pneumatic Hand Power Rock Drill," 10th September, 1879.

No. 10,441. F. Brown, Haverhill, Mass., U. S. A., "Valve," 10th September, 1879.

No. 10,442. A. Burgess, Owego, N. Y., U. S. A., "Magazine Gun," 10th September, 1879.

No. 10,443. M. Covel, Chicago, Ill., U. S. A., "Saw Sharpening Machine," 12th September, 1879.

No. 10,444. E. Prescott, Hampton Falls, N. H., and G. W. Gregory, Boston, Mass., U. S. A., "Carriage Jack," 12th September, 1879.

No. 10,445. J. W. D. McDonald, Banbridge, England, "Folding Boat," 12th September, 1879.

No. 10,446. G. Bischof, London, England, "Process for Preserving Butter, &c.," 12th September, 1879.

No. 10,447. T. J. Clark, J. Forrest, and J. G. Short, Woodstock, Ont., (Assignees of G. W. Allen, Creston, Ill., U. S. A.), "Barbed Wire Fence," 12th September, 1879.

No. 10,448. W. B. Mountney, Chicago, Ill., U. S. A., "Diaphragm Meter," 12th September, 1879.

No. 10,449. D. W. Bovee, Richland Centre, Wis., U. S. A., "Hay Rake and Loader," 12th September, 1879.

No. 10,450. P. Arbagast and T. J. McTigue, Pittsburgh, Penn., U. S. A., "Underground Telegraph," 12th September, 1879.

No. 10,451. A. T. Cross, Providence, R. I., U. S. A., "Stylographic Fountain Pen," 12th September, 1879.

No. 10,452. A. F. Shafer, London, Ont., "Land Roller," (Extension of Patent No. 3,848), 15th September, 1879.

No. 10,453. A. Edwards, Philadelphia, Penn., U. S. A., "Sewer Gas Seal Joint," 15th September, 1879.

No. 10,454. J. B. Burland, Montreal, Que. (Assignee of C. J. Tinnerbalm, Brooklyn, N. Y., U. S. A.), "Hair Renovating Compound," 15th September, 1879.

No. 10,455. W. D. C. Pattyson and W. Farwell, Sherbrooke, Que., "Vehicle Brake," 15th September, 1879.



- No. 10,456. W. Milner, Strathroy, Ont., "Sash Balance," 15th September, 1879.
- No. 10,457. J. Burns and W. H. Baldwin, Ottawa, Ont., "Insect Destroying Machine," 16th September, 1879.
- No. 10,458. P. E. Jay, New York, U. S. A., "Fly Wheel for Engine," 17th September, 1879.
- No. 10,459. L. Woodruff, Ellensburg, Oregon, U. S. A., "Method of Curling Fish," 18th September, 1879.
- No. 10,460. F. Snyder, Berlin, Ont., "Fountain Flower Stand," 18th September, 1879.
- No. 10,461. W. G. Budlong, Providence, R. I., U. S. A., "Boot and Shoe Pegging Machine," 18th September, 1879.
- No. 10,462. T. P. White, Ashtabula, Ohio, U. S. A., "Door Fastening Device," 18th September, 1879.
- No. 10,463. J. D. Leach, Penobscot Me., U. S. A., "Broom Holder," 18th September, 1879.
- No. 10,464. W. R. Walker, Roncoverte, Ver., U. S. A., "Churn Dasher," 18th September, 1879.
- No. 10,465. O. S. Gutzerson, Buffalo, N. Y., U. S. A., "School Desk and Seat," 19th September, 1879.
- No. 10,466. H. K. Clarke, St. John, Que., "Hosiery," 20th September, 1879.
- No. 10,467. N. Hayden and E. M. Skinner, Chicago, Ill., U. S. A., "Needle Bar for Sewing Machine," 20th September, 1879.
- No. 10,468. M. H. Fuhaki, Philadelphia, Penn., U. S. A., "Combined Box and Sample Card," 20th September, 1879.
- No. 10,469. N. C. Peterson, Sarnia, Ont., "Shut off and Car-ten Hydrant with Surface Box," 20th September, 1879.
- No. 10,470. D. Lockhead, Hochelaga, Que., "Potato Bug Poison Distributor," 20th September, 1879.
- No. 10,471. W. H. Laurie, Montreal, Que., "Mowing and Reaping Machine," 22nd September, 1879.
- No. 10,472. J. J. Van Wageningen, Syracuse and J. Butler, Oswego, N. Y., U. S. A., "Locomotive Pilot and Snow Plough," 22nd September, 1879.
- No. 10,473. S. J. Keim, Catawugus, Penn., U. S. A., "Car Coupling," 22nd September, 1879.
- No. 10,474. L. A. Aspinwall, Albany, N. Y., U. S. A., "Potato Digger," 22nd September, 1879.
- No. 10,475. C. Raymond, Guelph, Ont., "Sewing Machine," 22nd September, 1879.
- No. 10,476. N. H. Shaw, Bedford, Que., "Drilling, Turning and Thread Cutting Machine," 22nd September, 1879.
- No. 10,477. E. Denehey, Yarmouth, N. S., "Weather Strip," 22nd September, 1879.
- No. 10,478. D. W. Norris, Elgin, Ill., U. S. A., "Incased Glass Vessels," 24th September, 1879.
- No. 10,479. G. Sireanor and E. W. Beuthner, Montreal, Que., "Mowing and Reaping Machine," 24th September, 1879.
- No. 10,480. A. E. McDonald and A. G. Brady, New York, U. S. A., "Railway Switch," 24th September, 1879.
- No. 10,481. E. R. Edmund (Assignee of W. H. H. Sisum), Brooklyn, N. Y., U. S. A., "Car Truck," 24th September, 1879.

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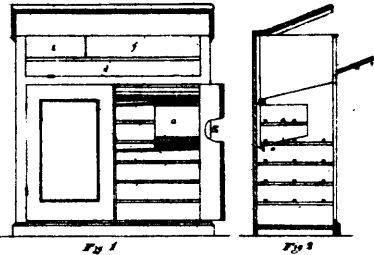
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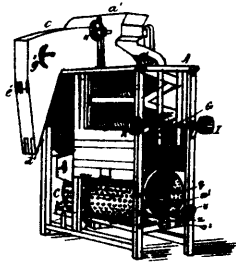
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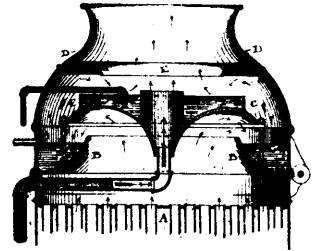
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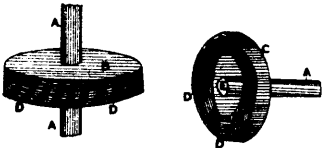
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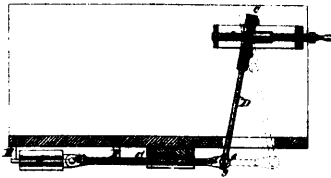
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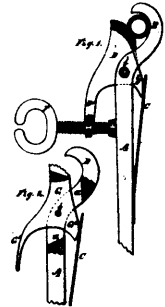
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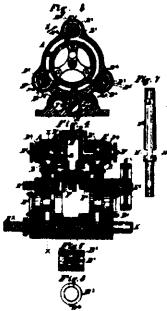
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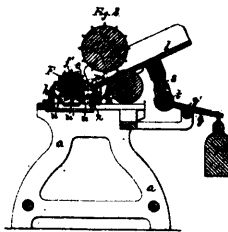
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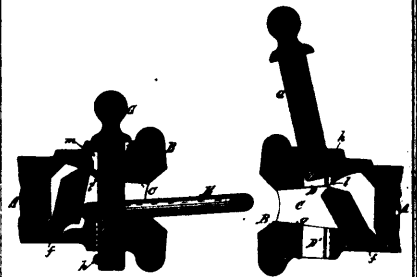
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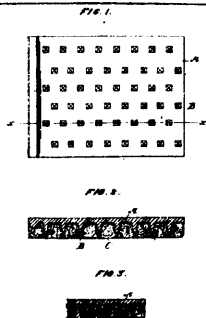
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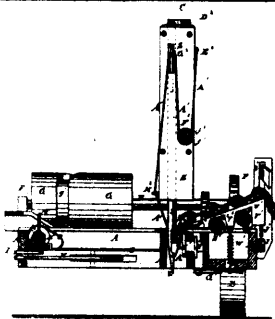
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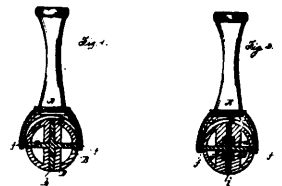
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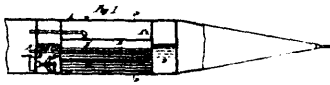
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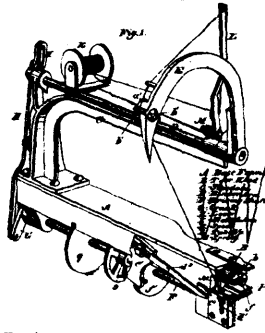
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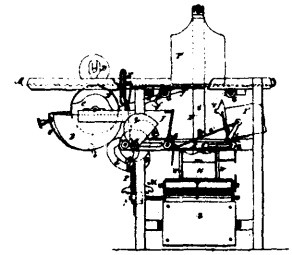
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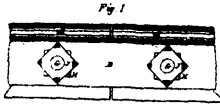
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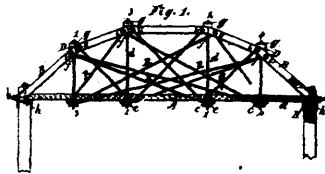
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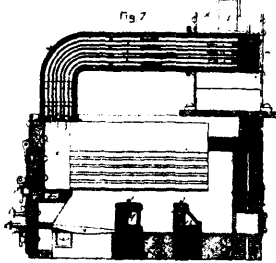
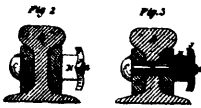
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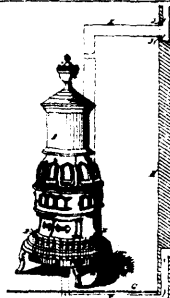
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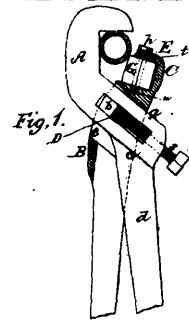
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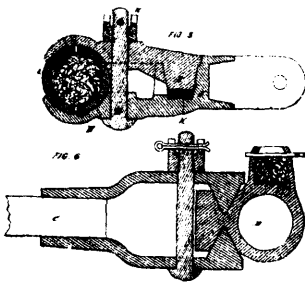
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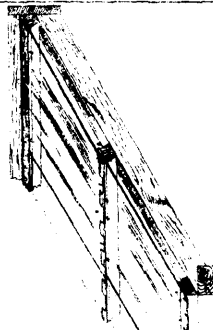
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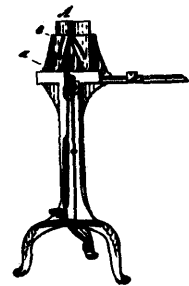
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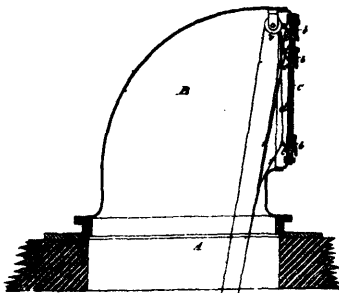
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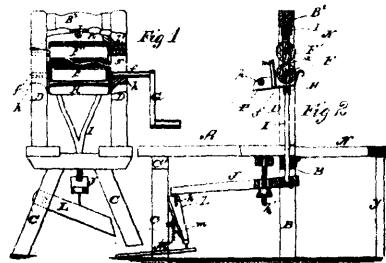
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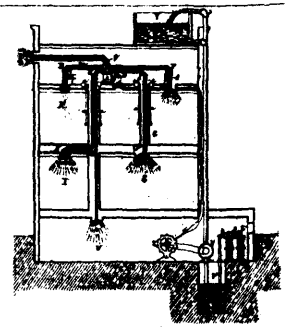
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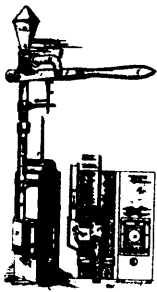
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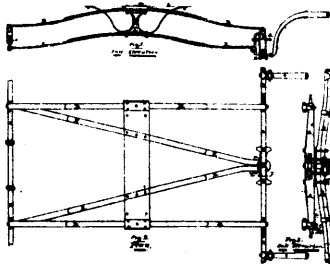
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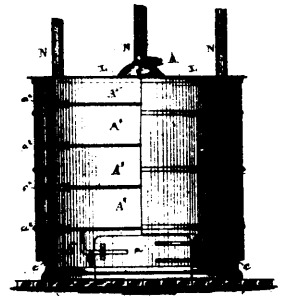
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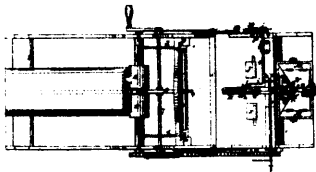
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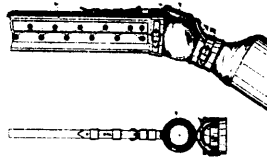
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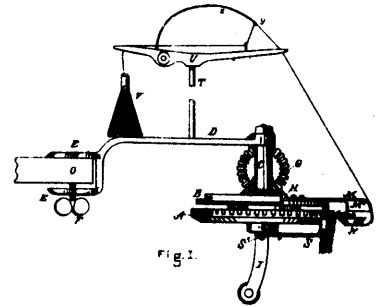
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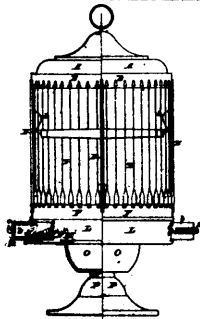
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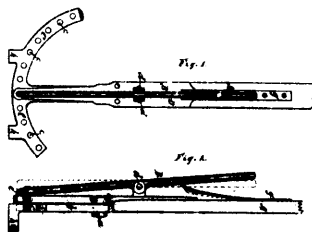
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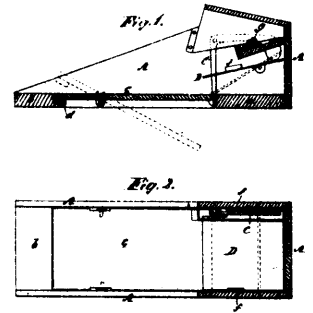
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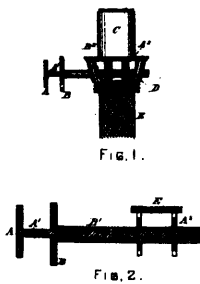
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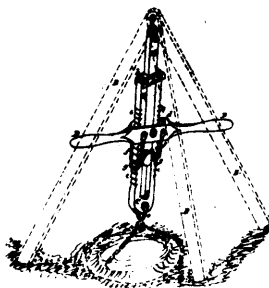
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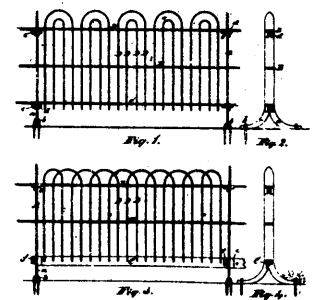
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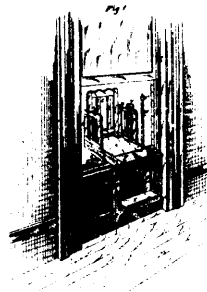
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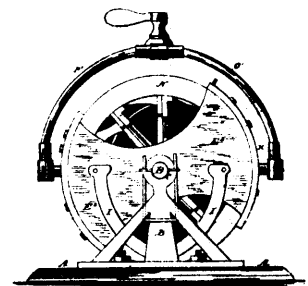
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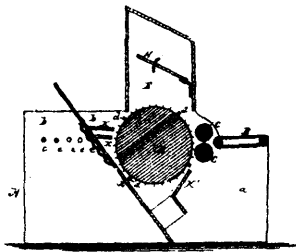
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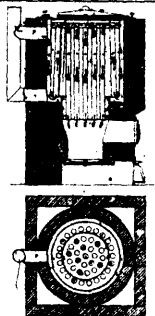
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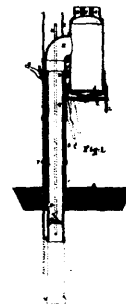
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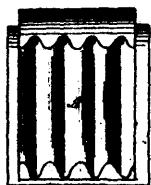


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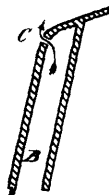
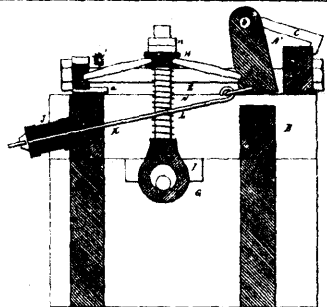
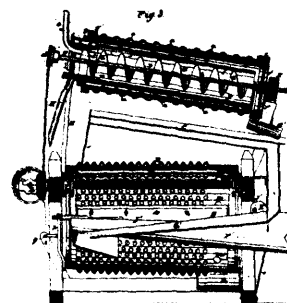


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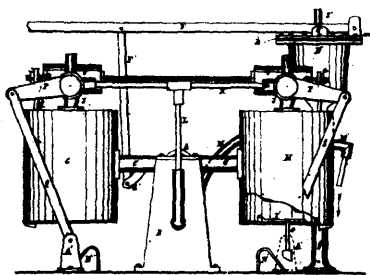
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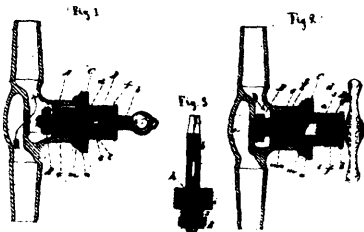
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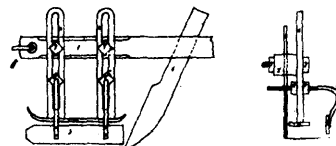
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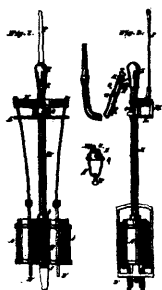
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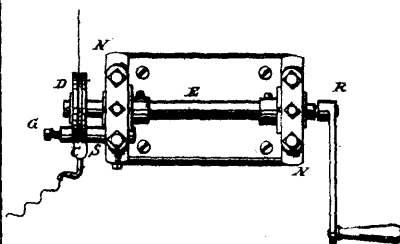
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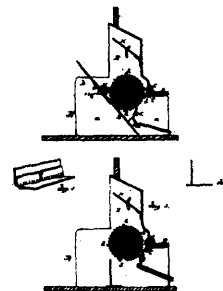
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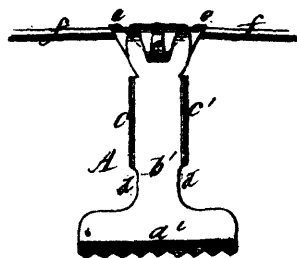
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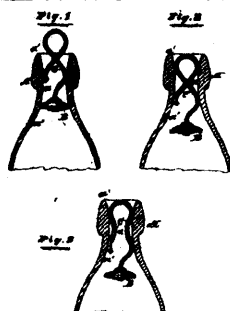
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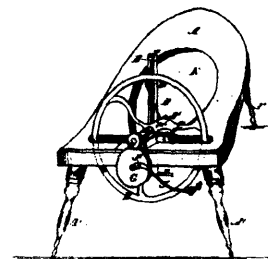
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