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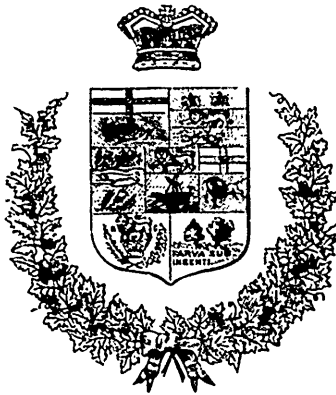
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INVENTIONS PATENTED.

No. 12,020. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

Leonidas Gray and Albert Y. Gray, Middletown Springs, Vt., U. S., 24th November, 1880; for 5 years.

Claim.—1st. In a thrashing cylinder, the combination of the flanged metallic heads *b b*, the shell or plate *B* and wooden lining *D*. 2nd. In combination with the metal plate or shell *B* and wooden lining *D*, the teeth or spikes *E* having shoulders *e* with threaded shanks *e*, and nuts *e*. 3rd. The open heads *b b*, metallic shell *B*, wooden lining or backing *D* and teeth formed with shoulders *e*, and screw shanks *e*. 4th. The concave composed of the thick metallic plate *C* with wooden backing *C*, and teeth *E*. 5th. The wrench to be used in connection with the thrashing machine consisting of a reversible head or roller *F* having angular bore or socket *f* extending through the same, and toothed periphery or annular ratchet *f* with helves *H H* which afford bearings for said roller, and a concealed spring slide or dog *J* and handle *G*.

No. 12,021. Improvements on Car Couplings. (*Perfectionnements aux attelages des chars.*)

Robert E. Pogue, Quincy, Ky., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The levers *C* and yokes *D E*, in combination with the draw head *A* and cap hammer *B*. 2nd. The latch *H* and spring *J*, in combination with the draw head *A*, cap hammer *B* provided with catch *K*, yoke *G*, levers *C* and yokes *D E*.

No. 12,022. Apparatus for Resizing, Uncapping and Recapping Cartridges. (*Appareil à recalibrer les cartouches, en enlever les vieille capsules et en poser de fraîches.*)

Ricard Morris, Blackheath, Eng., 24th November, 1880; for 5 years.

Claim.—1st. The die *A*, cover *B* and mandrel *C* for restoring the cartridge case to its proper size and shape. 2nd. In combination with the mandrel *C*, the punch *E* for removing the percussion cap from the fired cartridge case. 3rd. In combination with the die *A* and cover *B*, and recapping stud *B*, inserted in the cap *B*, for inserting a fresh percussion cap in the cartridge case, after the fired cap has been removed. 4th. The plunger *F* acting in conjunction with water or other liquid, for expelling the cap from the cartridge case by hydraulic pressure. 5th. The apparatus *G* for uncapping a number of cartridge cases by hydraulic pressure, and for recapping and resizing the same. 6th. The apparatus consisting mainly of the die *H*, lever *K*, capping lever *L* and extractor *M N*, for recapping charged cartridges.

No. 12,023. Improvements on Lanterns. (*Perfectionnements aux lanternes.*)

Charles T. Ham, Rochester, N. Y., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination, with the air chamber *E* provided with the throats *a a*, of the wings *f f* extending out laterally in an angular direction, serving to direct and concentrate the direct currents into the air chamber and to deflect and throw off the counter currents. 2nd. The combination of the air chamber *E* provided with the throats *a a*, the wings *f f* extending laterally from the same, the vertical partition *b* separating the throats, and the horizontal rim or disk *c* arranged centrally around the chamber.

No. 12,024. Improvements on the Manufacture of Coffee. (*Perfectionnements dans la préparation du café.*)

Alexander P. Ashbourne, Boston, Mass., U. S., 24th November, 1880; for 5 years.

Claim.—A process for preparing coffee for domestic use, by first soaking in a solution mixture of brandy, sugar, butter, eggs and water, in the proportions specified, the berries to be roasted, and afterwards drying the same, then putting them in the roaster, and the second part of the solution is added while roasting. The solution having the effect of closing the pores of the berries, increases their weight and retains the aroma, retains also its other evaporating properties, keeps in the volatile oil and caffeic acid or astrigent property, and thus keeps its medical effects on the human system.

No. 12,025. Improvements in Canal Boats. (*Perfectionnements aux bateaux pour les canaux.*)

John O. Smith, Savannah, Ga., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The boat-hull tapered at its end to a horizontal edge and having perpendicular side walls *a a*, and a channel *c* opening at its front and throughout its length into the water, and terminating short of the length of the boat, in combination with the sprocket wheels *B B* located in the forward part of channel *c*, and the endless chain passing around said wheels. 2nd. In combination with the boat-hull and the sprocket wheels, the propelling chain consisting of links *e* formed of inclined buckets and side bars of equal depth, and cross rods *g* for coupling the same.

No. 12,026. Improvement in Treating Pelts. (*Perfectionnement dans le traitement des peaux.*)

Henry A. House and Samuel D. Castle, Bridgeport, Ct., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The method and means described of extracting the master hairs of pelts. 2nd. The combination of a carrier adapted to hold and carry the pelt, and a picker provided with jaws and combined with operating mechanism, whereby the jaws are caused to gripe and withdraw the master hairs. 3rd. The combination of a picker and a heated tube or case for supporting the pelt. 4th. The combination of a pelt carrier, picker and bar or table adjustable below the picker. 5th. The combination of the carrier, picker, swinging frame *E*, yoke frame *F*, hollow bar *g* and device for adjusting the frame *F*. 6th. The combination of the rock bars *J J*, brackets *m*, blade *h*, bar *i* connected to arms pivoted to the brackets *m*, and rods *n* connected to arms *p* of the shaft *J*. 7th. The combination of the picker with a carriage *l* supporting the same movably upon the jaw operating shafts. 8th. The combination, with the carrier and picker, of appliances for setting the same at different degrees apart. 9th. The mode of removing master hairs from pelts, the same consisting in, first heating the pelt adjacent to the roots of the master hairs, and then applying force to withdraw the latter.

No. 12,027. Apparatus for Showing the Aeration of Water. (*Appareil pour montrer l'aériorification de l'eau.*)

Lucius C. Warner, Crown Point, Ind., U. S., 24th November, 1880; for 5 years.

Claim.—An experimental pump casing composed of glass and wood combined with a pump or endless water elevator adapted to hold a mimic well or cistern up to view, so that the process of aerating water may be illustrated and witnessed above ground.

No. 12,028. Distilling Apparatus. (*Appareil de distillation.*)

William Watt, (Assignee of Joseph W. Reford,) New York, U. S., 24th November, 1880; (Extension of Patent No. 5,420).

No. 12,029. Improvements on Vehicle Gears. (*Perfectionnements aux trains des voitures.*)

Harry S. Clark, Towanda, Pa., U. S., 24th November, 1880; (Extension of Patent No. 5,406).

No. 12,030. Improvements on Steam Radiators. (*Perfectionnements aux calorifères.*)

Caleb C. Walworth, Boston, Mass., U. S., 27th November, 1880; for 5 years.

Claim.—1st. The base and its solid sleeves, combined with the loop pipes and their screw rods connected therewith, and with means to draw or force the ends of the pipes against the base about the passages 4 5 therein. 2nd. The cast metal loop pipe provided with two independent openings 2 3 and having solid sleeves c combined with a base provided with two corresponding openings 4 5, a packing between them, a screw rod extended through the solid sleeve, and a nut to draw the end of the loop pipe against the packing, between it and the base, sufficiently tight to make a steam joint.

No. 12,031. Improvements in Force Pumps. (*Perfectionnements dans les pompes foulantes.*)

George W. Simons and Robert H. Gebott, St. Catharines, Ont., 27th November, 1880; for 5 years.

Claim.—The combination, in a pump having plungers A B and valves C D E F, of the iron tube O and plugs L M.

No. 12,032. Optimeter. (*Optimètre.*)

Henry G. Levetus, Montreal, Que., (Assignee of Abraham Mayer, New York, U. S.), 27th November, 1880; for 5 years.

Claim.—1st. Endless belt having, attached thereto, frames carrying the several lenses, and which belts are mounted on shafts by means of which they can be rotated, to permit the observer to look through the several lenses successively at a standard card, on an adjustable arm of the apparatus. 2nd. The lid of the case constructed with a reflector O. 3rd. The combination, with the case, of a pivoted arm provided with slide and clamps. 4th. The combination, with an endless belt, of the lens frames A and the shafts D F. 5th. The combination, with the inner frame F E, carrying shafts and endless belt, of the case H and provided with apparatus and slides h.

No. 12,033. Improvements on Paper Bags. (*Perfectionnements aux sacs de papier.*)

Alfred Adams, Chagrin Falls, Ohio, U. S., 27th November, 1880; for 15 years.

Claim.—A satchel-bottomed paper bag constructed with bottom flaps convex on their ends next the sides of the bag, and their pasting surface thus elongated.

No. 12,034. Improvements on Window Bolts. (*Perfectionnements aux targettes des fenêtres.*)

Pierre Houille, Montreal, Que., 27th November, 1880; for 5 years.

Résumé.—La targette A retenue et guidée par des vis B B passant à travers la mortaise a a t.

No. 12,035. Anti-Frost Attachment for Store Windows. (*Disposition à anti-givre pour les vitrines des magasins.*)

Joseph W. Chivrell, Toronto, Ont., 27th November, 1880; for 5 years.

Claim.—The combination, with a plate glass window A, of a piece of glass B separated from A by a strip of rubber C, or its equivalent, and forming an air tight compartment between the two panes. 2nd. The glass B separated from the window A, in combination with the cord E and bridge F.

No. 12,036. Improvements in Ice Making Machinery. (*Perfectionnements aux appareils à faire la glace.*)

Alexander T. Ballantine, Portland, Me., U. S., 27th November, 1880; for 5 years.

Claim.—1st. The combination, in a gas compressor, of a piston rod common to the gas and steam cylinders and a steam piston, whose follower is provided with bearings N, located within a continuation of the cylinder and connected at each side of the cylinder with the crank shaft. 2nd. The combination, in a gas compressor, of a cylinder having inlet and outlet ports with a perforated piston, provided with a hollow rod located within a continuation of the cylinder and communicating through the medium of a valve opening with the receiver. 3rd. The combination of the cylinder B having valves ports b₁, with the piston J, tube yoke L and piston rod g. 4th. The combination, with the piston J, tube J and cylinder B having ports b₁ b₂, of the valve cylinder b having a common delivery with the port b₁. 5th. In combination with the cylinder A having piston O, follower N and cylindrical bearing n, the cylinder B having piston J and elongated stuffing box m. 6th. In combination with the piston rod g, the vertical elongated stuffing box m having a stratum of fluid lubric resting upon the gland. 7th. The combination, in a condenser, of a shell for receiving the compressed gas having a number of longitudinal tubes with a series of atomizers for injecting a spray into the said tubes. 8th. The combination, in a condenser, of a shell for receiving the compressed gas having a series of longitudinal tubes, with atomizers, and an outer shell, between which and the first named shell the inlet gas pipes coiled. 9th. The combination of a chambered base, the inlet coil, the outer perforated cylinder, and the inner tubular shell. 10th. The combination, with the chambered base having chamber I provided with pipes opening at different levels, and the atomizers h i, of the tubular shell c. 11th. The combination of the outer shell having walls a a, with the injector pipe located in the neck, the inner tubular shell and inlet pipe. 12th. The combination, with the chambered base having blast pipe f, of the atomizers h i, tubular shell c, coil C and perforated cylinder A. 13th. A condenser consisting of an outer double walled chamber having inlet and outlet for the refrigerant and a pyramidal or tapering inner chamber or mould fitting closely within the former and removable therefrom. 14th. A congealer, consisting of a casing having parallel opposite outer walls and tapering or converging inner walls, and constituting a chamber for the refrigerant, in combination with a mould of a size and shape to fit closely within the said casing and made removable therefrom.

No. 12,037. Improvements on Door Hangers. (*Perfectionnements aux pentures des portes.*)

Dennis F. Van Liew, Aurora, Ill., (Assignee of Alexander N. Monteer, Kansas, Mo.,) U. S., 27th November, 1880; for 10 years.

Claim.—1st. In combination with the rail B, the metallic hanger A having a flange or flanges a and recess b to receive the ball C. 2nd. The combination, with the ball C, of the strap D for retaining the ball in place.

No. 12,038. Improvements on Steam Washers. (*Perfectionnements aux laveuses à la vapeur.*)

Etienne D. Colletet, Montreal, Que., 27th November, 1880; for 5 years.

Claim.—The introduction of the side slip c.

No. 12,039. Improvements in Hide Un-hairing Machines. (*Perfectionnements aux machines à débarrasser les peaux.*)

James W. McDonald, Woburn, Mass., U. S., 27th November, 1880; for 5 years.

Claim.—1st. The combination of the rollers I L with a feed mechanism. 2nd. The combination of the rollers I L with the rollers P O. 3rd. The combination of the rollers I L P O provided with axle boxes, with levers S and treadles S₂. 4th. The roller O provided with grooves O₄, in combination with the roller P, also in combination with rollers I L.

No. 12,040. Improvements on Harness Cruppers. (*Perfectionnements aux croupières des harnais.*)

Cyrus Tobias, Class O. Collmann and Esrom Meyer, Freeport, Ill., U. S.; 27th November, 1880; for 5 years.

Claim.—1st. A harness crupper made of hollow metal. 2nd. The hollow metal crupper and attaching straps combined. 3rd. The hollow sheet metal crupper A, having attaching straps B B' secured in the open ends a a by rivets or eyelets.

No. 12,041. Improvements on Sulky Weeding Machines. (*Perfectionnements aux extirpateurs à siège.*)

Thomas Turnbull and Alexander Turnbull, Camilla, Ont., 27th November, 1880; for 15 years.

Claim.—1st. The combination, with a wheeled frame, of the revolving toothed reel and longitudinal bars moving to clear the teeth of weeds. 2nd. The combination, with the revolving toothed reel and clearer bars, of the concentric rings placed eccentrically to the shaft of the reel, and connected by pivotal arms to the clearer bars, for their operation.

No. 12,042. Improvements on Rat Traps. (*Perfectionnements aux ratières.*)

John Thompson, Montreal, Que., 27th November, 1880; for 5 years.

Claim. The combination of the pawl consisting of the eye H, hook I, and loop K, with the eye F and spring D.

No. 12,043. Process of Constructing Subaqueous Tunnels, &c. (*Procédé pour construire les tunnels, &c., sous marins.*)

Howard A. Carson, Boston, Mass., U. S., 27th November, 1880; for 10 years.

Claim.—The method of building tunnels, conduits and similar structures in ground covered by water, by pneumatic caisson, which consists in sinking said caisson only so low that its lower edge rests on the bottom of the body of water passed under, and subjecting the air therein to sufficient pressure to prevent the entrance of water under said caisson's lower edge, the operation of excavation being carried on without further sinking of the caisson, and consecutively placing said caisson so that its successive positions lap each other.

No. 12,044. Improvements on Bee-Hives. (*Perfectionnements aux ruches.*)

Henry P. Attwater, Chatham, Ont., 29th November, 1880; for 5 years.

Claim.—1st. The combination of bottom part A, top part B, supplementary top D, top C, common to both upper and lower parts of hive, grating E, moth strip H and graduating slide N. 2nd. The combination of moth strip H with bottom part a of a bee-hive. 3rd. The combination of graduating slide N, in connection with moth strip H.

No. 12,045. Folding Washing Bench. (*Banc de lavage à brise.*)

George W. Holton, (Assignee of Manly S. Rawson), Jamaica, Vt., U. S., 29th November, 1880; for 5 years.

Claim.—The four legs A A, having bevelled inner corners a a, and one bevelled at two different angles, as shown at C, in combination with the centre block A and bolts B B.

No. 12,046. Improvements on Clocks. (*Perfectionnements aux horloges.*)

Frederick A. Lane, New Haven, Ct., U. S., 29th November, 1880, for 5 years.

Claim.—1st. As a means for supporting the clock movement, the combination of the back plate A, intermediate plate B and front plate C, set face, face and parallel with each other, and with their tops on the same level, whereby the train is brought nearer the main wheel and the clock rendered more compact. 2nd. As a means for su, porting the train G over or near the main wheel F, the intermediate plate B of equal height with the back plate A, said plate constituting a front plate for the main wheel arbor, and a back

plate for all gearing beyond the centre. 3rd. The combination of the clock movement with the parallel and equally elevated plates A B C. 4th. As a means for supporting the main spring and wheel E F independently of the tram, the frame formed by the plates A B set and secured parallel and face to face. 5th. A clock consisting of the back plate A and intermediate plate B, the actuating mechanism being supported between the lower parts thereof in combination with the short front plate C attached to the upper part of plate B, the train being arranged between said plates B C, and connected to the actuating mechanism by arbor d, supported in plates A C, carrying pinion h gearing directly with the main wheel.

No. 12,047. Process for Purifying Fats and Oils. (*Procédé pour purifier les corps gras*).

Alexander W. Winter, San Francisco, Cal., U.S., 29th November, 1880; for 5 years.

Claim.—The process of treating animal fats and oils, and certain vegetable oils, by reducing them to a liquid condition, mixing therewith pulverized fuller's earth, and then separating the earth from the oil or fat.

No. 12,048. Improvements on Smoke Stacks for Steam Boilers. (*Perfectionnements aux tuyaux des chaudières à vapeur*).

Thomas A. Stevens, London, Ont., 29th November, 1880; for 5 years.

Claim.—1st. Two or more semi-circular wings D, set within a smoke stack A, for the purpose of forming a spark arrester. 2nd. Two or more semi-circular wings D, pivoted within a smoke stack A, on the crank rods d, and connected together by rods, in combination with the locking rod E.

No. 12,049. Means for Measuring the amount of Electrical Current flowing through a Circuit. (*Moyen de mesurer la somme de courant électrique qui passe par un circuit*).

Thomas A. Edison, Menlo Park, N.J., U.S., 29th November, 1880; for 15 years.

Claim.—1st. An electro depositing cell in which each plate becomes alternately anode and cathode. 2nd. The method of measuring a current of electricity, consisting in causing a definite portion to pass through a depositing cell containing balanced plate or plates, the over balancing of the plates causing a registration and a change of the anode and cathode relation of the plates successively. 3rd. The combination of a decomposing cell, balanced polar plates therein, and a registering apparatus controlled by the over-loading of either plate. 4th. The combination of a decomposing cell, balanced polar plates therein, and a reverser, reversing the direction of the current through the cell and controlled by the over-loading of either plate. 5th. The combination of a decomposing cell, balanced polar plates therein, and registering apparatus, and means for reversing the direction of the current through the cell, the register and reverse being controlled by the over-loading of either plate. 6th. The combination with two magnets of a common armature lever playing between them, and a contact device operated by the lever, the lever, on its attraction by either magnet, causing a break in the circuit of the magnet attracting it, and closing a break in the circuit of the other magnet. 7th. The combination of an armature lever playing between two magnets, operating as described, a reverser actuated by the armature lever on its movement in either direction.

No. 12,050. Improvements on making Plug Tobacco. (*Perfectionnements dans la préparation du tabac en tablettes*).

Warwick W. Wood, Winston, N.C., U.S., 29th November, 1880; for 15 years.

Claim.—1st. A compound mould for forming plugs of chewing tobacco, composed of an outer enclosing band or rim D, a central circular or analogous shaped band F, and one or more division walls E, radiating towards the centre, placed and dividing the space between said bands into separate compartments E¹ G¹, combined with a die or follower composed of separate parts H J, adapted to fit the different compartments E¹ G¹ of the mould. 2nd. The frame or mould E¹, the outer wall e, made of greater length than the inner wall e¹, and the two outer walls e² connected by tapering walls e³, whereby the moulds may be grouped in numbers around a common centre, to economize space and facilitate the operation of forming plugs of tobacco. 3rd. The die or follower A having a series of radial dies H, and central distinct die J. 4th. The mill B separated by radial plates into compartments, and having a central compartment G¹, adapted to receive the dies H and J of the follower A. 5th. The combination of a die or follower A, having a series of radial dies H and central distinct die J, with a compound mould B having radial compartments E¹ and a central compartment G¹, adapted to receive such dies H J. 6th. The plug of tobacco 4c formed by the mill, of a truncated triangular cone-shape. 7th. Tobacco formed into plugs of equal thickness throughout, one plug in each layer being circular, and the others tapering from base to point so as to surround said circular plug.

No. 12,051. Improvements on Machines for Boring Wood Pipes. (*Perfectionnements aux machines à percer les tuyaux en bois*).

Pardon T. Perkins, Oswego, N.Y., U.S., 29th November, 1880; for 5 years.

Claim.—1st. A wood pipe boring machine provided with a head block and feeding device for the log carriage, said feeding device being arranged to be automatically tripped or stopped by the motion of the log carriage. 2nd. A wood pipe boring machine having, in combination with a head block, a feeding apparatus for the log carriage, by means of which said carriage may be moved back from the head block at a more rapid rate than that during the advance feed motion. 3rd. A wood pipe boring machine, having a head block B, provided with removable journal brackets A¹ D¹, for the purpose of accommodating either a Wyckoff or core auger. 4th. A head block B, for a wood pipe boring machine, having four journal boxes in line. 5th. A wood pipe boring machine, having a head block B, with expanded risers C¹, provided with openings, to receive journal boxes of different internal diameters.

No. 12,052. Improvements on Ecraseurs.

(*Perfectionnements aux écraseurs*).

William H. Beach, Haverstockhill, Eng., 29th November, 1880; for 5 years.

Claim.—1st. The combination, with the screw spindle, of gearing whereby a differential motion is transmitted from the handle to the screw spindle. 2nd. The combination, with the screw spindle, of an adjustable handle change gearing for transmitting differential motion from the operating handle to the screw spindle, and a clutch for transmitting uniform motion direct from the handle to the screw spindle. 3rd. The combination, with the screw spindle and adjustable handle of change gear, arranged and combined to transmit at will in the same instrument, a motion to the screw spindle, either faster or slower than that of the handle. 4th. The combination, with the screw spindle, the change gear and the adjustable handle, of the latch arranged to engage in grooves in the handle spindle. 5th. The combination, with the screw spindle, the adjustable handle and the change gear, of the spring within the handle. 6th. The combination, with the screw spindle, having a plain fast at its upper and lower ends, and with the nut travelling on said screw, of a spring or springs to lead the nut back on the screw thread. 7th. The cutter attached to the chain, or its equivalent, and operating in combination with the slot in the head of the instrument. 8th. The attachment of two parts of the chain to diametrically opposite sides of the nut. 9th. The combination, with the screw nut and chain, of a tubular sheath, enclosing the chain as well as the screw and nut, and serving to prevent the nut turning. 10th. The combination, with an ecraseur, of the sliding forked device.

No. 12,053. Improvements on Cattle Elevators. (*Perfectionnements aux monte-bestiaux*).

Henry P. Kirkham, New York, U. S., 29th November, 1880; for 5 years.

Claim.—1st. The combination of a sliding platform G, placed between uprights H, having cross pieces B permanently fixed to their lower ends, and adjustable bars C D connected to said cross pieces by sliding joints and uniting said cross pieces together, and a removably fixed beam E secured to the upper ends of the uprights by notches and tenons, and pins f. 2nd. Uprights removably fixed to each other, in combination with a guard constructed to be adjusted in front, of either end of a sliding platform. 3rd. An adjustable guard F, in combination with eye bolts g and catches A.

No. 12,054. Improvements on Door Knobs.

(*Perfectionnements aux boutons des portes*).

Charles A. Pettet, Belleville, Ont., 29th November, 1880; for 5 years.

Claim.—1st. In combination with a door lock knob or handle, the shank E, formed in two longitudinal pieces, having a corrugated socket and a dovetail and eccentric form cut out end to allow a nut F, having an eccentric bore, to clasp the ends of the shank together. 2nd. In combination with the knob or handle of a door lock, the eccentric bored nut F, the corrugated spindle S, and the washer or rose R, having a boss shaped face and counter-sunk socket to receive the nut, adapted to, and in combination with, the shank E.

No. 12,055. Improvements on Wood Planing Machines. (*Perfectionnements aux machines à raboter le bois*).

Samuel S. Hazeland, St. Sampson's, Eng., 29th November, 1880; for 5 years.

Claim.—1st. The combination, with a planing machine fitted with a fixed knife or knives, of an elastic pressing and feeding roller or rollers. 2nd. The combination with a planing machine fitted with a fixed knife or knives and an elastic pressing and feeding roller or rollers, of an adjustable frame or table for supporting the wood and varying its inclination.

No. 12,056. Improvements on Window Blinds.

(*Perfectionnements aux persiennes*).

Joseph H. Reury, Honesdale, Pa., U. S., 29th November, 1880; for 5 years.

Claim.—The plate D having the recess h, the connecting rod E, the pin d working in the slot a in plate D, and the spring g, the device being adapted to lock the slats in a close position and to hold them at any angle when open by friction.

No. 12,057. Improvements on Stop Watches.

(*Perfectionnements aux montres à repos*).

Henry A. Lugin and Prosper Nordman, New York, U. S., 1st December, 1880; for 5 years.

Claim.—1st. The combination of a toothed wheel on the arbor of the second hand and an intermediate double bevelled transmitting pinion, with a toothed wheel on the arbor of the quarter second hand, and with a lever and spring devices for throwing the toothed wheel of the quarter second hand in or out of gear with the transmitting pinion. 2nd. The combination of the hollow arbor of the quarter second hand passing through the hollow arbor of the minute hand, and being connected thereto at the top of the movement, with transmitting gearing and mechanism for throwing the hollow arbor in or out of gear therewith. 3rd. The combination of the hollow arbor of the minute hand carrying a disk and split minute hand, with a stop lever and shifting mechanism, working jointly with the shifting mechanism of the quarter second hand.

No. 12,058. Improvements on Hand Trucks.

(*Perfectionnements aux camions à bras*).

Edward J. Leyburn, Fredericksburg, Va., U. S., 1st December, 1880; for 5 years.

Claim. 1st.—A truck provided with supporting legs, one end of which are connected with the platform of the truck and with their outer ends free, so that, when the platform is fully elevated, the free ends of the legs will be depressed into a position, whereby said legs will constitute a firm support for the platform and the truck become self-supporting. 2nd. The combination of supporting legs C C having limbs c¹, supporting legs C² C³ having

limbs *f*, platform *A*, axle *e* and wheels *B B*. 3rd. The combination of the shaft *F* provided with chain wheel *g* and flanged rollers *h*, guide rods *i i*, chain or rope *m* and ratchet shaft *l*. 4th. The combination of the platform *A* with supporting legs *C C* which have their forward limbs *t* connected with the forward end of the platform of the truck, and with supporting legs *C C* which have their rear limbs *t* connected with the rear end of the platform of the truck, and each of said legs connected with the axle *e* of the truck. 5th. A hand truck having a load bed or platform *A* which is capable of being elevated upon its foundation support and is provided with a bed upon which to receive a cannon ball or other projectile for ordnance, and from which bed the ball or projectile may be delivered into the mouth of a cannon or other great gun.

No. 12,059. Improvements on Call Bells. (*Perfectionnements aux sonnettes.*)

Francis Blake, Weston, Mass., U. S., 1st December, 1880; for 15 years.

Claim.—1st. A number of synchronously revolving dials controlled by a battery current, but acting automatically, each at its own time, to ring a magneto bell by diverting or grounding through the magneto-bell, a magneto-current generated at a distant office, in combination with an automatic device under control of the operator at the distant office, by which the automatic operation of the dial at the distant office may be made to coincide with the operation of either of the other dials. 2nd. In combination with a battery suitable wires and a magneto-bell, the hand *r*, electro magnet *E*, armature *H* provided with a catch *m*, and dial *D* provided with notch *n*, and plug *r*, the dial or plug forming one electrode, and the hand a second electrode. 3rd. At each of a number of stations on a telephone or telegraph line, in a dial revolved by its own clock-work and provided with two notches or stops located relatively to each other and working in combination with the weighted armature of an electro-magnet, to show at any and all the stations, whether or not the line is in use.

No. 12,060. Improvements on Liquid Measures. (*Perfectionnements aux mesures liquides.*)

Henry E. Marchand, Alleghany, Pa., U. S., 1st December, 1880; for 5 years.

Claim.—1st. The combination, with a measuring chamber, of a substantially cylindrical valve casing connected with said chamber by an inlet and outlet passage, and provided with additional supply and discharge ports, a valve or plug fitting within said casing, and having transverse passages at right angles to each other, which are adapted to alternately connect the inlet of the measuring chamber with the supply port of the valve casing and the outlet of said chamber with the discharge port of the said casing, a float arranged within the measuring chamber and connected with a rock shaft projecting outwardly through the wall thereof, and a lever connecting the outer end of said rock shaft with the valve or plug, whereby, when the measuring chamber becomes properly filled with liquid, the float will rise and the valve or plug will be automatically operated to close the inlet and open the outlet and discharge port of the valve casing, and, as the chamber becomes emptied, said float will fall and the position of the valve will be automatically reversed. 2nd. In combination with the float by which the valve is operated through intermediate mechanism, a sector secured rigidly to the shaft which said float operates, and an adjustable index or pointer secured loosely to said shaft and adapted to be adjusted with respect to the sector in such manner that the projection on the pointer may be caused to trip the lever sooner or later as desired, whereby the quantity of liquid to be measured may be varied. 3rd. In combination with the float sector and lever for operating the valve to change its ports, the alarm and mechanism operated by the mechanism for shifting the valve to sound the alarm and indicate when the ports of the valve are changed. 4th. The combination, with the sector secured to the shaft to which the float is attached, of a rotating dial having curved arms, with which two pins on the sector are adapted to engage, one of said pins striking the lower curved arm on the forward movement of the sector, and the other the upward arm on the backward movement of the sector, whereby the said dial is moved the extent of one arm at each two movements of the sector, to record the quantities of the liquid successively measured. 5th. In combination with the sector and the shaft to which the float is attached, a pointer or index adapted to be adjusted relatively to the float, whereby the lever may be tripped at any desired point to vary the quantity of liquid measured. 6th. The combination, with the receiving casing of a liquid measuring apparatus, of an inlet valve and an outlet valve, a float arranged to operate said valves automatically through intermediate devices for closing said inlet valve and opening said outlet valve, and a device for opening said inlet valve by hand from the outside of the casing, at the commencement of each measurement. 7th. The combination, with the receiving casing of a liquid measuring apparatus, of an inlet valve and an outlet valve, and a float arranged to operate said valves automatically through intermediate devices for closing the former and opening the latter simultaneously, and subsequently closing the latter when a definite predetermined quantity of liquid has been discharged from the casing. 8th. The combination, with the casing *A* provided with the induction nozzle and discharge spout, of the spring inlet valve *C* having a suitably guided stem *c* provided with an arm *D*, the outlet valve *E*, its stem *e* connected with said arm *D*, the dog *H* provided with a shoulder *h* arranged to catch under a suitable stop, a suitable device arranged for operation by the float *O* for disengaging said dog from said stop, and a lever arranged to act upon the arm *D* for depressing the same, and provided with an operating rod leading outside the casing. 9th. The combination, with the casing *A* provided with the induction nozzle and discharge spout, of the spring inlet valve *C* having a suitably guided stem *c* provided with an arm *D*, the outlet valve *E* having the headed stem *e*, the latch *F* mounted on the arm *D* and arranged to take under the head of said stem, the dog *H* provided with a shoulder *h* arranged to catch under a suitable stop, a suitable device arranged for operation by the rising of the float *O* to disengage said dog from said stop, and a device arranged for operation by the falling of the float to disengage the latch *F* from the head of the stem *e* to permit the same to fall. 10th. The combination, with the spring inlet valve *C* having stem *c* secured to an arm *D*, of the float and automatic tripping devices, a lever *I* arranged to operate upon the arm *D*, a rod arranged to operate said lever and leading outside the casing, and a bell arranged within the casing *A* and standing in the rearward path of said lever. 11th. The combination, with the casing, float and automatically measuring valves *C*, *E*, of a registering device arranged upon the outside of the cas-

ing, and an operating lever or arm *S* arranged inside the casing, independently of the float, and having one of its ends in the path of the float, and its other end connected with said registering device. 12th. The combination with the casing and float, of the dial *P*, spindle *Q*, carrying pointer *Q*, ratchet wheel *R* fixed upon the spindle, arms *S* pivoted on said spindle, and the pawl *T* pivoted to said arm and arranged to engage the teeth of the ratchet wheel, and a set screw *U* passed through the free end of the arm *S*, said arm being arranged independently of the float and having its free end in position to be acted upon by the float.

No. 12,061. Improvements on Apparatus for Tapping Steam Fitters. (*Perfectionnements aux appareils à tarauder les appareils à vapeur.*)

Warden King, (Assignee of George Wells,) Montreal, Que., 1st December, 1880; for 5 years.

Claim.—1st. The combination of an ordinary revolving tapping machine with table *A* and vices *K*. 2nd. The portable vices *K* in their construction of plate *L*, projections *M N*, loose piece *O* and screw *R* combined spades cribbed. 3rd. The combination of the portable vices *K* consisting of table *L*, projections *M N*, loose piece *O* and screw *R*, with the table *A* having side strips *H L*. 4th. The combination of the table *A* with the bench plate *T* and, furthermore, in combination with a tapping machine.

No. 12,062. Improvements in Boilers for Heating Water. (*Perfectionnements aux chaudières à chauffer l'eau.*)

Ulric Beaufré, Montreal, Que., 1st December, 1880; for 5 years.

Claim.—1st. In a boiler for heating water for the warming of buildings, the combination of the independent horizontal sections *A B C D*, the inlets *E* and outlets *F* bound together by the bolts *d*, and the cover *G*.

No. 12,063. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

Luther D. Sawyer, (Assignee of Robert Christie,) Hamilton, Ont., 1st December, 1880; for 5 years.

Claim.—1st. In combination with the cast iron frame *A* provided with main shaft bearings *C D*, the bearings *E F* for the intermediate stationary shaft *G* the rounded casing *H* for the intermediate gear, the socket *I* for holding seat spring *J*, the upright guide hole *K* with raised projections around it upper and lower side of frame, the quadrant ratchet teeth *L* cast on the part of the frame covering intermediate gear, the whole forming one single casting. 2nd. The combination of the spur wheel *M* and ratchet teeth *U* cast on the side of arms and hub, the spring block *N* with stud *O* cast on block, the pocket or box *P* for holding ratchet spring block *N* in position cast on main drive wheel *B* the box *Q* with recessed hole for holding spring *R* and stud *O*, the spring *R* for pressing out block *M*, the slipper hand cam wheel *S* on the main shaft *T* and provided with a slotted cam, the whole forming a convenient device for connecting the parts together and governing the movements of putting the machine in and out of gear. 3rd. The combination of the lifting lever *V* with its fulcrum on the stationary shaft *G* and the lever dog *W* engaging in the quadrant ratchet teeth *L* on the main frame *A*. 4th. The arrangement of the spring *V*, lever *V*, dog *W* on the lever, and chain circle *X* the lug *a* with slotted hole *a* cast thereon to receive and hold the dog rod *Z* and dog spring in position, the dog *W* with slotted hole *b* to hold dog rod and spring in place. 5th. The combination of the tilting lever socket *d* with flanged groove *e* and frame *A* to receive the foot rest *c*. 6th. The combination of the tongue *i*, brace *f*, hinge bar *g*, lever *h*, socket *d*, all being connected together. 7th. The rake stand *p*, made in the form shown so as to bring the centre of the rake head nearly on a line with the knives. 8th. The combination of the trip lever *l*, trip lever slide shaft *K*, spring *m*, pin *r*, lug *o*, recess *g*, opening *v*, connecting rod *m*, weighted dog *n*. 9th. In combination with the rake head, the lugs *1, 2, 3, 4* and *5* cast thereon, for tripping the lever *l* to operate the rakes. 10th. The arrangement of elevating the rear position of the table, consisting of the combination of the screw groove *f* in the girth *fu*, and wedge *g*.

No. 12,064. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

William Russell, Dundas, Ont., 1st December, 1880; for 5 years.

Claim.—1st. The combination of table *A*, doors *B C D* and binding attachment *N M*. 2nd. The combination of link motion *O P*, table *A* and binding attachment *N M*. 3rd. The combination of hinges *Q R*, rod *E*, crank *F*, connecting rod *G*, lever *H*, connecting and cam rod *I* and cam *J*.

No. 12,065. Improvements on Dental Plates. (*Perfectionnements aux plaques dentaires.*)

John G. Yemen, Stratford, Ont., 1st December, 1880; for 5 years.

Claim.—The process of preparing valve *C* and then vulcanizing it on plate *A*, and thereby making them in one piece.

No. 12,066. Improvements in Moulds for Casting the Tires of Railway Car Wheels. (*Perfectionnements aux moules pour couler les bandages des roues des chars de chemin de fer.*)

Nathan Washburn, Allston, Mass., U. S., 1st December, 1880; for 5 years.

Claim.—The wedges and wedge backs *g h* containing the conduits *j*, in combination with the interior ring sections *d* and with other suitable mould parts.

No. 12,067. Soap Composition. (*Composé à savon.*)

Benjamin B. Jenkins, Walter's Falls, Ont., 1st December, 1880; for 5 years.

Claim.—An improved washing and toilet soap, composed of caustic soda, tallow, salt, sal soda, unslaked lime, borax, alum, benzine and benzoine, mixed together with water.

No. 12,068. Improvements on Axle Cutters.*(Perfectionnements aux coupleurs à essieux).*

F. D. Butterfield, Derby Line, Vt., U.S., (Assignee of Lewis A. Young, Stanstead, Que.) 1st December, 1880; for 5 years.

Claim.—1st. An axle cutter composed of the frame C A B, in combination with the sliding bar D, provided with the adjustable tool or cutter *h*, the bar D being moved by a hand screw E, the arm B being furnished with a clamp pad K, operated by the thumb screw J. 2nd. The combination of a frame C A B and clamp *j k*, with an adjustable cutter *h* and cutter bar D, whose pressure is regulated by suitable device. 3rd. The combination of the sliding cutter bar D, with an adjustable tool *h* secured as shown. 4th. In combination with an axle cutter, the use of the axle nuts of the vehicle being operated on for causing the cutting tool to impinge upon the part to be cut away. 5th. The combination of the hand screw E, with the sliding bar D and adjustable cutting tool *h*.

No. 12,069. Manufacture of Oxides and Sulphides.*(Fabrication des oxydes et sulfides).*

Thomas Griffiths, (Assignee of Henry Knight), Liverpool, Eng., 1st December, 1880, (Extension of Patent No. 5,482).

No. 12,070. Improvements in Scythe Blades.*(Perfectionnements aux lames des faux).*

Sterling A. Millard, Clayville, N. Y., U. S., 2nd December, 1880; for 10 years.

Claim.—A scythe provided with a longitudinal rib or supplementary back *b*, which has an obtuse angle to the flat cutting portion A and to the flat web *c*, which joins the back proper *a*, said blade being also at a transverse angle to the web.

No. 12,071. Improvements on Moulds for Casting Car Wheels.*(Perfectionnements aux moules pour couler les roues des chars).*

Marcus H. Washburn, Boston, Mass., U.S., 2nd December, 1880; for 5 years.

Claim.—1st. Forming the sprues on the inner side of the tire in the manner described. 2nd. The combination, with a mould A, of the removable hollow keys or conductors D, adapted to deliver the molten metal to the interior of the mould on the inner side thereof, in order that the "sprues" may be formed on the inner side of the tire. 3rd. The combination with the bottom ring *b*, chill ring *c*, and cope *e* of the sectional ring *d*, and the removable hollow keys or conductors D, forming part of the ring *d* and adapted to deliver the molten metal to the mould on the inner side thereof.

No. 12,072. Combined Wheat Separator and Grain Scourer.*(Séparateur à blé et nettoyeur des grains combinés).*

William King, London, Ont., 2nd December, 1880; for 5 years.

Claim.—1st. A case or cylinder R, provided with openings *h h*, and cogs *i i*. 2nd. A grain scourer stone S, constructed of an ordinary stone or wood faced with emery, or any other suitable material. 3rd. The combination of the case L, stones S, shaft B, case R, provided with openings *h h*, cogs *i i*, and cog wheel *j*. 4th. The combination of the pulleys A D E I J, mitre gears *b b* and shafts B C F K. 5th. The combination of a wheat separator and grain scourer.

No. 12,073. Improvements on Harvesting Machines.*(Perfectionnements aux moissonneuses).*

William Russel, Dundas, Ont., 2nd December, 1880; for 5 years.

Claim.—1st. The combination of shaft A, crank B *b*, link *c*, clutch clip D, clutch F, gear wheels G, shaft H, coupling I, wheels J, binding arm shaft K, notch cam L on shaft H, pawl hook, stop pawl M, spiral spring N, guide Q, chain O, lever P, spiral spring R, boxes R₁ R₂ R₃ R₄, joint W. 2nd. The combination of the rollers 1 2 3 4, guard board 5, belt chain or gear driving connection with the frame V T, the mode and place of attaching the binder to main frame of reaping machines on the rear end.

No. 12,074. Improvements on Cutter Bars for Harvesters.*(Perfectionnements aux porte-lames des moissonneuses).*

John Montross, Canastota, N.Y., U.S., 2nd December, 1880; for 5 years.

Claim.—1st. A compound cutter bar consisting of cap *b*, cutters *a a*, with slots and notches therein, and base bar *c*.

No. 12,075. Improvement in Car Wheels.*(Perfectionnement des roues des chars).*

Nathan Washburn, Allston, Mass., U.S., 2nd December, 1880; for 5 years.

Claim.—1st. A cast iron railway car wheel, having its tire of cast metal, composed of cast iron and of wrought or malleable iron, in or about in the proportions specified, and its body of cast iron combined with the tire in and by casting the metal for such body in a mould, and into and against the said tire, at a temperature sufficiently high to cause them to thoroughly unite when in contact.

No. 12,076. Improvements in Car Doors.*(Perfectionnements aux portes des chars).*

William I. Straliff, Altoona, Pa., U.S., 2nd December, 1880; for 5 years.

Claim.—The grain door C provided with the flanged guide *a*, having opening *x*, in combination with the vertical guide D, and the vertical flange guide D having openings *y*, and the guide flanges D₂ F.

No. 12,077. Improvements in Churns.*(Perfectionnements dans les barattes).*

George W. Freeman, Rocky Point, Cal., U.S., 2nd December, 1880; for 5 years.

Claim.—1st. The cylindrical case A with the curved metallic bottom, bent or corrugated to form the longitudinal ledges *a* in the bottom itself, in combination with the longitudinal strips *b*, fitting the backs of said ledges and supporting them. 2nd. The curved metallic bottom A, with its angular ledges *a* and supporting strips *b*, in combination with the curved perforated segment E, and the exterior refrigerating chamber C. 3rd. The driving shaft G with its pinion J, in combination with the balance wheel and gear M, said wheel having the outer rim O for receiving a belt, and its hub slotted and fitted with a collar N with lugs, whereby the gear wheel may be used upon either the shafts G or L. 4th. In combination with the balance wheel M, the extensible handle P, fastened thereto by slipping on the dovetail *p* on the spoke *p'*, and further strengthened by the key bolt *q*.

No. 12,078. Improvements on Barrel Forming Machines.*(Perfectionnements aux bâtissoirs de tonnellerie).*

Samuel Wright, Harrison, Ont., 2nd December, 1880; for 5 years.

Claim.—1st. A cylindrical barrel form constructed in sections, in combination with mechanism for supporting, contracting, and expanding the form. 2nd. The combination with the barrel form A, constructed in sections of the hinged standards B, shaft C, sleeve E, bars F and lever D. 3rd. The combination, with the collapsible barrel form A, of the roller G and hinged retaining bars H. 4th. The combination, with the collapsible barrel form A, of the cut-off saws I.

No. 12,079. Improvements on Barrel Machinery.*(Perfectionnements aux machines de tonnellerie).*

John Waddel, Harrison, Ont., 6th December, 1880; for 5 years.

Claim.—1st. The mechanical process of making a barrel by assembling prepared staves around the proposed heads of the barrel while being rotated. 2nd. The combination, with the horizontal feed table of the endless belts 14, semi-circular frame 32 and disk 16, whereby the heads of the barrel *a-e* held in position, the staves assembled peripherally around the heads and trussed by hoops from the disks, and the formed barrel released by the hinged movement of the semi-circular frame for its removal. 3rd. The combination with feed table 45 of return endless belts 14, travelling around and upon rollers placed circuitously, for conveying the staves to form the barrel. 4th. In combination with the feed table 45, having casting 27 and a series of feed rollers, the rollers 46 depressing the ends of the staves to form the bulge, and the take up rollers 11 conveying the staves to the endless belt. 5th. The frame A, provided with a series of belt pulleys and pulleys arranged on the main frame, to carry the endless belts circuitously and return. 6th. The disks in combination with the endless chain or belts travelling along their peripheries. 7th. The disk 16 on end of shaft 17, having an endwise movement. 8th. The combination, with shaft 21, of lever 21, carrying pulley 46, for slackening and tightening the endless belt 14. 9th. The endless belt 14, provided with V-grooved blocks 15, for peripherally holding the heads in position. 10th. The plates 35, having spikes for impaling the heads in pieces, in combination with disk 16. 11th. The semi-circular frame 32, opening from frame A, to release the formed barrel.

No. 12,080. Improvements in Mowing and Reaping Machines.*(Perfectionnements aux faucheuses-moissonneuses).*

David Bell, Brampton, Ont., 6th December, 1880; for 5 years.

Claim.—1st. The knife *a*, of a reaping and mowing machine constructed with a neck *a*. 2nd. The knife bar *b* of a reaping and mowing machine, constructed with an upper plate *b* and under plate *c*, a vertical groove *b'* and a horizontal groove *b''*. 3rd. The combination of the knife *a* with the knife bar *b c*.

No. 12,081. Improvements on Billiard Cushions.*(Perfectionnements aux bandes des billards).*

Samuel May, Toronto, Ont., 6th December, 1880; for 5 years.

Claim.—1st. The combination with an elastic rubber cushion rounded on the playing edge of an embedded metallic ribbon running the entire length of the cushion, and extending from its bottom socket up in the elastic rubber, to a point above that with which the ball comes in contact. 2nd. The combination of the hard rubber E having recess *a*, the soft rubber D having recess *b*, and the ribbon F. 3rd. The method of forming a billiard table cushion, for the reception of a metallic ribbon, which consists in moulding and vulcanizing the hard rubber E and elastic rubber D together and, at the same time, forming therein the slot or socket *a b*.

No. 12,082. Improvements on Locks.*(Perfectionnements aux serrures).*

Joseph Siruguey, New Orleans, La., U.S., 6th December, 1880; for 5 years.

Claim.—1st. A lock with an adjustable key hole, and consisting of a lock with sliding key hole plates, and with a sliding notched plate or block in which the end of the bit takes on the bolt. 2nd. The combination, with the lock A, of the plate G, provided with a barrel K, and a longitudinal slot H, and of the screws Q Q'. 3rd. The combination, with the lock A provided with a longitudinal slot S, of the bolt D, provided with a longitudinal slot R, of the sliding plate or block T, provided with notches V V' to receive the end of the key bit and of the adjusting screw V. 4th. The side plate C, with an aperture B in the middle below the bolt, with a recessed lower part F, and with a bevelled lower edge, to receive the bevelled edge of a plate G₁ or G₂.

No. 12,083. Improvements on Tree Protectors. (*Perfectionnements aux tuteurs des arbres.*)

Albert G. Cook, Boston, Mass., U. S., 6th December, 1880; for 5 years.

Claim.—The combination of the flexible cloth *b*, movable ring *d* and annular receptacle *e*, made in one single piece and having its tapering inner surface *e* crimped or corrugated to its desired shape.

No. 12,084. Improvements on Harvesting and Binding Machines. (*Perfectionnements aux moissonneuses-engrèbeuses.*)

William Russel, Dundas, Ont., 6th December, 1880; for 5 years.

Claim.—1st. The combination of frame *A*, wire spool *B*, grooved pulley *D*, spring presser plate *E*, lever *F*, joint *G*, arm *H*, spiral spring *I* and hook *J*. 2nd. The combination of spring presser plate *E*, thumbscrew and lock nut *L* and lever *F*.

No. 12,085. Improvements on Machines for Making Sheet Metal Elbow Pipes. (*Perfectionnements aux machines à faire les tuyaux coudés en tôle.*)

Moritz Püschner, Gorlitz, Prussia, 6th December, 1880; for 5 years.

Claim.—1st The combination of slide *S* with link *n*, levers *H* *H*, cross piece *T* and rod *l* provided with head *K*, tappets *C* *C* and actuating mechanism. 2nd. The cross head *C*, cross bar *p*, chains *r* *r*, wheels *R*₃ *R*₃, shaft *W*₂, crank lever *K*₁, rod *t*, slide *S* and actuating mechanism. 3rd. In combination with the support for the pipe and the cross head to which said support is attached to ratchet wheels *S*₂, *S*₄, the shaft *W*₂, the wheels *S*₂ *S*₅, springs *f* *f*, pawl *t*₃, *t*₄, wheel *S*₂, rod *t*₂, slide *S* and devices for bulging and flattening the elbow. 4th. The shears *u*₁ *u*₂ *u*₃ *u*₄ and the compressors *v*₁ *v*₂ *v*₃ *v*₄, in combination with the levers *U* *U*, and means for operating said levers, the latter being provided with vertical pivots *y* *y* and connected to said compressors. 5th. The levers *L*₂ *L*₃ and means for operating the same, with extensions *C*₃ *C*₃ and the half circular cross piece *T*₂, in combination with the shears *u*₁ *u*₂ *u*₃ *u*₄ and *u*₅, pivoted through their projections *z* in the stand *15*. 6th. The levers *L*₁ *L*₁, with inclined surfaces *P* *P*, *R*₁ *R*₁, and connected with the levers *U* *U*, and the levers *L*₂ *L*₂, with roller *R*₄, in combination with actuating mechanism, and the slide *S* provided with inclined surfaces *P*₂ *P*₃ *P*₃.

No. 12,086. Improvements on Machines for Ventilating Mines. (*Perfectionnements aux machines à aérer les mines.*)

John H. Campbell, Pittsburg, Pa., U. S., 6th December, 1880; for 5 years.

Claim.—The employment of a steam or water jet, in combination with a pipe or pipes leading into and traversing the mine.

No. 12,087. Improvements on Rein-Holders. (*Perfectionnements aux accroche-guides.*)

Samuel Crawford, Kincardine, Ont., 6th December, 1880; for 5 years.

Claim.—1st. The whole machine (or rein-holder). 2nd. The combining of the rein-holder to the whip-holder.

No. 12,088. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

The Universal Knitting Machine Company, (Assignee of Patrick G. Close, the Assignee of John Blacklock.) Toronto, Ont., 6th December, 1880; (Extension of Patent No. 9,129.)

No. 12,089. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

The Universal Knitting Machine Company, (Assignee of Patrick G. Close, the Assignee of John Blacklock.) Toronto, Ont., 6th December, 1880; (Extension of Patent No. 9,129.)

No. 12,090. Improvements on Wooden Vessels. (*Perfectionnements aux vaisseaux en bois.*)

Harvey K. Carter, Camden, N. J., John B. Wood, Philadelphia, Pa., and James F. Wood, Camden, N. J., U. S., 6th December, 1880; for 5 years.

Claim.—1st. The combination of grooved ribs and grooved planking, or plankings with strips adapted to the said grooves. 2nd. The combination of the grooved ribs, grooved plankings, and strips with pins *a*.

No. 12,091. Improvements on Stove Urns. (*Perfectionnements aux urnes des poêles.*)

Charles W. Herrick, Charles W. Wipfler and Theodore H. Roberts, Detroit, Mich., U. S., 7th December, 1880; for 5 years.

Claim.—1st. An urn composed of a longitudinally divided body, handles fastened by being clamped between the parts of the body, separate mouth and base pieces, and means for uniting the different parts. 2nd. An urn composed of five pieces, to wit: the body pieces *A* *A*, the double handle piece *B*, the base *E* and mouth *G*. 3rd. *A* body made in longitudinal sections, embraced by external annular portions of the urn, located respectively at the upper and lower ends of the body. 4th. The body pieces provided with lugs *A*₃ at their upper ends, in combination with an annular section *G* and a fastening pin or equivalent *C*. 5th. The combination, with the body pieces, of projections *A*₂, their connecting bolt and tie bolt *D*. 6th. An urn or similar vessel having a longitudinally divided body, a separable handle extending in between the body sections and held in place by the latter. 7th. An urn having a longitudinally divided body, a double handle piece *B*,

adapted to be held in place by the body sections. 8th. A stove urn constructed with a longitudinally divided body and separable handles, the body along those portions occupied by the handles being dressed in a turning lathe and plated with non-oxidizable metal.

No. 12,092. Improvements on Paint Cans. (*Perfectionnements aux bidons à peinture.*)

Frederick W. Devos, New York, U. S., 7th December, 1880; for 5 years.

Claim.—1st. The combination of the can *A* having in its upper head a groove *f*, the piston *C*, screw *B* and the flange *D* having an upturned rim *e* fitting in the groove *f*, whereby a board-bearing is afforded for the screw upon the can head and its canting prevented. 2nd. The combination, with the can, of the screw *B* having a slot *d*, and a flange *D* having the hole *b* and cross bar *c* fitting said screw and slot within or inside the head of the can, for the purpose of attaching the flange to the screw inside the head of the can. 3rd. The combination, with the can, of the screw *B* having a slot *d*, and the flange *D* having the hole *b*, cross bar *c* and upturned lips *e* fitting said screw and slot within or inside the head of the can, whereby a secure attachment for the flange to the screw is afforded without making the flange of heavy metal. 4th. The combination, with the can body, the piston fitted thereto and the screw for operating the piston furnished with a folding handle outside the can and with a bearing flange inside the can, of the can head constructed with an internal groove which receives the upturned rim of the said flange and a corresponding external bead which produces an external recess *J* for the reception of the folding handles. 5th. The combination, with the screw *B* having a slot *d*, of the handle or key *E* having a round shank *g* inserted into said slot, and confined therein by the overlapping of the horns *K* at the side of said slot, for the purpose of securing the handle to the screw. 6th. The combination of the can *A*, the screw *B*, piston *C*, flange *D*, and the packing washer *F* interposed between the said flange and the head of the can, for the purpose of making a tight joint between the screw and the head. 7th. The combination of the can *A*, the valve *G* or seat *G* provided with lips *i* in the same piece, and the gate or valve *G* fitting under and overlapped by both of said lips and pivoted to one of them, whereby a very cheap provision for closing the outlet of the can is obtained.

No. 12,093. Improvements on Car Trucks. (*Perfectionnements aux trains des chars.*)

Sidney D. King, Pittston, Pa., U. S., 7th December, 1880; for 5 years.

Claim.—1st. As a new article of manufacture, a two wheeled non-swivelling car truck. 2nd. The combination of a car truck, a car body and springs arranged between them. 3rd. The combination of a two wheeled non-swivelling car truck with a car body, the latter resting and oscillating upon the former points of supports in a line, at a right angle to the car axle.

No. 12,094. Improvements on Pump Gearing. (*Perfectionnements aux équipages des pompes.*)

John S. M. Willcox, Whitby, Ont., 7th December, 1880; for 5 years.

Claim.—1st. The combination, with the pump stock *D* and piston rod *D* *B*, of the chain *C* and pulley *A*, the chain passing around the periphery of the pulley. 2nd. In combination with the chain *C*, whose ends are attached to the piston rod *B*, a pulley *A* encircled by said chain having a socketed projection *G*, from its periphery, to receive a handle *F* for operating the pump. 3rd. In combination with a chain *C*, whose ends are attached to the piston rod *B* and encircling a pulley *A*, a pendulum *I* attached to the pulley axle *E* for operating the gear by the swinging motion of the pendulum.

No. 12,095. Improvements on Match Boxes. (*Perfectionnements aux boîtes à allumettes.*)

Theodore Schafer, Maroa, Ill., U. S., 7th December, 1880; for 5 years.

Claim.—1st. A match box formed of two parts *A* *B* which are hinged together so as to be opened outward, the part *A* being adapted to hold matches, and the part *B* provided with supports *C* to hold a lighted cigar in a horizontal position. 2nd. In combination with the parts *A* *B*, the two supports *C* adapted to be closed down out of the way and held by the part *A*, when the box is closed, and which are made to automatically snap up into position again by means of springs when the two parts of the box are opened. 3rd. The box *B* provided with spring supporters for supporting the cigar, and a space at one end of the box to receive the cigar ashes.

No. 12,096. Climatic and Fire-Proof Paint. (*Peinture hydrofuge et réfractaire.*)

John C. Smith, Dunkirk, N. Y., U. S., 7th December, 1880; (Extension of Patent No. 5,532.)

No. 12,097. Improvements in Sewing Machine Shutles. (*Perfectionnements aux navettes des machines à coudre.*)

George H. Thomas, Bowmanville, Ont., 8th December, 1880; (Extension of Patent No. 6,841.)

No. 12,098. Improvements in Gas Carbureters. (*Perfectionnements aux carburateurs à gaz.*)

Walter M. Jackson, Providence, R. I., U. S., 8th December, 1880; (Extension of Patent No. 11,795.)

No. 12,099. Improvements in Sewing Machine Shutles. (*Perfectionnements aux navettes des machines à coudre.*)

George H. Thomas, Bowmanville, Ont., 9th December, 1880; (Extension of Patent No. 6,841.)

No. 12,100. Improvements in Gas Carbureters. (*Perfectionnements aux carburateurs à gaz.*)

Walter M. Jackson, Providence, R. I., U. S., 9th December, 1880; (Extension of Patent No. 11,795.)

No. 12,101. Improvements on Key Boards of Musical Instruments. (*Perfectionnements aux claviers des instruments de musique.*)

William G. Young, (Assignee of Christopher C. Reynolds,) Kelseyville, Cal., U. S., 11th December, 1880; for 5 years.

Claim.—1st. A series of pivoted levers acted upon by the note sheet and connected by strings or wires, with a corresponding series of fingers resting upon the keys and acted upon by a friction roller rotated at the same time with the feed roller between which the note sheet is held, whereby the keys are depressed by the action of the friction roller and of the projections of the note sheet on the pivoted levers connected with the fingers. 2nd. The combination, with the fingers *o*, of the roller *Q*. 3rd. The combination, with the hinged or pivoted rack *E*, of the feed rollers *G*, *H*, spur wheels *d* and shaft *I*. 4th. The combination, with the shaft *I*, of the feed rollers *G*, the pulleys *R*, *T*, belt *S* and roller *Q*. 5th. The combination, with the strings *L*, of the levers *A*, fingers *O* and bridges *M*, *N*. 6th. The bridge *N* with a vertical groove *g* on the rear side, and a horizontal groove *h* on the lower side.

No. 12,102. Improvements in Broad Cast Seed Sowers. (*Perfectionnements aux semoirs à la volée.*)

Benjamin Richardson, Houlton, Me., and Luke W. Nichols, Worcester, Mass., U. S., 11th December, 1880; for 5 years.

Claim.—1st. The gauge boards *L* dovetailed into the under side of the seed box *A* with their lugs *h* and working levers *j*. 2nd. The arrangement and combination of the cam wheel *d*, slide bar *H*, yoke *J* and shakers *G*, *I*. 3rd. Two or more hoppers arranged for broad casting grain and fertilizers, or different kinds of grain at the same time. 4th. In combination with a seed sower, the reversible square teeth *O* fixed to the tooth rods *N*, and said rod pivoted or hinged to the seed box by the pivot rod *m*, which is held by the through bolts *k*.

No. 12,103. Improvements on Dressing-Case Bedsteads. (*Perfectionnements aux lits-toilettes.*)

Herman A. J. Rieckert and Charles E. A. Rieckert, New York, U. S., 11th December, 1880; for 5 years.

Claim.—1st. The combination, with hinged bed *B*, of the cases *C* hinged to swing in front thereof or be turned to one side, to afford space for lowering the bed. 2nd. The automatic connections between the two cases consisting of lever *w*, link *x* and arm *y*. 3rd. The sliding shelves *e* fitted to move with cases *C*. 4th. The sliding doors *r* fitted for movement by arms *r* and spring *r*, combined with the stand *A* and swinging cases *C*. 5th. In combination with a folding bed and stand, a spiral spring sustained on the stand upon a shaft connected by a belt to the bed, so that the spring is wound by movement of the bed in lowering. 6th. The spiral spring or springs *D* sustained at one end, shaft *f*, connected to the opposite end drum *c* on shaft *f*, and belt *b* combined with hinged bed *B* and stand *A*. 7th. In folding beds, the combination, with the torsion spring *D*, of shaft *e*, head *g*, ratchet wheel *k*, and pawl *o*. 8th. The folding bedstead hinge consisting of leaf *p* having groove *p* and curved finger *t*, and leaf *q* provided with aperture *t* and pin *q*. 9th. The pivoted spring latch *h* and hook *l* combined with bed *B*, and post *g*. 10th. The slide *v* having lug *z*, apertured plate *K* and recessed slide *K* having lug *K*, combined with hinged cases *C* and stand *A*. 11th. The shaft *e*, pulleys *b*, operating crank shaft *e*, cords *c* and netting *E* combined with stand *A*.

No. 12,104. Improvements in Hand Corn Planters. (*Perfectionnements aux semoirs à bras pour le blé d'inde.*)

Ephraim Putnam, Plattsburg, N. Y., U. S., 11th December, 1880; for 5 years.

Claim.—A hollow tapered metallic hoe handle *A* fastened to the piece of solid wood in the ferrule within about six inches of the hoe blade, with rubber slotted cushion *E*, in combination with the open ended box or keeper *C* in which is placed a slide *D* having adjustable end piece *f* with the spring *K*, and the rod *m* working within the handle and worked by a trigger *y* attached to the rod.

No. 12,105. Improvements in Ash Sifters. (*Perfectionnements aux cribles à cendres.*)

Charles Buise, (Assignee of Robert A. Brown,) Montreal, Que., 11th December, 1880; for 5 years.

Claim.—1st. The combination of the rack *E*, screen *D*, drawers *K*, *L* and hopper *C*. 2nd. The combination of the hopper *C*, shaft and vanes *F*, rack *E*, screen *D* and drawers *K*, *L*. 3rd. The combination of the screen *D* with the drawers *K*, *L* and hopper *C*.

No. 12,106. Improvements on Ink Stands. (*Perfectionnements aux encrriers.*)

Elizabeth W. Stiles, Hartford, Ct., 11th December, 1880; for 5 years.

Claim.—1st. The combination of the hinged seals *F* provided with projections *G*, *G*, with the band *I*. 2nd. The combination of a binnacle-balanced fluid receptacle and of twin seals or covers, pivoted at the periphery of the orifice of the receptacle and opening outwardly from the centre thereof, whereby, when the seals are open, the equilibrium of the receptacle is maintained. 3rd. The ink well provided with lugs *K*, *K* which pass through openings or recesses in the holding ring *C* or frame *D*, and by a

turn secure the well in place. 4th. The holding ring *C* or frame *D* provided with stops *y* adjoining the recesses *L*, *L*, by which the ink well is guided so that it may be readily removed from the ring. 5th. The combination of the part *A* having lug *K*, with the holding ring *C* provided with recesses and stops, and a suitable bracket or stand. 6th. An inkstand composed of the following elements, to wit: the raised annular ring frame *D* provided with perforated feet *x* and ears *z*, the gimbal mechanism, and the receptacle *A* with twin seals or covers *F*, *F*.

No. 12,107. Improvements in the Art of Packing Brooms. (*Perfectionnements dans l'art d'emballer les balais.*)

James N. Tym, Jackson, Mich., U. S., 11th December, 1880; for 5 years.

Claim.—1st. Laying the brooms in alternation with the handle of one bearing against the middle of the head of the next in series, so confining them in a press while pressure is applied in a line at right angles to the width of the broom so as to indent the heads to confine the handles, and then securing them by means of a packing form inclosing and retaining them in position. 2nd. A packing case for brooms composed of longitudinal bars *A* and lateral braces *C*, *D*, *C* for confining the brooms during shipment, intermediate wires *E*, *E* for supporting the brooms remaining after a tier or tiers have been removed, and having a series of holes through the side braces, so that the case shall perform the double function of a package for shipment and a rack for exhibiting the brooms at retail. 3rd. A packing case for brooms consisting of longitudinal bars *A* and lateral braces *C*, *D*, *C*, for confining the brooms during shipment, and having a series of holes through the side braces, so that the case shall perform the double function of a package for shipment and rack for exhibiting the brooms at retail. 4th. A packing case for brooms, the side braces *D* of which are perforated for receiving the handles of the brooms while exposed for sale.

No. 12,108. Improvements in Air Heaters. (*Perfectionnements aux poêles sours.*)

John T. Greenwood, Kalamazoo, Mich., U. S., 11th December, 1880; for 5 years.

Claim.—1st. The drum *B* with tubes *A* and *c*, elbow *A*, perforated cylinder *D*, plate *F* and pipe *C*, combined, adapted and arranged as specified. 2nd. The combination of drum *B* provided with tubes *A* and *c*, and flame arrester *F* *D* with a stove and pipe *e*, *e*. 3rd. The flame and spark arrester composed of perforated cylinder *D* and deflecting plate *F*, in combination with drum *B*.

No. 12,109. Improvements in Coffee Roasters. (*Perfectionnements aux poêles sours.*)

Samuel Marrotte, Montreal, Que., 11th December, 1880; for 5 years.

Claim.—1st. The cylinder so arranged as to be carried in the furnace independently of the fire box. 2nd. The combination, with the furnace and cylinder, of a post and arm carrying said cylinder and on which it is swung into and out of the furnace. 3rd. The post *D* with arm *E*, and extension *E* held by adjustable link *F* and carrying cylinder. 4th. The combination with the furnace and cylinder, of the revolving shaft *K* with pinions *L*, *L* rotating the cylinder, whether in or out of the furnace. 5th. The combination, with the cylinder and post carrying one end of axis of same, of the rack *H* with double journal *h*.

No. 12,110. Improvements in Paper Bag Machines. (*Perfectionnements aux machines à sacs de papier.*)

William C. Cross, Boston, Mass., U. S., 11th December, 1880; for 5 years.

Claim.—1st. The carrier cylinder provided with a central peripheral opening or openings formed to expose the portions of the blank to be operated on from within the cylinder, in combination with the endless belt between which and said cylinder the blank is held and carried. 2nd. The rotary carrier cylinder composed of two short drums or cylinders mounted on the same axis adjustable to and from one another to vary the distance between them. 3rd. The combination, with the carrier cylinder provided with a peripheral opening or openings formed to expose the portions of the blank to be operated on within the cylinder, and means for holding the blank on said cylinder, of folding devices arranged and operated to act from the inside of, and through said cylinder upon the blank carried thereon. 4th. The combination, with a carrier cylinder provided with a peripheral opening or openings and means for holding the blank on said cylinder, of folding devices independent of, and disconnected from the said cylinder arranged and operated to act from the inside of, and through the cylinder, upon the bag blank carrier on the exterior of said cylinder. 5th. In combination with the rotary carrier cylinder provided with a peripheral opening or openings and means for holding the blank in said cylinder, the second folder revolving on the same axis and in the same direction as, but at a greater speed than said cylinder, and arranged and operating to pick up and fold over the rear flap of the diamond fold of the blank carried upon and moving with said cylinder. 6th. The vibratory third folder and means for actuating the same to move, in combination with the rotary carrier cylinder provided with a peripheral opening through which the said folder acts from the inside of the cylinder on the blank, and means for holding the blank on said cylinder. 7th. The combination of the rotary carrier cylinder composed of two short cylinders or drums, the endless belt, the rotary second folder, the vibratory third folder and means for actuating said folders and cylinders to move relatively to one another. 8th. In a machine for making satchel bottom bags, the combination, with a carrier by which the blank is held and fed along, of a rotary oscillating folder which moves at a greater speed than the carrier and operates to pick up, and turn and fold over one of the flaps of the diamond fold of the said blank.

No. 12,111. Improvements on Corsets. (*Perfectionnements aux corsets.*)

Joseph S. Guthrie and Elizabeth Guthrie, St. Catharines, Ont., 11th December, 1880; for 5 years.

Claim.—A long spine supporting corset back constructed in the manner shown.

No. 12,112. Improvements on Nut Locks.*(Perfectionnements aux arrête-térous.)*

Nile F. Wyncoop, Chemung, N. Y., U. S., 11th December, 1880; for 5 years.

Claim.—As an improvement in reverse threaded bolts and nuts, the bolt A having reverse threads, in combination with the nuts B C, each adapted to one of the threads and with the set screw D carried by one of the nuts.

No. 12,113. Improvements in Paper Bag Machines.*(Perfectionnements aux machines à sacs de papier.)*

William C. Cross, Boston, Mass., U. S., 11th December, 1880; for 5 years.

Claim.—1st. In machinery for making the second and final folds of satchel bottom bags, the combination, with a cylinder revolving continuously in one direction, of second and third folders to act alternately as folders and as clamps and guides, the one acting as clamp and guide for the line of fold when the other acts as folder. 2nd. In combination with the continuously rotating cylinder upon which the bag blank with diamond fold is received, the oscillatory second and third folders arranged to move concentrically with the cylinder, and also to and from the periphery of the same, and operating mechanism, whereby they are caused to move relatively to one another and the cylinder, to make the second and third folds while the blank is moving with the cylinder. 3rd. In combination with the rotating cylinder and the oscillatory second and third folders arranged and operating in connection with the cylinder, the final delivery roll between which and the cylinder the final fold of the blank is tucked by the second folders.

No. 12,114. Machine for Closing Mail Bags.*(Machine pour fermer les sacs de malle.)*

Xiste Viger, Longueuil, Que., 11th December, 1880; for 5 years.

Resumé.—Dans la combinaison de la boîte *b* avec les œillets *f* et le morail lon *c*, contenant les langues *d d* traversant les anneaux.

No. 12,115. Improvements on Fire Extinguishing Machines.*(Perfectionnements aux machines à éteindre les incendies.)*

Joseph H. Campbell, Pittsburgh, Pa., U. S., 11th December, 1880; for 5 years.

Claim.—1st. In generating carbonic acid gas from a mass of burning charcoal, then cooling said gas and subsequently distributing it over the burning article or thing. 2nd. The machine consisting of the gas generating furnace A, cooling device and gas distributing pipes, constructed, arranged and operating with relation to each other. 3rd. The gas generating furnace A, cooling device and distributing pipe *g*, in combination with an oil tank.

No. 12,116. Improvements on Snow Ploughs.*(Perfectionnements aux charrues à neige.)*

Théodore Dussault, St. Henri, and D. Charles Morency, Lévis, Que., 14th December, 1880; for 5 years.

Resumé.—L'emploi, en avant des charrues ordinaires, de la roue à palettes B d'un diamètre à peu près égal à la largeur de la charrue, destinée à pulvériser la neige et en rejeter une partie de chaque côté de la voie, la disposition de cette roue ainsi que l'emploi d'un engrenage conique qui permettra de faire tourner dans les différentes positions les pins avantageux suivant les cas.

No. 12,117. Improvements on Snow-Shoes.*(Perfectionnements aux raquettes.)*

John Caldwell, Sheeveport, La., and Oscar E. Huss, Washington, D. C., U. S., 14th December, 1880; for 5 years.

Claim.—1st. A snow-shoe having its upper middle portion elevated and provided with transverse slots for the passage of straps. 2nd. A snow-shoe having its upper middle portion provided with an elastic bearing surface. 3rd. A snow-shoe consisting of the long narrow runner elastic bearing cushion and fastening straps.

No. 12,118. Improvements on Metal Pumps.*(Perfectionnements aux pompes métalliques.)*

John Kinleyside, Hamilton, Ont., 14th December 1880; for 5 years.

Claim.—1st. The combination of the following metals, namely: zinc 17 parts, copper 1 part and antimony $1\frac{1}{2}$ parts. The combination of valves D E with cylinder F and chest J, provided with means of connecting chamber C and pipe K. 3rd. The combination and arrangement of standard N, wheel O, disk P, tube Q, pitman S, for converting the rotary into a reciprocating motion.

No. 12,119. Improvements in Velocipedes.*(Perfectionnements aux vélocipèdes.)*

Alford C. Johnson, Martin, Ohio, U. S., 14th December, 1880; for 5 years.

Claim.—1st. The combination of the differential wheels 1 2 3 feathered to the shaft K, adjustable arms pivoted in the cheeks of the standards and bearing said shaft K and cranks transmitting wheel L, cog wheel M, axle and driving wheels. 2nd. The shaft A, foot rest and segment gear Cr, in combination with the duplex segments R P. 3rd. In combination with the duplex segments R P, the segment gear N, fifth wheel axle and guiding wheels F. 4th. The combination of the wheels 1 2 3, adjustable arms transmitting wheels and cog wheels M and platform foot rest B, shaft A and segment gear, in combination with the transmitting duplex segment gear, segment N, fifth wheel axle and wheel F.

No. 12,120. Machine for Securing Buttons to Cards.*(Machine pour assujétir les boutons sur les cartes.)*

Samuel L. Otis, Birmingham, Ct., U. S., 14th December, 1880; for 5 years.

Claim.—1st. The combination of hook needles arranged in pairs and adapted to be vertically reciprocated, and a thread guide which automatically delivers a line of thread in position to be caught by said needles. 2nd. The combination of a perforated card supporting plate, hook needles adapted to be reciprocated through the perforations, and a thread guide which automatically delivers the thread in position to be caught by said needles. 3rd. The combination of hook needles arranged in pairs and adapted to be vertically reciprocated, a thread guide which automatically delivers a line of thread in front of the needles, and clamps which secure the thread at each side of the machine. 4th. The combination of hook needles adapted to be vertically reciprocated, a thread guide which delivers the thread to the needles, and thread guards which hold the thread in position for the hook needles to engage therewith. 5th. The combination of vertically reciprocating hook needles and presser fingers adapted to bear against the hook ends of said needles, as the latter are on their down stroke. 6th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers the thread thereto, and cutters adapted to sever the thread on the down stroke of the needles. 7th. The combination of vertically reciprocating hook needles and thread eveners, adapted to press the thread to the central portion of the respective buttons on the down stroke of said needles. 8th. The combination of vertically reciprocating hook needles, cutters adapted to sever the threads between the different buttons at each side of the machine, on the down stroke of the needles, and thread eveners which press the several pieces of cut thread to their respective buttons. 9th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers the thread thereto, clamps which secure the thread to opposite sides of the machine, and thread guards which hold the thread in position to be caught by said needles. 10th. The combination of vertically reciprocating hook needles, a thread guide which delivers the thread thereto, clamps which secure the thread to opposite sides of the machine, and presser fingers which bear against said hook needles on their down stroke. 11th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers thread thereto, thread guards which hold the thread in position to be caught by the needles, and presser fingers which bear against said hook needles on their down stroke. 12th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers the thread thereto, clamps which secure the thread to opposite sides of the machine, thread guards which hold the thread in position to be caught by the needles, presser fingers which bear against the hook needles on their down stroke, and cutters which sever the thread. 13th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers thread thereto, clamps which secure the thread to opposite sides of the machine, cutters which sever the thread on the down stroke of the needles, and thread eveners which clamp the several pieces of thread centrally to their respective buttons. 14th. The combination of vertically reciprocating hook needles, a thread guide which automatically delivers thread thereto, clamps which secure the thread to opposite sides of the machine, thread guards which hold the thread in position, presser fingers which bear against the hook needles on their down stroke, cutters which sever the thread between the different buttons and at each side of the machine, and thread eveners which press the several pieces of cut thread centrally to their respective buttons. 15th. The combination of the following parts, needles for perforating the card and inserting the thread in said perforations, cutters for severing the threads, a device for applying paste to the under side of the card, and rollers for applying paste to the underside of the card, and rollers for applying tissue paper, or other suitable fabric, to the pasted surface of the card board.

No. 12,121. Improvements on Safety Nuts for Vehicle Axles and on Wrenches.*(Perfectionnements aux noix de sûreté pour les essieux des voitures et aux clés.)*

Henry Anderson, San Francisco, Cal., U. S., 14th December, 1880; for 5 years.

Claim.—1st. The combination of a longitudinally divided nut C, having a screw cap or set nut F at the end thereof, with an axle provided with a collar or end bearings A. 2nd. A compound wrench consisting of an inner wrench H, provided with an annular groove or slot *g* and moving upon pins *f* placed in an outer wrench G.

No. 12,122. Process and Apparatus for Manufacturing Aqua Ammonia.*(Procédé et appareil pour la fabrication de l'ammoniaque liquide.)*

James L. Marsh, Brooklyn, N. Y., U. S., 14th December, 1880; for 5 years.

Claim.—1st. The combined method of heating and agitating the material under treatment in a tight retort, or containing vessel consisting of a steam jacket inclosing the retaining vessel for heating the material, in combination with a horizontal rotating stirrer by which the material, while so heated, is thrown around the horizontal axis of the stirrer, to obtain a more thorough separation of the material and a more rapid elimination of the ammonia gas. 2nd. The method of treating the sulphate of ammonia consisting of pumping or drawing the same from the first condenser back into the retort, and submitting it again to the combined action of the heat, the lime and the stirrer, for the purpose of obtaining a more thorough elimination of the ammonia. 3rd. A retort or containing vessel inclosed in a steam or heating chamber, and fitted with a horizontal rotating stirrer, combined with, or connected to one or more condensers, or absorbing chambers, inclosed in a water jacket or cooling chamber.

No. 12,123. Apparatus for Treating Cellulose Bases for Artificial Teeth.*(Appareil pour le traitement de la cellulose pour les dents artificielles.)*

Lemuel D. Dobbins, Camden, N. J., U. S., 14th December, 1880; for 5 years.

Claim.—1st. The combination of the base A with the cylindrical cham-

ber B provided with feathers C C on the sides, and the slots E E in the bottom. 2nd. The combination of the top plate F provided with a slot G and vertical projection H, with the top press plate I provided with a standard N, and bolt tubes M M. 3rd. The combination of the bottom clamp plate J, the intermediate part P and the press plate I, and the tubes M M with the screws K K. 4th. The combination of the chamber B provided with the feathers C C, with the plate I having recesses *i*, the part P having recesses *p*, and the bottom plate J having recess *s*.

No. 12,124. Improvements on Refrigerators. (*Perfectionnements aux garde-manger*).

Albert Brown, London, Ont., 14th December, 1880; for 5 years.
Claim.—The method of producing a current of cold air by means of a spray of cold water injected in suitable vessel or generator A, through pipe or hose B, said current of cold air being distributed by outlet pipes C C.

No. 12,125. Improvements in Nut Locks. (*Perfectionnements aux arrêlé-écrous*).

Charles Taylor, Montreal, Que., 14th December, 1880; for 5 years.
Claim.—1st. The combination of the following elements, viz., a bolt with nut thereon, split longitudinally and formed transversely through it in line of split, a round hole, into which is inserted a pin parallel sided and oblong in section. 2nd. In combination with a split bolt transversely bored, the pin C, made as shown.

No. 12,126. Improvements in Shirt Bosoms. (*Fronts*). (*Perfectionnements aux devants des chemises*).

Beth K. Devereux, Frederickton, N. B., 14th December, 1880; for 15 years.
Claim.—1st. A shirt front provided with one or more stiffeners *d*, said stiffeners being vertically inserted therein, at or near the central portion of the front. 2nd. A shirt front provided with one or more stiffeners *d* vertically inserted therein, at or near the central portion of the front, said stiffeners extending from just below the neck and of the shirt, to about the extremity of the breast bone of the wearer. 3rd. A shirt front provided with one or more stiffeners *d* vertically inserted therein, at or near the central portion of the front, the lower ends of said stiffeners being held by devices removably secured to the front, for the purpose of preventing the stiffeners from slipping out of place. 4th. The combination, with a shirt front provided with beads or pockets C, near its centre, containing stiffeners *d*, extending about the length of the breast bone, of the socket frame *e*, provided with sockets *e*1, said frame being removably secured to the front, and holding the lower ends of the stiffeners.

No. 12,127. Improvements in Purifying Oils. (*Perfectionnement dans l'épuration des huiles*).

Richard Dean, Berkeley, Cal., U. S., 14th December, 1880; for 5 years.
Claim.—First vapouring the oil by heat and then passing the vapour through one or more layers of lime, soda, or other alkali, or oxide of iron, within a chamber placed between the still and the condensers.

No. 12,128. Improvements on Hay Knives. (*Perfectionnements aux coupe-paille*).

William W. Heath, Cazenovia, N. Y., U. S., 14th December, 1880; for 5 years.
Claim.—1st. A hay knife composed of a blade provided on one edge with two or more V-shaped cutting edges and, at the edge or corner opposite said cutting edges, with a handle or stem. 2nd. A hay knife, composed of a blade, provided on one edge with two or more V-shaped cutting edges, a handle or stem extended from the edge or corner opposite said cutting edges, and a step or foot piece connected to the handle. 3rd. The combination of the blade A provided with the recesses *r*, and the knife sections *a*, detachably secured in said recess. 4th. The combination, with an upright hay knife, of a step or foot piece hinged to the handle of the knife.

No. 12,129. Improvements on Machines for Cutting Horn. (*Perfectionnements aux machines à tailler la corne*).

George M. Cruickshank and Samuel F. Hilton, Providence, R. I., U. S., 14th December, 1880; for 5 years.
Claim.—1st. The revolving drum E provided with an adjustable knife H, in combination with the spring fingers P P. 2nd. The revolving drum E provided with the adjustable grooving cutters *a*, in combination with the spring fingers P P. 3rd. The revolving drum E, provided with a hollow rim for the circulation of steam, in combination with the grooving cutters *a*, and adjustable knife H.

No. 12,130. Improvements in Blotting Pads. (*Perfectionnements aux buvards*).

Channcy M. Lothrop, Norwood, Mass., U. S., 14th December, 1880; for 5 years.
Claim.—1st. The rigid and movable slotted blocks *b* *b*1, lock *f*, combined spring and hinge *g* *c*. 2nd. In combination with the slotted blocks *b* *b*1, the hinge *c*, provided with a projecting arm terminating in a bent spring *g*, the screw lock *f* and its projecting lip *j*.

No. 12,131. Improvements on Suspenders. (*Perfectionnements aux bretelles*).

Francis B. Brown, Boston, (George Frost, George H. Phelps and George A. Frost, Newton, Mass., U. S., 14th December, 1880; for 5 years.
Claim.—An attachment between the shoulder straps and suspender ends at the back, made from wire or similar material, to form an independent loop for each of the shoulder straps, and a loop for attachment of the suspender ends, the said shoulder strap loops independent of, and made elastic with, relation to each other.

No. 12,132. Map Stand. (*Porte-carte géographique*).

James Campbell, Toronto, Ont., 14th December, 1880; for 5 years.
Claim.—A map B, provided with a chain or cord A, swivel C and hook D, or their equivalent, in combination with an eye E.

No. 12,133. Improvements on Hay Rakes. (*Perfectionnements aux râtaux à foin*).

William Russel, Dundas, Ont., 14th December, 1880; for 5 years.
Claim.—1st. The combination of tube A, wooden core B. 2nd. The combination of teeth C, tubular bar A and wooden core B.

No. 12,134. Improvements on Corset Clasps. (*Perfectionnements aux agrafes des corsets*).

Frederick Crompton, Toronto, Ont., (Assignee of Max W. Henius, New York, U. S.) 14th December, 1880; for 5 years.
Claim.—The improved corset clasp embodying, in combination, the corset steels, the headed studs, and the eye plates having stud eyes, containing the large circular apertures *c*, the smaller circular aperture *e*, and the straight slot *d* with its central lines, coincident with the centres of the circular apertures.

No. 12,135. Oil Tank. (*Réservoir à huiles*).

Newell W. Wilson and Alphonso W. Blye, Syracuse, N. Y., U. S., 14th December, 1880; (Extension of Patent No. 5,525).

No. 12,136. Improvements on Electric Gas Lighting Apparatus. (*Perfectionnements aux appareils électriques pour allumer le gaz*).

George F. Pinkham, Boston, (Assignee of Jacob P. Sirrell, Somerville, Mass., U. S., 18th December, 1880; for 5 years.
Claim.—1st. In an electric-lighting gas burner, a magnet for turning the gas cock by one electric impulse combined with a fixed electrode *a* and a movable electrode *c*, normally in contact, and mechanism connecting the armature with the movable electrode to break the contact between *a* and *c*, the instant after the gas is turned on, and create a spark for ignition. 2nd. The magnet H H, and armature N provided with pin *f*, and valve B provided with the bifurcated arm *g*, in combination with the movable electrode C and spring *d*, and yoke or link *h* arranged on opposite sides of the lower end of the movable electrode. 3rd. The magnets H H, I I, armature N, mounted on a rock shaft, and provided with pin *f* and yoke *h*, in combination with the gas-burner A, provided with a vertical valve having a bifurcated arm *g*, and spring support 5, fixed and insulated electrode G, movable electrode *c*, pivoted at L, and spring *d*. 4th. The armature N, mounted on a rock shaft and bearing the arm *e* and pin *f*, engaging with a bifurcated arm *g* attached to the gas cock, in combination with pin *b*, rigidly attached to the armature and extending through the casing.

No. 12,137. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre*).

Solomon B. Ellithorp, Rochester, N. Y., U. S., 18th December, 1880; for 5 years.
Claim.—1st. The combination, with the needle and molten wax receptacle placed beneath the same, of the sponges, carriers or arms, and mechanism for reciprocating said arms in a horizontal plane, whereby the sponges are carried over the surface of the wax toward and from the needle. 2nd. The combination, with the bed plate, of the wax receptacle C, the reciprocating sponges, the lazy tongs B, attached to and suspended from the bed plate, and having said sponges affixed as shown, and the cams *c* *c*, for operating the lazy tongs.

No. 12,138. Improvements on Lamps. (*Perfectionnements aux lampes*).

Charles R. Harrison and William D. Conklin, Fond-du-lac, Wis., U. S., 18th December, 1880; for 5 years.
Claim.—1st. A supporting rod, a revolving lamp, carrying disk, and a series of independently revolving and adjustable lamps. 2nd. The combination, with the reversible disk D, provided with bearings *h*, of the lamp adapted to revolve in such bearings. 3rd. The centre bottom pivot *h*, in combination with reservoir *x* and bearing *h*. 4th. The combination, of the centre rod with the vertically adjustable and reversible disk D. 5th. The combination, with a revolving disk, carrying a series of lamps, of the canopy, the exit top and the regulating valve.

No. 12,139. Improvements on Brick Off-bearing Cases (Hand Barrows). (*Perfectionnements aux civières à brique*).

William H. Ludlow, Red Cloud, Neb., U. S., 18th December, 1880; for 5 years.
Claim.—1st. A brick off-bearing case, constructed with a bottom *a*, sides *a*1, having handles *a*2 and provided with hinged or movable end pieces *a*3 *a*5. 2nd. A brick off-bearing case constructed with a bottom *a*, sides *a*1, having handles *a*3, and open at its ends.

No. 12,140. Improvements on Grain Cleaning Machines. (*Perfectionnements aux machines à nettoyer les grains*).

Vanburen Burke, Huntingdon, Ont., 18th December, 1880; for 5 years.
Claim.—The combination of the casings B, concave E, with teeth *a*, cylinder J, with teeth *j*, and distributing board M, with the holes N.

No. 12,141. Improvements on Railway Nut Wrenches. (*Perfectionnements aux clés à écrous des chemins de fer.*)

John O'Toole, Cumberland, and Alexander R. McDonell, Ottawa, Ont., 18th December, 1880; for 5 years.

Claim.—1st. A nut wrenching machine composed of the following elements to wit: a frame, carrying a nut holder secured to an arbor following the nut on its bolt, j-urnalled in a block supported by said frame, a gear to turn the arbor to screw the nut, and a clamp to secure the frame fixedly in position for operation, whereby to turn the nut continuously. 2nd. The combination, with a frame having a clamping device for securing machinery to the rails, of a nut holding arbor, having an endwise movement to follow the nut screwing on the bolt, and a gear to rotate the arbor by hand power, whereby to turn the nut continuously. 3rd. The combination, with a frame having a clamping device for securing the machine to the rails, of a nut holding arbor jurnalled in bearings, sliding on ways secured to the frame, and a gear to rotate the arbor by a crank, whereby contiguous nut can be screened without changing the position of the machine. 4th. The combination of arbor E, having nut holder D, sliding block F, chain wheels G N, endless chain R and crank handle O, with the parallel bars *f f*, secured to main frame by side bars *e e*, and with the standard c. 5th. The combination, with the block F, of latch J, cam m, springs *f j* and studs *h h*, for simultaneously locking the block F to the rails *f f* and engaging the latch with the screw arbor. 6th. The combination, with the driving gear, the block E and arbor D sliding on rails *f f* of the main frame for serving two or more bolts with nuts without changing the position of the machine.

No. 12,142. Improvements on Force Pumps. (*Perfectionnements aux pompes foulantes.*)

Charles Glover, Waterford, and David Epps, St. Thomas, Ont., 18th December, 1880; for 5 years.

Claim.—1st. The cylinder A having central outlet B in its side, connecting with air chamber C and discharge tube D, in combination with a plunger I and bracket J respectively working above and below said outlet. 2nd. The air chamber C connected to opposite cylinder A by branch B tapped by the delivery tube D intermediately. 3rd. The combination, with the cylinder A having terminal check valve E and side outlet B, of a plunger I and bucket J, each moving in a uniform direction within the cylinder by the pump rods.

No. 12,143. Improvements on Bed Bottoms. (*Perfectionnements aux sommiers des lits.*)

James P. Mallette, William H. Raymond and John Johnson, Chicago, Ill., U. S., 18th December, 1880; for 5 years.

Claim.—1st. In combination with the vertical springs *a a*, the bed bottom arranged in rows lengthwise of the bed, the longitudinally elastic strips of wire fabric D, secured at their ends, arranged between the rows of springs *a a* and connected at their edges to said springs.

No. 12,144. Railway Car Axle. (*Essieu de char de chemin de fer.*)

George H. Ward, Orson L. Southworth, Aaron Longstreet and Joseph Donnersberger, (Assignees of Theron S. E. Dixon and George H. Ward,) Chicago, Ill., U. S., 18th December, 1880; (Extension of Patent No. 5,524.)

No. 12,145. Improvements on Steam Pumping Machinery. (*Perfectionnements aux pompes des machines à vapeur.*)

George H. Corliss, Providence, R. I., U. S., 21st December, 1880; for 15 years.

Claim.—1st. The engine frame composed of the central casting A¹ B¹, side castings A² B² A³ B³ and top castings C C, combined and adapted to serve as specified. 2nd. In a steam pumping machine, the central base piece D in combination with the pumps M, masonry D¹ and with the triangular framing above. 3rd. The triangular framing made in separate sections, 4th. The condenser formed in two parts E E¹, the lower part receiving the condensing water, to condense the steam, and the upper part receiving the first rush of the steam, in combination with a pipe e¹ properly connected for the passage of feed water. 5th. The cylinder A, connections *a a*, condenser E E¹, feed pipe e and supports E² E³ for the latter, arranged to serve as specified. 6th. The stuffing boxes, in combination with the condenser and with the pipe e, and with supports E² E³ for holding the feed pipe firmly therein. 7th. The circular sliding valves, the skeleton lever G rocked as shown and having centres *g* moving near the axis of their respective valves, in combination with the links *f* connecting such centres with the valve arms F. 8th. The friction driving device H I¹ and means for automatically controlling the position, in combination with sleeve I⁵ or the corresponding part of a speed regulating device, so as to vary the velocity ratio of the governor and engine with each change in the speed of the engine. 9th. The adjustable link K K¹ K², in combination with a governor and with means for changing the velocity ratio of the governor with each temporary change in the velocity of the engine. 10th. The combination, in a governor, of the ordinary lever J and rod for controlling the motor, and also of the levers J¹ J² or their equivalents for changing the condition of the driving means H I¹, so as to change the velocity ratio simultaneously with, and to an extent corresponding to the required change in the power to maintain a uniform velocity. 11th. A pump having a valve urged to its seat by a spring with adjustment moved by the mechanism of the pump, so as to exert a greater tension when the closing movement of the valve is to be effected, and to relieve it when the opening movement of the valve takes place. 12th. The valve O connected to the rocking shafts N by arms M¹, and having arms N² adapted to not only indicate to the eye the working of the valve, but also to allow the application of mechanism to aid the operating. 13th. The removable bonnet M¹ forming the covering to the aperture for the attachment and removal of the valve and also the bearing for the shaft N, in combination with such shaft having arms N¹ N² and with the valve O in combination with operating means P and their connections. 14th. The rocking shaft N with its arms N¹ N², valve O, operating means P and their attachments worked by

the motion of the pump, combined so as to perform the triple functions of indicating to the eye the action of the valve contributing to balance the weight of the valve and promoting the motion thereof by power applied thereto. 15th. The employment in pumps of the adjusting means P¹ P², in combination with the self-acting valve O and with means N¹ N² for communicating force thereto. 16th. In combination with the shaft N carrying the arm N¹ and valve O, one or more removable bushes T adapted to be inserted from the outside, after the shaft is in position. 17th. The sleeve T¹ T² flanged as shown, the packing ring T³ and movable collar T⁴, in combination with the bushing T and with shaft N having the arms N¹ N² and attached valve O. 18th. The casing M, plungers S, valve O, split shaft N and split sleeve T¹, in combination with each other and with the taper screw N³ and arm N². 19th. The leather or equivalent pliable material U arranged in a ring, in combination with the holding plate M and cut ring V and arranged to serve relatively to the valve O. 20th. The ring valve W arranged relatively to the pump plunger S, and annular apertures M³. 21st. The ring valve W, in combination with the pump casing M and radial webs M⁴ having apertures *m*₄, for the free rising and falling of the valve and adapted to guide the valve. 22nd. The ring valve W, pump casing M webs M³ notched as shown, and springs O¹. 23rd. The ring valve W arranged to control the annular aperture *m*₃, in combination with the links X, lever N¹ and shaft N. 24th. A plunger pump having the two ring valves W W controlling the two apertures *m*₃ *m*₃.

No. 12,146. Improvements on Heating Furnaces. (*Perfectionnements aux calorifères.*)

William J. Copp, Hamilton, Ont., 23rd December, 1880; for 5 years.

Claim.—1st. The heating drums D E F, or more or less of them, in connection with corrugated stove A for the purpose of a heating furnace, built in or for a portable furnace. 2nd. The said drums as applied to the ordinary heating stoves. 3rd. The heating drums having curved or waving sides, in connection with the heating tubes H and the corrugated stove A. 4th. The dampers M in connection with the channels L, rods and handles N, the stove A and drums D E F.

No. 12,147. Machine for Measuring the Surface of Leather. (*Machine pour mesurer la surface du cuir.*)

Ernest Fortin, Quebec, Que., 23rd December, 1880; for 5 years.

Résumé. 1o. La charpente A en combinaison avec la balance B. 2o. Les leviers C C en combinaison avec les poulies E E¹ à engrenage, et les courroies J J. 3o. La table mobile G, la table trouée fixe H et la table I avec barres parallèles R R. 4o. La combinaison des aiguilles P P et des trons S S, des supports K K et du brancard M, le poids régulateur T et le cadran U.

No. 12,148. Improvements on Glove Fasteners. (*Perfectionnements aux agrafes des gants.*)

William H. Storey, Acton, Ont., 23rd December, 1880; for 5 years.

Claim.—1st. The combination, with the spring A of the stud buttons B B and the coupling plates C. 2nd. The stud button B, constructed in two sections, in combination with the coupling plates C and spring legs provided with the turned eyes A¹ A². 3rd. The combination with the glove provided with a wrist slit, of a spring fastener having diverging legs, finger studs, and coupling devices, adapted to open the wrist slit when uncoupled, and to draw the edges of the wrist slit together when closed. 4th. The combination, with the coupling plates C, of the cleats c c. 5th. The diverging legs A¹ A², cross bar A³, offsets *a a* and eyes A¹ A², all formed from a contiguous piece of metal.

No. 12,149. Improvements in Paper Bag Machines. (*Perfectionnements aux machines à sacs de papier.*)

William C. Cross, Boston, Mass., 23rd December, 1880; for 5 years.

Claim.—1st. The combination of the nipper cylinder, the nipper carried by the same, and the guide rod or bar. 2nd. The combination of the guide bar or rod, the nipper cylinder and nipper carried by said cylinder, and mechanism for continuously feeding along the paper tube or blank. 3rd. The combination of the feed mechanism, the nipper cylinder and its nipper, the guide rod or bar and the delivery rolls. 4th. The nipper cylinder and vibratory nipper carried by the same, in combination with the guide rod or bar recessed at that point which adjoins said cylinder. 5th. The combination of the nipper cylinder, its fellow roller, the nipper or jaw carried by said cylinder, and operated to move the feed rolls and the delivery rolls.

No. 12,150. Improvements in Feather Renovators. (*Perfectionnements aux machines à rafraîchir la plume.*)

William R. Sweet, Peru, Wis., U. S., 23rd December, 1880; for 5 years.

Claim.—The combination, with the vessel or chamber having double walls and a central longitudinal perforated tube, of the valve casing provided with a conical extension and with apertures for the escape of steam, and the hollow valve located in said casing and provided with apertures corresponding to the apertures in the valve casing, and the mechanism for operating the valve.

No. 12,151. Improvements in Covers and Binders. (*Perfectionnements aux couvertures-relieurs.*)

John Flynn and James Erwood, Hamilton, Ont., 23rd December, 1880; for 5 years.

Claim.—1st. The combination of the upper cover A and lower cover C, in connection with the hinge I, on the back F of the lower cover C. 2nd. The holder G on the inside of the back F, in connection with the cover C, binder B having a cutting edge, and the clip H, all operating substantially as and for the purpose of a binder and cover.

List of Patents issued up to 16th February, 1881, but not yet Officially published in the Patent Office Record.

- No. 12,220. Washburn and Moen Manufacturing Co., (Assignee of Peter Kelle Dederick), of Worcester, "Bailing Tin," (Extension of Patent No. 5,646), patented 15th January, 1881.
- No. 12,221. Washburn & Moen Manufacturing Co., (Extension of Patent No. 5,646), patented 17th January, 1881.
- No. 12,222. George W. Fitts, of South Hampton, New Hampshire, and LaRoy F. Griffin, of Lake Forest, Ill., "Safety Stop for Elevator," patented 17th January, 1881.
- No. 12,223. Michel Fiset, of Albany, N. Y., "Furniture Casters," patented 17th January, 1881.
- No. 12,224. Michel Fiset, of Albany, N. Y., "Shutter and Blind Fastener," patented January 17th, 1881.
- No. 12,225. Charles J. Shirreff, of Brockville, Ont., "Clothes Wringer," patented 17th January, 1881.
- No. 12,226. Andrew Randall, of Albany, N. Y., "Horse Boots," patented January 17th, 1881.
- No. 12,227. Samuel W. Brooke, of Newark, Ohio, "Meal Chests," patented January 17th, 1881.
- No. 12,228. Edward Davies, of Slandiman, Eng., "Injector Ejector," patented January 17th, 1881.
- No. 12,229. Martin B. Shenck, of Fulton, N. Y., "Stove Truck," patented January, 17th, 1881.
- No. 12,230. Henry B. Hayes, of Woburn, and Joshua Gray, of Medford, Mass., "Electric Railway Signalling Apparatus," patented January 17th, 1881.
- No. 12,231. Charles Fawcett, of Sackville, N. B., "Cook Stove," patented January 17th, 1881.
- No. 12,232. Benjamin F. Eaton, Coxsack, N. Y., "Cultivator," patented January 19th, 1881.
- No. 12,233. Donald D. Cattanaoh, of Providence, R. I., "Oil Process," patented January 19th, 1881.
- No. 12,234. Wm. DeLany, of Cobourg, Ont., "Fence Posts," patented January 19th, 1881.
- No. 12,235. John Eckford, San Antonio, Texas, "Counter Sinking Screw Head," patented January 19th, 1881.
- No. 12,236. George W. Rishel, of North Mountain, and Elias Rishel, of Turbotville, Penn., "Tire Tightener," patented January 19th, 1881.
- No. 12,237. Laning L. Ferris, of New York, "Bill and Letter File," patented January 19th, 1881.
- No. 12,238. Percival Eviritt, of London, Eng., "Rock Skate," patented January 19th, 1881.
- No. 12,239. John F. Curtice, Fort Wayne, Indiana, "Sad Iron Heater," patented January 17th, 1881.
- No. 12,240. George F. Griffin, London, Eng., "Tin Boxes," patented January 19th, 1881.
- No. 12,241. Thomas Henry, of Rockport, Ohio, "Thill Coupling," patented January 19th, 1881.
- No. 12,242. Peter K. Dederick, of Albany, N. Y., "Baling Press," patented January 19th, 1881.
- No. 12,243. John Cross, of Oakville, Ont., "Basket Former," patented January 19th, 1881.
- No. 12,244. Edward Joubert and James H. White, Glens Falls, New York, "Spring Buckboard," patented January 19th, 1881.
- No. 12,245. John Kinleyside, of Hamilton, Ont., "Washing Machines," patented January 19th, 1881.
- No. 12,246. Robert H. Isbell, of New Milford, Conn., "Mechanism for Ornamenting Buttons."
- No. 12,247. Henry Turner, of Montreal, "Pulley," patented 20th January, 1881.
- No. 12,248. William Lánhoff, Detroit, Mich., "Apparatus for Trimming or Smutting Wheat or Rye," patented January 20th, 1881.
- No. 12,249. Leon J. Bejottes and Joquin del Calvo, New York "Cigarette Machine," patented January 20th, 1881.
- No. 12,250. William H. Packham, of Dresden, Ont., "Stove Pipe Drum," patented January 20th, 1881.
- No. 12,251. William H. Murphy, of New York, and Alfred Ames, Howlett, Syracuse, "Paper Shovel Blade," patented January 20th, 1881.
- No. 12,252. Francis Stewart Malloch, of Brookville, Ont., "Machine for Rounding and Straight-ning Rods," (Extension of Patent No. 5,637), patented January 20th, 1881.
- No. 12,253. Francis Stewart Malloch, of Brookville, Ont., (Extension of Patent No. 5,637), patented January 21st, 1881.
- No. 12,254. William Potter, of Booneville, Oneida County, New York, (Assignee to Andrew J. Thayer and John E. Andrus, of Lyden, N. Y., (Extension of Patent No. 5,671), patented January 22nd, 1881.
- No. 12,255. Martin Halpenney and Edgar Benjamin Emmons, Pontiac, Mich., "Platform Spring Wagon," patented January 22nd, 1881.
- No. 12,257. John Augspurger, of Trenton, Ohio, "Drag Sawing Machine," patented January 22nd, 1881.
- No. 12,258. The Louisville Leaf Tobacco Co., of Louisville, Kentucky, (Assignee of Goldbrough Robinson), "Robinson's Process of Improving the Color and Quality of Leaf Tobacco," patented January 22nd, 1881.
- No. 12,259. Charles J. Van Depoele, of Detroit, Mich., "Electric Lampe," patented January 22nd, 1881.
- No. 12,260. Charles J. Van Depoele, of Detroit, Mich., "Dynamo Electric Machine," patented January 22nd, 1881.
- No. 12,261. Anson Mills, "Cartridge Belt Loom," patented January 22nd, 1881.
- No. 12,262. James E. Tyler, of Orange Court House, Virginia, "Machine for Edging Sheet Metal," patented January 25th, 1881.
- No. 12,263. Charles F. Pike, of Providence, R. I., "Steam Boiler Furnaces," patented January 25th, 1881.
- No. 12,264. Virgil H. Winchell, of Olive, New York, "Churn and Pump Power," patented January 25th, 1881.
- No. 12,265. George H. Babcock and Stephen Wjcox, of Plainfield, New York, (Assignees of George H. Bennett, of Bayonne, N. J.), "Tube Fastening for Sectional Boilers," patented January 25th, 1881.
- No. 12,266. John Page, of Glasgow, Lanark, Scotland, "Joints for Cast Iron Pipes," patented January 27th, 1881.
- No. 12,267. Charles F. Stillman, of Plainfield, New Jersey, "Splints and Surgical Braces," patented January 27th, 1881.
- No. 12,268. Oscar F. Tiffany, of Buffalo, N. Y., "Fruit Driers," patented January 27th, 1881.
- No. 12,269. John W. Duval, Grimsley, Ont., "Corn Planter," patented January 27th, 1881.
- No. 12,270. David H. Ingalls, of Dunham, Que., "Lightning Evaporator," patented January 27th, 1881.
- No. 12,271. Archibald W. Reid, of Sohenectady, New York, "Machine for Unhairing and Tanning Hides," patented January 27th, 1881.
- No. 12,272. William H. D. Newth, Detroit, Mich., "Blanket Holders," patented January 28th, 1881.
- No. 12,273. Robert Seldon, of Stafford, New York, "Potato Digger," patented January 28th, 1881.
- No. 12,274. John R. Norfolk, of Boston, Mass., "Fluid Meter," patented January 28th, 1881.
- No. 12,275. Oscar F. Tiffany, of Buffalo, N. Y., "Bleaching Apparatus," patented January 28th, 1881.
- No. 12,276. Joseph Best and Joseph Simpson, Montreal, "Shifting Rail for Carriage Tops," patented January 28th, 1881.
- No. 12,277. Hayward A. Harvey, of Orange, New Jersey, "Rolled Screws," patented January 28th, 1881.
- No. 12,278. John William O'Brien, of Petersburg, "Wall Coating, Tuck Pointing and Finishing," patented January 28th, 1881.
- No. 12,279. William Jones and William Glen, Toronto, Ont., "Clasp Horse Shoe," patented January 28th, 1881.
- No. 12,280. Simon B. Hunt, of New York, "Pneumatic Economizer for Ice Making or Refrigerating purposes," patented January 29th, 1881.
- No. 12,281. Simon B. Hunt, of New York, "Apparatus for producing Dry Atmospheric Air for Refrigerating, etc.," patented January 29th, 1881.
- No. 12,282. Simon B. Hunt, of New York, "Dry Atmospheric Air Process," patented January 29th, 1881.
- No. 12,283. James F. Guild, of Dundee, Scotland, and Arthur E. Knights, of New York, N. Y., "Steering Apparatus for Vessels," patented January 29th, 1881.
- No. 12,284. Lowell M. Palmer, of Brooklyn, N. Y. (Assignee of Emerson Cole), "Cole's Hoop Nailing Machine," patented January 29th, 1881.
- No. 12,285. John J. Johnston, of San Francisco, Cal., "Soldering Apparatus," patented January 31st, 1881.
- No. 12,286. David Groesbeck, of New York, "Spark Arrester," patented January 31st, 1881.
- No. 12,287. Charles F. Spencer, of Rochester, New York, "Drop Light," patented January 31st, 1881.
- No. 12,288. Charles F. Spencer, of Rochester, N. Y., "Stand and Bracket Lamp," patented January 31st, 1881.
- No. 12,289. Amasa C. Clark, of Manchester, Iowa, "Milk Cooler," patented January 31st, 1881.
- No. 12,290. George W. Friell, of Allinton, Penn., "Thill Coupling," patented January 31st, 1881.
- No. 12,291. Jacob Katzenberg of New York, U.S.A., "Royal Suspende," patented January 31st, 1881.
- No. 12,292. Andrew J. Hopkins, of Hamilton, "Force Pump," patented January 31st, 1881.
- No. 12,293. William C. Cross, of Boston, Mass., "Paper Bag Machine," patented January 31st, 1881.
- No. 12,294. David Clark, of Hallowell, Ont., "Roller Guard," patented January 31st, 1881.
- No. 12,295. Pierre E. Labelle, of Montreal, "Laeroix Lock," patented January 31st, 1881.
- No. 12,296. Walter R. Elmenhorst, of Montreal, "Melthod and Apparatus for Drying Bone Black," patented January 31st, 1881.
- No. 12,297. William W. Covey, of Littleton, New Hampshire, "Motive Power," patented January 31st, 1881.
- No. 12,298. John Campbell Mathews, of Buffalo, N. Y., "Automatic Car Coupling," patented January 31st, 1881.
- No. 12,299. William John Wilson, Stephenville, and James Beech, "Grain Roller," patented January 31st, 1881.
- No. 12,300. Stephen Haight, of New York, "Feeding and Water Devices for Cattle in Cars, on Ship board, and in Stables," patented January 31st, 1881.
- No. 12,301. The Suspension Car Truck Co., (Assignees of Richard Esmond, of Brooklyn, N. Y.) "Suspension Car Truck," patented January 31st, 1881.

No. 12,302. Felix Brown, New York, U.S., "Fog Signals," patented February 1st, 1881.

No. 12,303. Sydney Smith Grannis, of Red Wing, Minn., "Carpet Tack-ers," patented February 1st, 1881.

No. 12,304. Charles E. Stephens, of Northampton, Mass., "Composition for Grinding Wheels," patented February 1st, 1881.

No. 12,305. Francis D. Taylor, of Aston, England, "Washing Apparatus," patented February 1st, 1881.

No. 12,306. Albert F. Gue, and George F. Field, Boston, Mass., "Brake," patented February 1st, 1881.

No. 12,307. Charles Snieder, of New York, "Process for obtaining Relief Line Printing and Embossing Plates," patented February 1st, 1881.

No. 12,308. John H. Foster, of Chicago, Ill., "Nailing Machine," patented February 1st, 1881.

No. 12,309. John L. Tressler and William H. Loomis, of Alameda, Cal., "Improved Parlor Mantelgrates," patented February 1st, 1881.

No. 12,310. Everett Hosmer Barney, of Springfield, Mass., "Skates," patented February 1st, 1881.

No. 12,311. Rudolph D'Henreuse, of New York, "Starch and Glucose Process," patented February 1st, 1881.

No. 12,312. Ann E. Arnold, Providence, R. I., "Dry Process for Preserving," patented February 1st, 1881.

No. 12,313. Clark M. Platt, of Waterbury, Conn., and William W. Bradley, "Rivet and Eyelet Setting Machine," patented February 1st, 1881.

No. 12,314. Christopher C. Bradley, of Syracuse, N. Y., "Harvester," patented February 1st, 1881.

No. 12,315. Hiram Cowell, of Janesville, Ohio, "Furnace for Steam Boiler," patented February 7th, 1881.

No. 12,316. George R. Glasford, of Artimesia, Ont., "Combination Quilting Frame," patented February 7th, 1881.

No. 12,317. George Crawford McKenzie, of Collingwood, Ont., "Safety Car Coupling," patented February 7th, 1881.

No. 12,318. Edward A. Gillett, of Boston, Mass., and Oscar Gillett of Buffalo, N. Y., (Assignees of Samuel R. Bailey, of Boston.) "Wood Bending Machine," (Extension of Patent No. 5,666,) patented 7th February, 1881.

No. 12,319. Richard F. Bridewell, of San Francisco, Cal., "Bridewell's Machine for Dressing Stone, etc.," patented 7th February, 1881.

No. 12,320. Cornelius H. Delamatio and George H. Robinson, of New York, (Assignees of John Ericsson, "Ericsson Air Engine,") patented 7th February, 1881.

No. 12,321. Benjamin Handforth, of Hoboken, New Jersey, "Curtain Fixtures," patented February 7th, 1881.

No. 12,322. Henry H. Warren, of St. Paul, Que., "Agriculture Fork," patented February 7th, 1881.

No. 12,323. Henry H. Warren, of St. Paul, Que., "Garden Rake," patented February 7th, 1881.

No. 12,325. James Miller, Streetsville, Ont., "Rotary Carriage Painters Jack," patented February 7th, 1881.

No. 12,326. John Norcross Culbertson, Antwerp, Belgium, and James W. Brown, Surry, Eng., "Telephonic System," patented February 7th, 1881.

No. 12,327. Irving Austin Kilmer, of Kiskayma, New York, "Wire Bending Machine," patented February 7th, 1881.

No. 12,328. Irving A. Kilmer, Kiskayma, N. Y., "Wire Bending Machine, No. 2," patented February 7th, 1881.

No. 12,329. Russel Indicator Lock Co., (Assignee of Henry L. Russell,) "Indicator Lock," patented February 7th, 1881.

No. 12,330. Kenneth Knott, of London, Ont., and Edward P. Bridges, of same place, "Cattle Car and Fender," (Extension of Patent No. 5,678,) patented February 8th, 1881.

No. 12,331. Elihu Thomson, of New Britain, Conn., and Edwin J. Houston, of Philadelphia, "Armature for Dynamo Electric Machine," patented February 8th, 1881.

No. 12,332. Samuel Chur Bogart, and Joseph H. Milton, of Chatham, Ont., "Self Adjusting Burr Drivers," patented February 8th, 1881.

No. 12,333. Hosea K. Kriebel, of West Point, Penn., "Oscillating Steam Engine," patented February 8th, 1881.

No. 12,334. George W. Zeigler, of Tecumseh, machinist, Francis W. Beckwith, and John W. Kelly, of Detroit, Mich., "Mechanism for Operating Sewing Machines," patented February 8th, 1881.

No. 12,335. George Rumble, Berlin, Ont., (Assignee of Joseph K. Feick,) of Harrisburg, Ont., "Boot Tree," patented February 8th, 1881.

No. 12,336. George Rumble, Berlin, Ont., (Assignee of Joseph K. Feick,) of Harrisburg, Ont., "Boot Tree," patented February 9th, 1881.

No. 12,337. Samuel H. Johnson, of Stratford, England, "Glucose," patented February 9th, 1881.

No. 12,338. Samuel H. Johnson, of Stratford, England, "Glucose," patented February 10th, 1881.

No. 12,339. Andrew B. Battelle, Bellaire, Ohio, "Covering for Pipes and other Articles."

No. 12,340. The Russell Indicator Lock Co., Bloomington, Ill., (Assignee of Henry L. Russell,) "Indicator Lock," patented January 10th, 1881.

No. 12,341. Edwin J. Stonston, Philadelphia, Pa., and Elihu Thompson, New Britain, Conn., "Automatic Adjuster for Commutator Brushes of Dynamo-Electric Machines," patented February 10th, 1881.

No. 12,342. William H. Paige, Springfield, Mass., "Dump Car," patented February 10th, 1881.

No. 12,343. Charles Skinner, Robert Booth, and Thomas J. Tuck, Sherbrooke, Que., "Telephone," patented February 10th, 1881.

No. 12,344. Theodore M. Richardson and Lewis M. Partridge, "Thill Coupling," patented February 10th, 1881.

No. 12,345. Charles H. North, (Assignee of George F. Holland,) of Somerville, Mass., "Improvement for Preserving Edible Vegetable or Animal Matters," patented February 10th, 1881.

No. 12,346. Herbert Loud, of Everett, Mass., "Roller Bushing," patented February 10th, 1881.

No. 12,347. William F. Goodwin, of Stelton, New Jersey, "Steam Engines," patented February 11th, 1881.

No. 12,348. Frederick Siemens, Dresden, Germany, "Lamps," patented February 11th, 1881.

No. 12,349. James S. Heath and George W. W. Billings, Oshawa, Ont., "Seeder and Drill," patented February 11th, 1881.

No. 12,350. Nathan Campbell, Rochester, N. Y., (Assignee of Thomas Tait, "Water Wheel," (Extension of Patent No. 5,693,) patented February 14th, 1881.

No. 12,351. William Fairweather, of Susse, N. B., "Sleigh Shaft," patented February 14th, 1881.

No. 12,352. Albert E. Hall, of Plainfield, N. J., "Dredging Scoop," patented February 14th, 1881.

No. 12,353. Marquis L. Metcalf, of Willimantic, Conn., "Tube Cleaner," patented February 14th, 1881.

No. 12,354. Alphonse Montant, New York, "Catch for Holding Chest Covers," patented February 14th, 1881.

No. 12,355. Johannes Eekart, Munich, Bavaria, "Process of Preserving Food," patented February 14th, 1881.

No. 12,356. William W. Stewart, Brooklyn, N. Y., "Caligraphic Pen," patented February 14th, 1881.

No. 12,357. Augustin Balace, New York, "Apparatus and Method of Manufacture of Vehicle Wheels," patented February 14th, 1881.

No. 12,358. William N. Bath, of Michigan, "Telegraph Key," patented February 14th, 1881.

No. 12,359. Austin W. Goodell, Philadelphia, Pa., "Pressure Feed Roll Plaining Machine," patented February 14th, 1881.

No. 12,360. Franklin B. Stevens, of Port Huron, Mich., "Screw and Lifting Jack," patented February 14th, 1881.

No. 12,361. Charles Brewster, Montreal, Que., "Skate Attachment," patented February 16th, 1881.

No. 12,362. The Russell Indicator Lock Co., (Assignee of Lewis Russell, of Bloomington, Ill., "Indicator Pad Lock,") patented February 16th, 1881.

No. 12,363. Ray Hubble, Northville, N. Y., "Oil Cloth Corner," patented February 16th, 1881.

No. 12,364. Homer Pratt, and H. Peck, New York, N. Y., "Ear Drum," patented February 16th, 1881.

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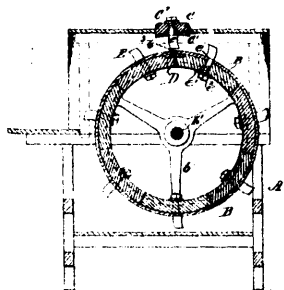
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ILLUSTRATIONS.

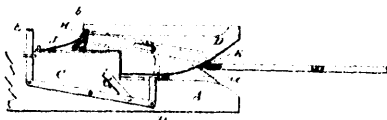
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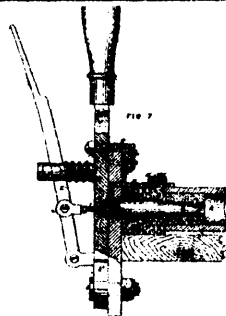
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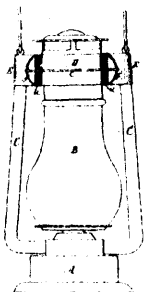
12020 Gray's Improvements on Thrashing Machines.



12021 Pogue's Improvements on Car Couplings.



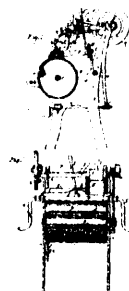
12022 Morris's Apparatus for Resizing, Uncaulping and Recapping Cartridges.



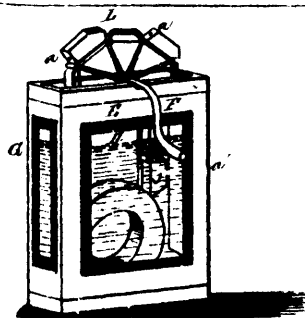
12023 Ham's Improvements on Lanterns.



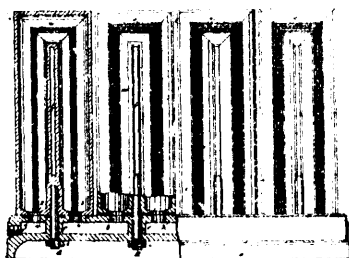
12025 Smith's Improvements in Canal Boats.



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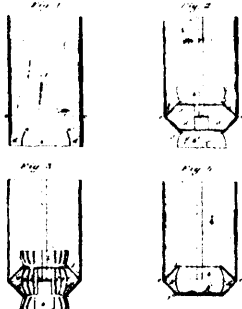
12030 Walworth's Improvements on Steam Radiators.



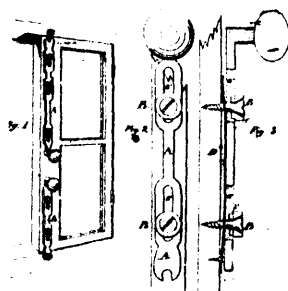
12031 Simons & Gebott's Improvements in Force Pumps.



12032 Mayer's Optometer.



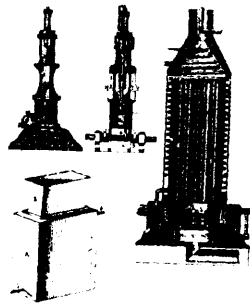
12033 Adams's Improvements on Paper Bags.



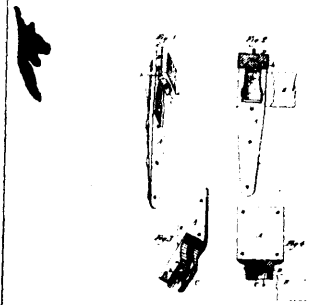
12034 Houle's Improvements on Window Bolts.



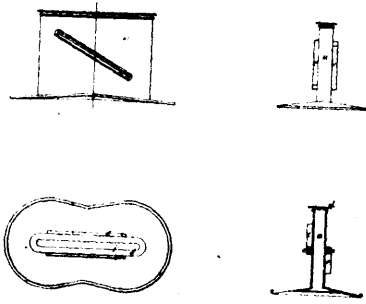
12035 Chivrell's Anti-frost Attachment for Store Windows.



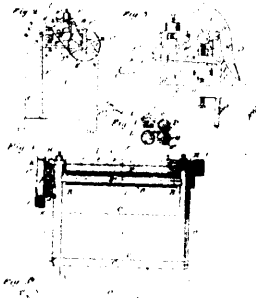
12036 Ballantine's Improvements in Ice Making Machinery.



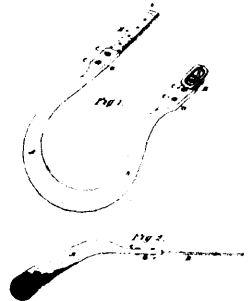
12037 Monteer's Improvements on Door Hangers.



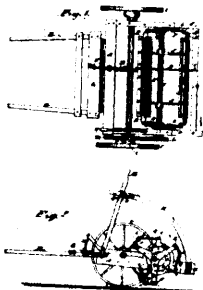
12038 Colletet's Improvements on Steam Washers.



12039 McDonald's Improvements in Hide Un-hairing Machines



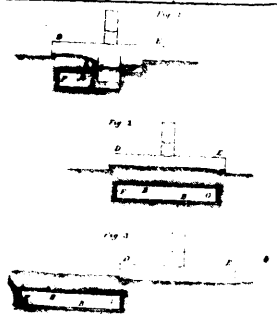
12040 Tobias' Improvements on Harness Cruppers.



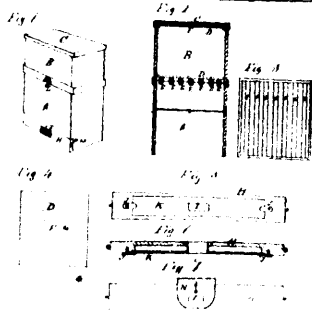
12041 Turnbull's Improvements on Sulky Weeding Machines.



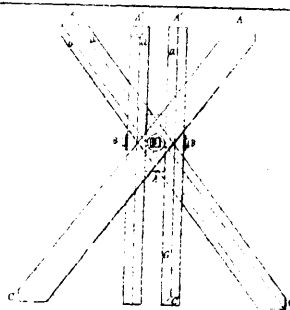
12042 Thompson's Improvements on Rat Traps.



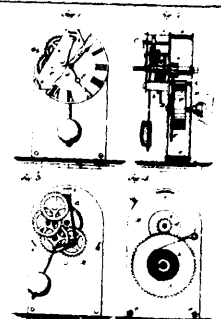
12043 Carson's Process of Constructing Subaqueous Tunnels, &c.



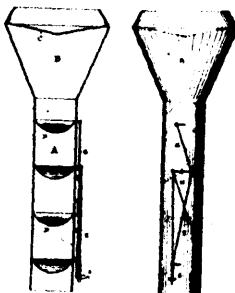
12044 Attwater's Improvements on Bee-hives.



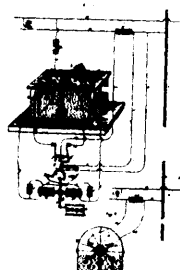
12045 Rawson's Folding Washing Bench.



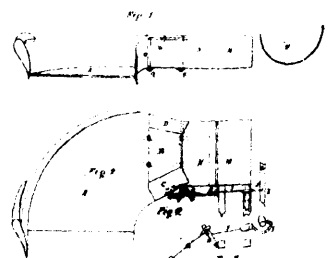
12046 Lane's Improvements on Clocks.



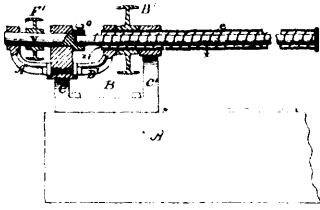
12048 Stevens's Improvements on Smoke Stacks for Steam Boilers.



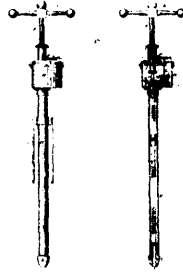
12049 Edison's Means for Measuring the Amount of Electrical Current Flowing through a Circuit.



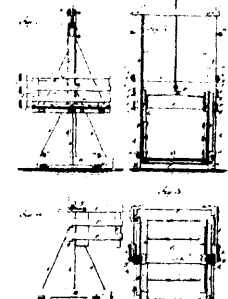
12050 Wood's Improvements on Making Plug Tobacco.



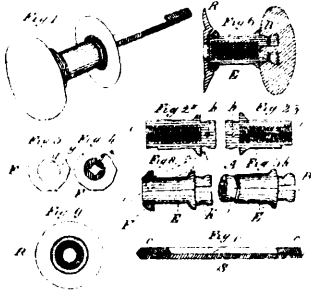
12051 Perkins's Improvements on Machines for Boring Wood Pipes.



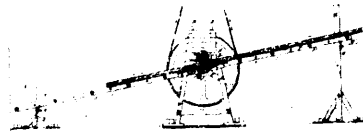
12052 Beach's Improvements on Ecraseurs.



12053 Kirkham's Improvements on Cattle Elevators.



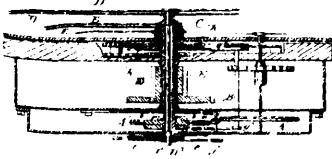
12054 Pettet's Improvements on Door Knobs.



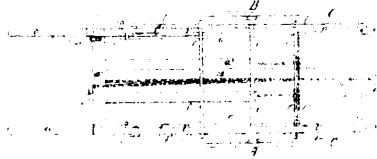
12055 Hazeland's Improvements on Wood Planing Machines.



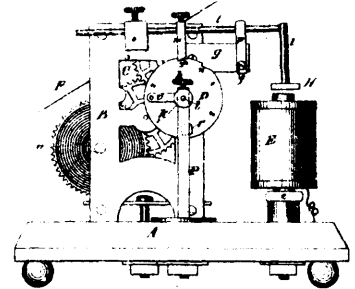
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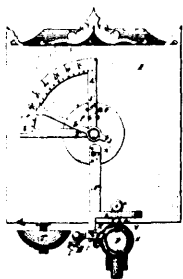
12057 Lugrin's Improvements on Stop Watches.



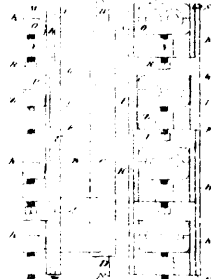
12058 Leyburn's Improvements on Hand Trucks.



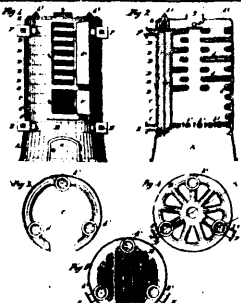
12059 Blake's Improvements on Call Bells.



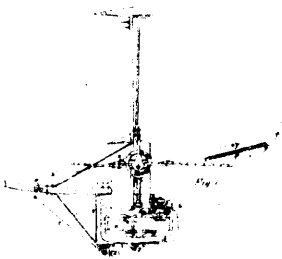
12060 Marchand's Improvements on Liquid Measures.



12061 Wells's Improvements on Apparatus for Tapping Steam Fitters.



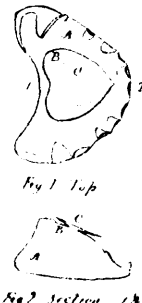
12062 Beupr e's Improvements in Boilers for Heating Water.



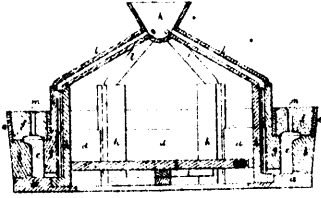
12063 Christie's Improvements on Harvesters.



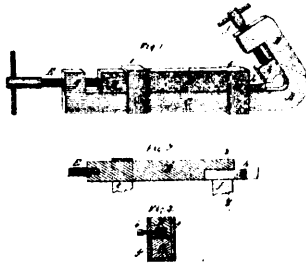
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12065 Yemer's Improvements on Dental Plates.



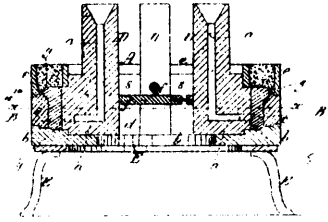
12066 Washburn's Improvements in Moulds for Casting the Ties of Railway Car Wheels.



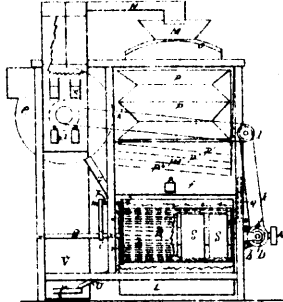
12068 Young's Improvements on Axle Cutters.



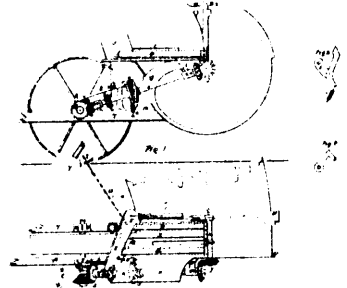
12070 Millard's Improvements in Scythe Blades.



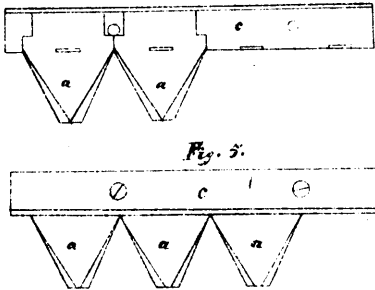
12071 Washburn's Improvements on Moulds for Casting Car Wheels.



12072 King's Combined Wheat Separator and Grain Scourer.



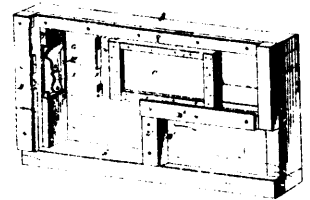
12073 Russell's Improvements on Harvesting Machines.



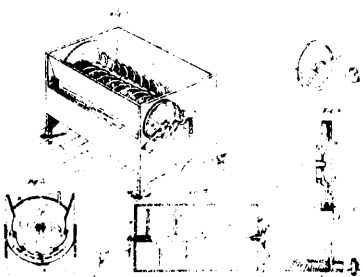
12074 Montross's Improvements on Cutter Bars for Harvester.



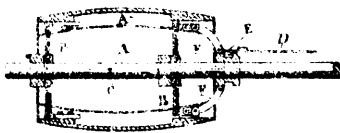
12075 Washburn's Improvement in Car Wheels



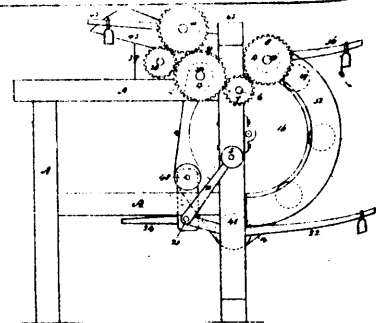
12076 Stratiff's Improvements in Car Doors.



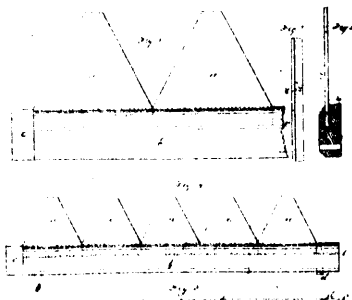
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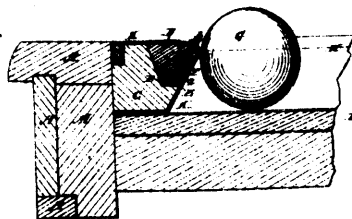
12078 Wright's Improvements on Barrel Forming Machines.



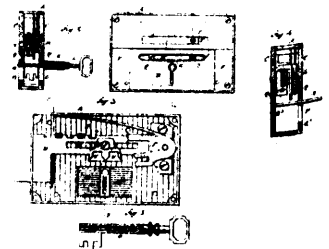
12079 Waddell's Improvements on Barrel Machinery.



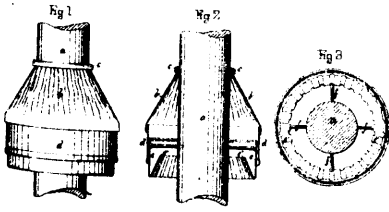
12080 Bell's Improvements in Mowing and Reaping Machines.



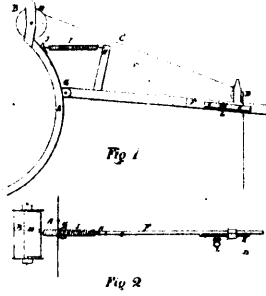
12081 May's Improvements on Billiard Cushions.



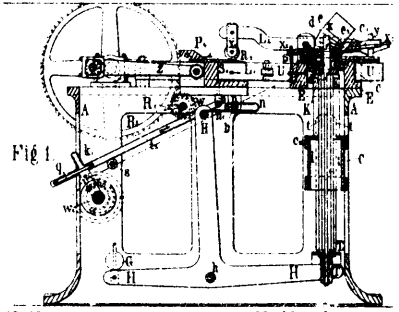
12082 Siragney's Improvements on Locks.



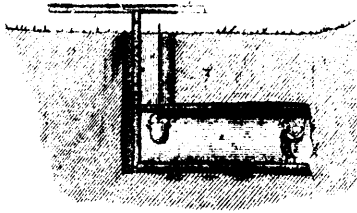
12083 Cook's Improvements on Tree Protectors.



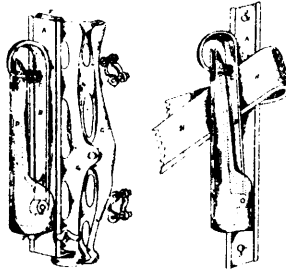
12084 Russell's Improvements on Harvesting and Binding Machines.



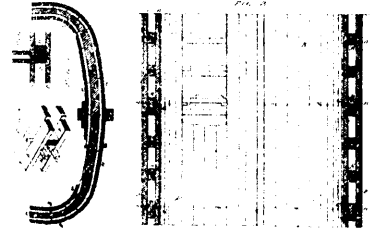
12085 Puschner's Improvements on Machines for Making Sheet Metal Elbow Pipes.



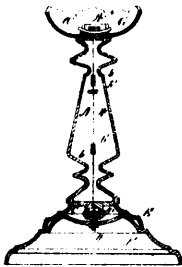
12086 Campbell's Improvements on Machines for Ventilating Mines.



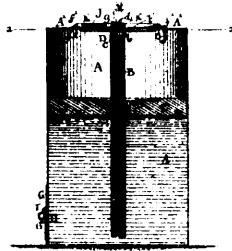
12087 Crawford's Improvements on Rein holders.



12090 Carter's Improvements on Wooden Vessels.



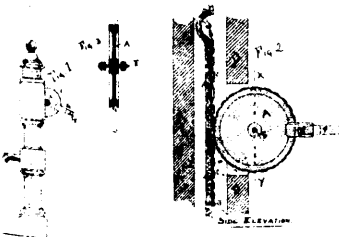
12091 Herrick, Wipfler & Roberts's Improvements on Stove Uras.



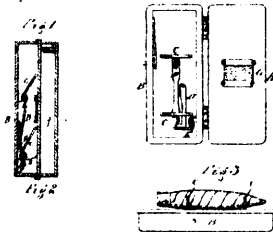
12092 Devoe's Improvements on Paint Cans.



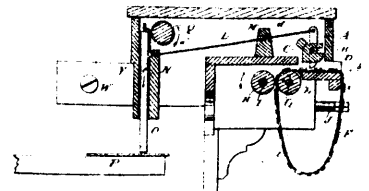
12093 King's Improvements on Car Trucks.



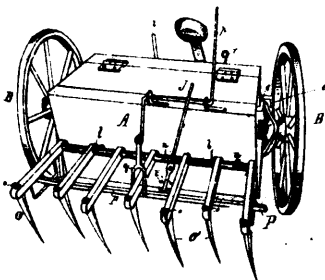
12094 Willcox's Improvements on Pump Gearing.



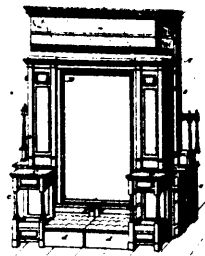
12095 Schafer's Improvements on Match Boxes.



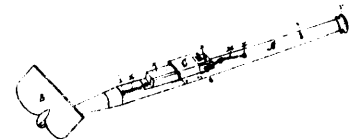
12101 Reynolds's Improvements on Key Boards of Musical Instruments.



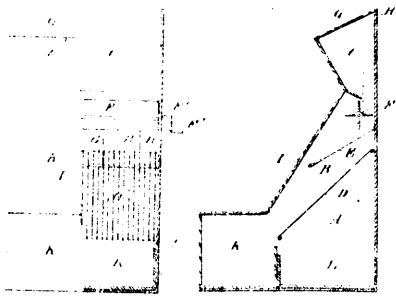
12102 Richardson & Nichols's Improvements in Broadcast Seed Sowers.



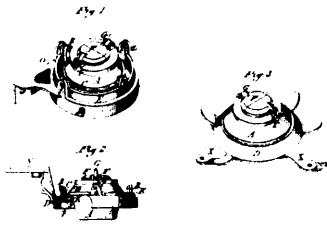
12103 Rieckert's Improvements on Dressing case Bedsteads.



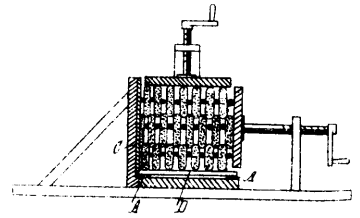
12104 Putnam's Improvements in Hand Corn Planters.



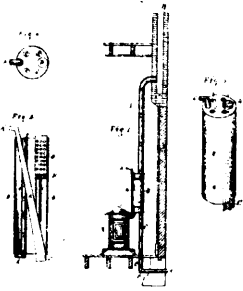
12105 Brown's Improvements in Ash Sifters.



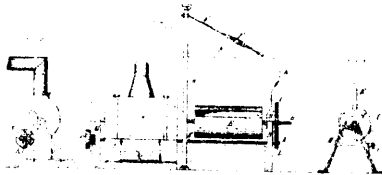
12106 Stiles's Improvements on Ink Stands.



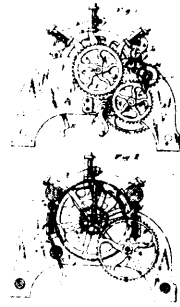
12107 Tym's Improvements in the Art of Packing Brooms.



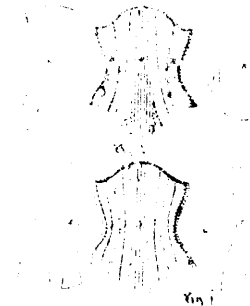
12108 Greenwood's Improvements in Air Heaters.



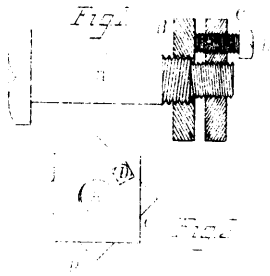
12109 Marrotte's Improvements in Coffee Roasters.



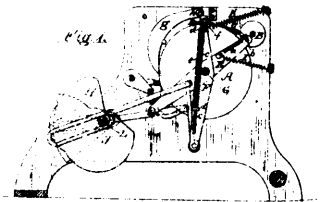
12110 Cross's Improvements in Paper Bag Machines.



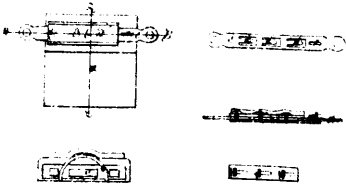
12111 Guthrie's Improvements on Corsets.



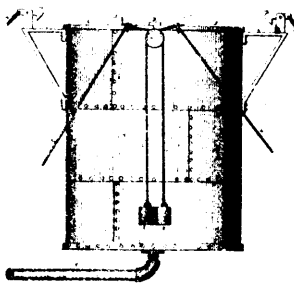
12112 Wyukood's Improvements on Nut Locks.



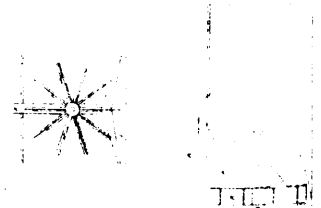
12113 Cross's Improvements in Paper Bag Machines.



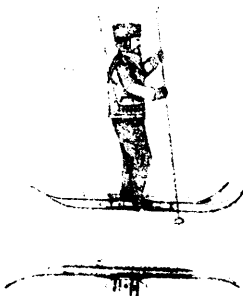
12114 Viger's Machine for Closing Mail Bags.



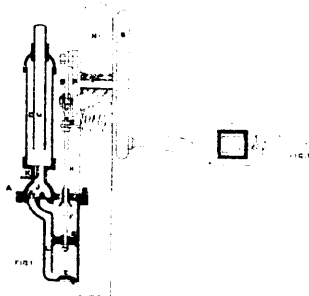
12115 Campbell's Improvements on Fire Extinguishing Machines.



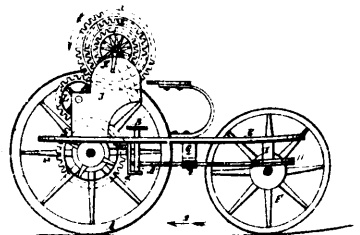
12116 Dussault & Morency's Improvements on Snow Ploughs.



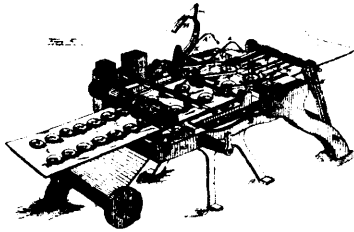
12117 Caldwell & Huss's Improvement on Snowshoes.



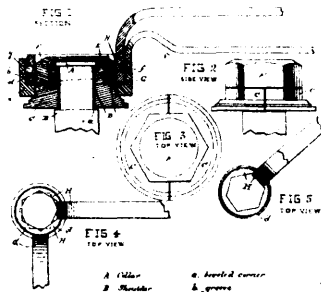
12118 Kinleyside's Improvements on Metal Pumps.



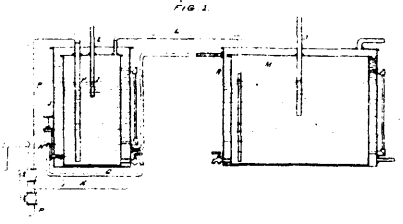
12119 Johnson's Improvements in Velocipedes.



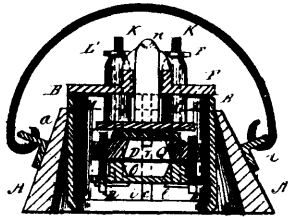
12120 Otis' Machine for Securing Buttons to Cards.



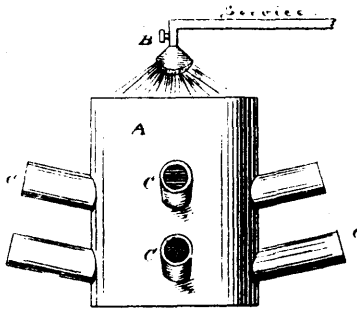
12121 Anderson's Improvements on Safety Nuts for Vehicle Axles.



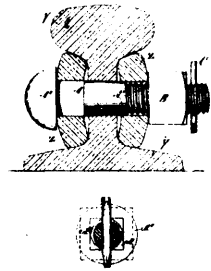
12122 Marsh's Process and Apparatus for Manufacturing Aqua Ammonia.



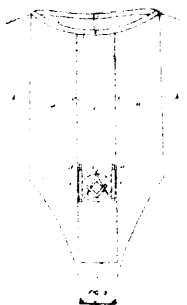
12123 Dobbins's Apparatus for Treating Celluloid Bases for Artificial Teeth.



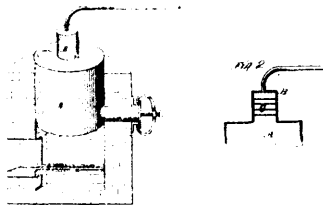
12124 Brown's Improvements on Refrigerators.



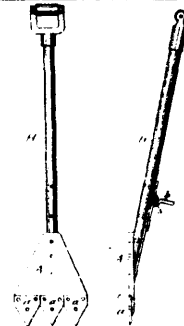
12125 Taylor's Improvements in Nut Locks.



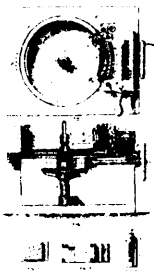
12126 Devereux's Improvements in Shirt Bosoms Fronts.



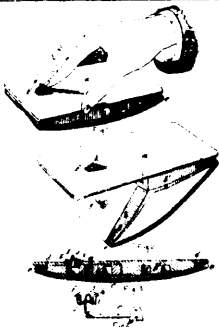
12227 Dean's Improvements in Purifying Oils.



12228 Heath's Improvements on Hay Knives.



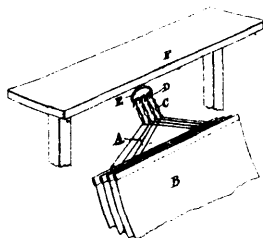
12229 Cruickshank's Improvements on Machines for Cutting Horns.



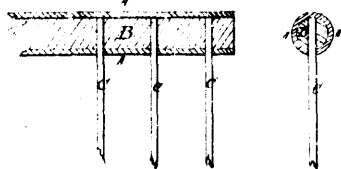
12230 Lushopp's Improvements in Blotting Pads.



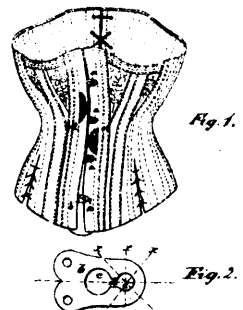
12231 Brown's Improvements on Suspenders.



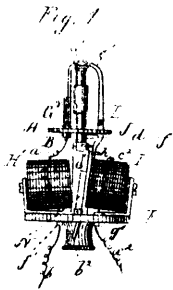
12232 Campbell's Map Stand.



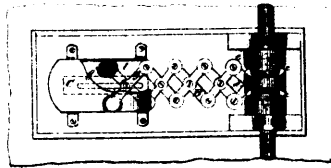
12233 Russell's Improvements on Hay Rakes.



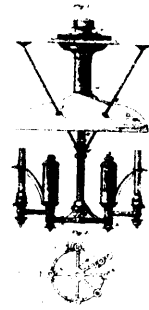
12234 Henins's Improvement on Corset Clasps.



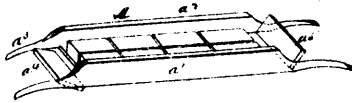
12236 Sirrell's Improvements on Electric Gas Lighting Apparatus.



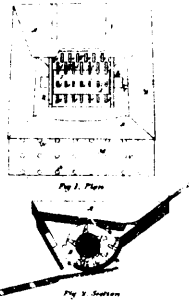
12237 Ellithorp's Improvements on Sewing Machines.



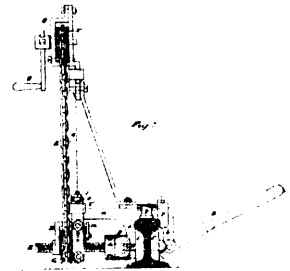
12238 Harrison's Improvements on Lamps.



12239 Ludlow's Improvements on Brick Off-bearing Cases (Hand Barrows.)



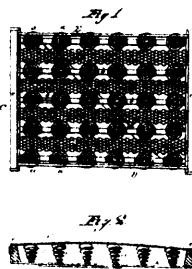
12240 Burke's Improvements on Grain Cleaning Machines.



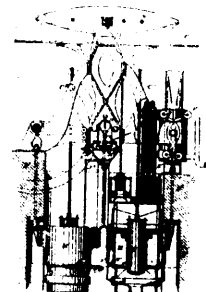
12241 McDonell's Improvements on Railway Nut Wrenches.



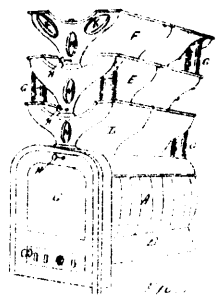
12242 Glover & Epps's Improvements on Force Pumps.



12243 Mallette, Raymond & Johnston's Improvements on Bed Bottoms.



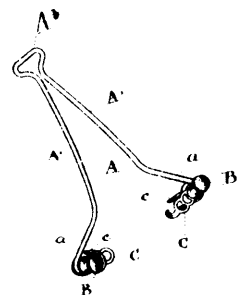
12245 Corlies's Improvements on Steam Pumping Machinery.



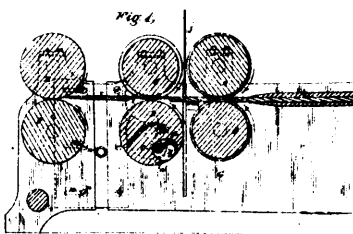
12246 Copp's Improvements on Heating Furnaces.



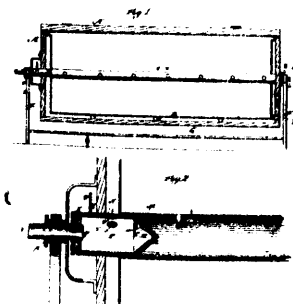
12247 Fortin's Machine for Measuring the Surface of Leather.



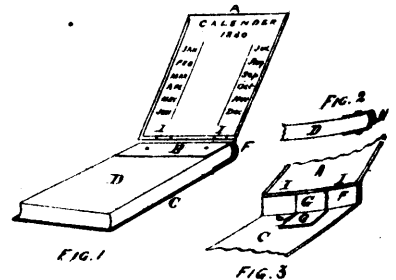
12248 Storey's Improvements on Glove Fasteners.



12249 Cross's Improvements in Paper Bag Machines.



12250 Sweet's Improvements in Feather Renovators.



12251 Flynn & Erwood's Improvement in Covers and Binders.