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# The Canadian Patent Office

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### INVENTIONS PATENTED.

#### No. 8345. Improvements on Stove Dampers.

(Perfectionnements aux registres des poêles.)

George W. Herrick, Detroit, Mich., U.S., 22nd January, 1878, for 5 years.

Claim.—In the stove structures, the combined dampers and flue strips D a, arranged to operate with one or more of the stove flues.

#### No. 8346. Improvements in Horse Shoes.

(Perfectionnements dans les fers à cheval.)

George Bryden, Hartford, Ct., William E. Banks, Brooklyn, N.Y., and John B. White, New York, U.S., 26th January, 1878, for 5 years.

Claim.—1st. A die-swaged horse shoe having toe and heel calks welded thereon in the dies, 2nd. A die-swaged horse shoe having attached hoof clips cut from its marginal fin; 3rd. A horse shoe calk constructed in the shape of a truncated cone, with a long oval or elliptic base; 4th. A horse shoe having oblong heel calks arranged longitudinally on the respective heel ends of the shoe; 5th. The process of partially making a horse shoe, by swaging an iron blank of the required outline and welding steel calks thereon, in one or more sets of dies; 6th. The process of making a horse shoe, by employing a straight preliminary blank of flat bar iron, bending said blank around a former, swaging the flat blank and welding steel calks thereon, in one or more sets of dies, and removing the marginal fin by means of trimming dies; 7th. A pair of dies for swaging horse shoes constructed with marginal recess and with depressions or pockets in the bottom of said recess, for holding steel calks in proper relative positions, so that said calks may be welded on the shoe blank simultaneously with the swaging of the latter; 8th. The combination of a lower swaging die constructed with a deep marginal recess having elevated portions adapted to provide the face of a horse shoe with deep nail creases and retracting outer edges, and pockets for holding calks to be attached by welding, and an upper die having a flat face simply provided with a slight prominence for inwardly beveling the top of the shoe, so as to render the same concave, the fin being thus caused to escape in the plane of the top of the shoe; 9th. An improved pair of trimming dies constructed with notches and projections so as to provide the shoes with attached hoof clips cut from the fins aforesaid.

#### No. 8347. Improvements in Horse Shoes.

(Perfectionnements dans les fers à cheval.)

George Bryden, Hartford, Ct., William E. Banks, Brooklyn, N.Y., and John B. White, New York, U.S., 26th January, 1878, for 5 years.

Claim.—1st. A die-swaged horse shoe having raised calk sockets formed thereon in the dies and provided with removable steel calks, 2nd. A die swaged horse shoe having vertical hoof clips formed thereon in the dies. 3rd. The process of swaging a horse shoe in one or more pairs of dies, providing it in said dies with vertical hoof clips, and removing all the fin by means of a pair of trimming dies; 4th. A pair of dies for swaging horse shoes, constructed with a marginal recess containing depressions and projections, so as to form calk sockets on the face or bottom of each shoe; 5th. A pair of dies for swaging horse shoes, constructed with depressions for raising vertical hoof clips on each shoe; 6th. A pair of dies for swaging horse shoes, constructed with depressions in the respective dies for raising calk sockets on the face or bottom, and vertical hoof clips on the top or back of each shoe at one operation; 7th. The combination of a lower die, constructed with a marginal recess having depressions for forming raised calk sockets, and elevations for forming deep nail creases, and retracting outer edges on the face of a horse shoe, and an upper die provided with a prominence to render the top of the shoe concave, and with small recesses to raise vertical hoof clips on the shoe.

#### No. 8348. Art of Manufacturing Cylindrical Boxes.

(Art de fabriquer les boîtes cylindriques.)

Sullivan H. Penley, Toronto, Ont., 26th January, 1878, for 5 years.

Claim.—1st. The process of manufacturing cylindrical boxes and hollow shapes, by winding on a revolving form of the configuration desired rattan pith in convolutions or spirally and tacking the same to the form at intervals, then removing the shape from the form and cementing the coils fixedly together, to adhere to the required shape; 2nd. A cylindrical box or other hollow shape formed of rattan pith wound spirally on a former, and cemented to hold the coils integrally.

#### No. 8349. Art of Manufacturing Cylindrical Wooden Boxes.

(Art de fabriquer les boîtes cylindriques en bois.)

Sullivan H. Penley, Toronto, Ont., 26th January, 1878, for 5 years.

Claim.—1st. The process of constructing a cylindrical box from wood veneer, by closing the veneer while steamed on a form of the required internal size of the box, then sawing through the lapping portions radially, then cementing the cut edges and closing the same at one operation, on the top and bottom cylindrical ends cemented to adhere thereto, then cutting the cover section from the body section of the box, and relishing the inside of the former and the outside of the latter whereby the parts will fit together telescopically; 2nd. A cylindrical wooden box and cover formed of veneer, the ends of the veneer forming the cylinder and rim of cover abutting and cemented, and relished to telescope together.

#### No. 8350. Tubular Kerosene Lantern.

(Lanterne à kerosène tubulaire.)

John H. Stone, Hamilton, Ont., 26th January, 1878. (Re-issue of Patent No. 2156).

Claim.—1st. A tubular lantern having an enlarged air reservoir A, connecting and in combination with the side or draft tubes B B, 2nd. The bottom plate D in combination with the skirting L forming an air reservoir. 3rd. The cold air chamber F placed beneath the burner and provided with air holes f for the purpose of admitting cold air into the said chamber.

#### No. 8351. Improvement on Ladles for Metal Founding.

(Perfectionnement des cuillers pour le fonde des métaux.)

William Fawcett, Omaha, Neb., U.S., 26th January, 1878, for 5 years.

Claim.—The ladle D having a conduit B formed in the side thereof and opening into the bottom of the ladle.

#### No. 8352. Improvements on Machines for Making Paving-blocks.

(Perfectionnements aux machines à faire les blocs de pavage.)

Henry C. Sergeant, New York, U.S., 26th January, 1878, for 5 years.

Claim.—1st. A mould in which the material is received and pressed, having in its face a recess; 2nd. A presser having in its forward pressing end a curved recess, for the purpose of preventing the clogging of said presser; 3rd. A sliding mould having in a portion of its surface a series of apertures for relieving the same from obstruction in being operated by the accumulation of sticky or pasty substances; 4th. A presser having a longitudinal recess in its under surface and a vertical aperture through its body; 5th. The combination of the sliding mould D, levers D D the yoke D<sup>2</sup> and the cam B; 6th. The presser F carrying the yoke G for moving it forward and friction rollers for carrying rearward; 7th. The plunger H having a movement independent of the presser on its forward movement but carried rearward by a projection formed upon said presser; 8th. The combination of the presser F and the plunger H so arranged with reference to each other that they each have an independent forward movement, but so that the plunger is carried rearward by the movement of the presser; 9th. The combination of the cam C and yoke G; 10th. The cap I having upon its lower surface a bevelled projection for relieving the plunger; 11th. The hopper E when arranged with reference to the presser F and the sliding mould.

**No. 8353. Improvement on Geographical Clocks.** (*Perfectionnement des horloges géographiques.*)

William A. Cates, Union, Oregon, U. S., 26th January, 1878, for 5 years.

*Claim.*—A universal time piece, whose panoramic map or face plate revolves, is divided into twenty-four hours, as well as three hundred and sixty degrees, and is provided with an index adjustable on the h<sup>o</sup> of hour wheel, independently of hour hand.

**No. 8354. Improvements on Anchors.** (*Perfectionnements aux ancres.*)

Fisher A. Buck, Eastport, Me., U. S., 26th January, 1878, for 5 years.

*Claim.*—An anchor formed of a shank with radial branching and upwardly curved arms, carrying at the outer ends an inclined and tapering fluke of circular shape.

**No. 8355. Improvements in Seythe Fasteners.** (*Perfectionnements dans les manches des faulx.*)

Miles Smith, Springfield, Vt., U. S., 26th January, 1878, for 5 years.

*Claim.*—1st. The combination of the pivoted vibrating plate E having one or more tapering or radial sockets recesses or slots, and having the rib *e* at its free end and the hooked retaining bolt F, with the snath, say the ordinary clamping device at the end of the snath. The combination of the clamping bolt, the swinging socket-plate having a roughened under surface at its free end and a plate arranged upon the snath, and having a roughened upper surface to clutch the swinging socket-plate from the action of the bolt, 3rd. The plate G having a roughened outer surface and an opening *e*, in combination with the swinging socket B having a roughened under surface, and the clamp bolt F passing through the opening of the plate G and arranged to clamp the parts as described.

**No. 8356. Improvements on Disintegrating Machines.** (*Perfectionnements aux machines à désagréger.*)

David C. Ebaugh, Charleston, S. C., U. S., 26th January, 1878, for 15 years.

*Claim.*—1st. The saucer shaped runner, having its concave face provided with a suitable dress or furrows, with a series of hammers, and with a raised ring or rim on its periphery. 2nd. The saucer-shaped runner constructed of cast metal, with a raised ring or rim of chilled iron or steel inserted therein. 3rd. The combination of horizontal oppositely-revolving concave or saucer-shaped runners, having raised rims or flanges and arranged with their concave faces opposite each other, whereby material may be fed in bulk between the runners and disintegrated by the attrition of one particle upon another, and by the action of the runners, and retained between them until sufficiently reduced to pass between the rims; 4th. The combination of saucer-shaped horizontal oppositely-revolving runners, having their concave faces opposite each other and being provided with furrows, hammers and raised rims, whereby the material fed to the runners is disintegrated by the attrition of one particle upon another and by the furrows and hammers, and retained by the rims until thoroughly pulverized; 5th. The combination of horizontal saucer-shaped oppositely-revolving runners, the hollow upper spindle through which the feed passes, the lower spindle stopped upon a bridge-tree and the driving gearing.

**No. 8357. Improvements on Rock Drills.** (*Perfectionnements aux forets de mines.*)

Henry C. Sergeant, New York, U. S., 26th January, 1878, for 5 years.

*Claim.*—1st. In combination with an adjustable tripod for a rock drill, guide rods for giving direction to the cylinder and drill; 2nd. A slide valve moving in a cylinder and upon a rod, passing through its centre, for guiding the valve and for reducing the wear there of. 3rd. The combination of a bolt passing through the centre of a steam induction and ejection valve, a steam chest, cushions for receiving the valve at the end of its stroke, and a valve for controlling the ingress and egress of steam. 4th. The combination and arrangement of the steam ports C and C<sup>5</sup>, D<sup>1</sup> and D<sup>2</sup>, for regulating the exhaust of steam from the ends of an automatically operating valve; 5th. The combination of the exhaust ports D<sup>4</sup> and D<sup>5</sup>, and the cavity F<sup>1</sup> in the body of the piston; 6th. A rod or bar for feeding the drill forward and revolving it, having a fluted surface upon a portion thereof and a screw thread upon another portion; 7th. The chuck for holding the drill of a rock drilling machine, when constructed with a screw thread and socket in its upper end, for attaching it to its operating rod, and a slit in its lower end for causing it to be made to firmly clasp and secure the drill in its position.

**No. 8358. Improvements on Telephones.** (*Perfectionnements aux téléphones.*)

George B. Richmond and Alfred Beamer, Lansing, Mich., U. S., 26th January, 1878, for 5 years.

*Claim.*—1st. In a hydro-electric telephone, the combination with the vertical diaphragm, of the horizontal platinum points and the water tube containing sufficient water, or other equivalent fluid to cover the platinum; 2nd. The flexible water tube, 3rd. The combination of the flexible water tube E, of the rigid tube E<sup>1</sup> upon which the flexible tube is mounted; 4th. The wire G projecting into the water tube and covered, except at its point G<sup>1</sup>, with a non-conducting material. 5th. The combination of the platinum points D<sup>1</sup> G<sup>1</sup> projecting into the water tube, of the screw F carrying one of the points. 6th. The combination with circular diaphragm B, of the annular screw threaded frame A against the end of which the diaphragm is placed and the screw threaded ring b; 7th. The combination with the diaphragm of the flexible water tube and the platinum points passed through the walls, of the flexible tube on the opposite sides thereof, and an line with the centre of the diaphragm; 8th. The combination with the standard A, of the cap C having central opening and mouth piece for covering and protecting the diaphragm. 9th. The frame for a telephone, consisting of the base A, standard A<sup>1</sup> and cap C; 10th. In a telephone, a volume of water or other equivalent fluid placed between the platinum points D<sup>1</sup> G<sup>1</sup>, 11th. The electro-magnet M in combination with the transmitting mechanism for receiving sounds. 12th. A hydro electric telephone worked by an electric battery W.

**No. 8359. Improvements on Hay and Grain Elevating Cars.** (*Perfectionnements aux voitures à élever le foin et le grain.*)

George A. Dickson, Shortsville, N. Y., U. S., 26th January, 1878, for 5 years.

*Claim.*—1st. The double open rail track B extending from end to end of building and inclined at the central or elevating point B<sup>1</sup> to a lower level, for the purpose of retarding the motion of the car when the tension on the rope is greatest, and to facilitate the return of the unloaded car to its central locking position; 2nd. An elevating and distributing car provided with the pendant frame, having a sheave pulley E, tripping levers and pawls, for retaining it in a temporary position while elevating the draft, and a draft rope cam a; 3rd. The combination of the elevating and distributing car having pendant frame carrying the sheave, tripping levers and pawls, and the rope cam a with the central locking, tripping and reversing plates G. 4th. The plates G provided with stop block g and curved slots e e, arranged in connection with an elevating and distributing car to lock it in position when elevating, to release the elevating rope when the car is returned to its central position, and to reverse the action of the cam lock on the elevating rope, in order to distribute to either end of the building; 5th. The combination of the elevating and distributing car C, locking, tripping and reversing plates G, and elevating ropes passing through suitable pulleys d d<sup>1</sup> d<sup>2</sup> of the small connecting line M, with depending hauled lines N and weight O, whereby the position of the cam wheel locking the elevating rope, and the elevating rope, may be changed to allow the car to distribute its load to either end from the centre, the said combination also permitting the whole change to be made from the floor level; 6th. The tripping levers F provided with eyes F<sup>1</sup> at their lower end and jointed in order to direct the elevating rope into the sheave at any angle. 7th. The double locking pawls f f, in combination with the plates G; 8th. The cam locking wheel a provided with projecting-pins b, in combination with the elevating rope H, sheave P and plates G.

**No. 8360. Improvement on Coasting Sleds.** (*Perfectionnement des traîneaux côtiers.*)

Charles H. R. Triebels and Edward Henderson, (Assignees of Henry S. Miller,) Philadelphia, Pa., U. S., 26th January, 1878, for 5 years.

*Claim.*—The combination with the main frame of a sled, of a pivoted supplementary frame having guide runners, a segment gear secured upon the supplementary frame, concentric with its pivots and meshing with a segment gear pivoted to the main frame and longitudinal slide bars moving in guides upon the main frame, and engaging pins upon the sides of its segment gear.

**No. 8361. Improvements on Steam Generators.** (*Perfectionnements aux générateurs de vapeur.*)

William P. Trowbridge, New-Haven, Ct., U. S., 26th January, 1878, for 15 years.

*Claim.*—1st. In a steam generating apparatus, the combination of the fire box, cylindrical shell above it, an inner fuel cylinder, or reservoir arranged so as to leave a space between the said shell and reservoir, and a water coil around said fire box extending upward, and through said space between the shell and reservoir; 2nd. In combination with the subject matter of the first claim, an auxiliary chamber into which the upper end of the said coil conducts the steam. 3rd. The combination of the subject matter of the second clause of claim, with a circulating pump, taking the water from the said auxiliary chamber, and returning it to the lower part of the coil. 4th. The combination of the subject matter of the second claim, with an automatic water feeding device so as to maintain a constant and predetermined water level.

**No. 8362. Improvements on Tonguing and Grooving Machines.** (*Perfectionnements aux machines à rainures et languettes.*)

Warren S. Mayo, Ottawa, Ont., 26th January, 1878, for 5 years.

*Claim.*—1st. The combination of the cutters T T, rotating in opposite directions in the same plane upon independent arbours and feed rollers R R, and U U U, operated mechanically, whereby the material gripped by the rollers is fed automatically to the cutters; 2nd. The combination with the cutters Z Z, rotating in opposite directions in the same plane of bed pieces 7, adjustable inclinedly from the ends by screws 9, and having adjustable guide strips 8, to regulate the depth of the cut and to guide the stuff to the cutters; 3rd. The combination of the bed pieces 7 inclinedly adjustable from either end floor 11, having adjustable guide strips 12, feed rollers R R, and friction rollers U U U, automatically adjustable, whereby the material is held from tremulous motion. 4th. The combination of the rotary cutters Z Z, rotating in opposite directions in the same plane feed rollers R R, bevelled gear wheels L M, shaft L, bevel gears O P and shaft M, for feeding the stuff to the cutters automatically.

**No. 8363. Improvements on Water Motors.** (*Perfectionnements aux moteurs hydrauliques.*)

Frederick W. Tuerk, Berlin, Ont., (Assignee of Frederick W. Tuerk, Jr., Chicago, Ill., U. S.) 26th January, 1878, for 5 years.

*Claim.*—1st. The partition E, between the edge of the case and the wheel, diverging about the opening G, and at its terminus approaching close to the rim of the wheel; 2nd. The passages F and F<sup>1</sup>, whereby the pressure of the water acts at the same time and in the same manner upon opposite sides of the wheel; 3rd. The passage F and a part of the passage F<sup>1</sup>, corresponding to the same, each made larger at its beginning than further on, the length of the narrower or shallower part being equal to the distance between two consecutive buckets, whereby the pressure of the water acts continuously upon each bucket in its turn until the said bucket reaches the opening G. 4th. In combination with the buckets b, working in recess in the rim of the wheel, and held in place by pivots which on one side pass through the said rim and on the other through cap-plates, the buckets being less in breadth than the rim of the wheel to the extent of the thickness of the said cap plates, and the ring flange c. 5th. In combination with the buckets b, the flange c, projecting inward from the outer edges of the said buckets, and

working in recesses formed in the side of the wheel-rim; 6th. The combination of the arms *c*, and flange *g*, for opening the buckets gradually as the wheel revolves; 7th. The curved projections *kt* to close the buckets gradually at the proper time as the wheel revolves; 8th. The method of reclosing the buckets, which consists in causing the water, after it has done its work in impelling a bucket forward, so to change its course as to strike against the back of the same bucket; 9th. The curved and wedge shaped chambers *ll* perforated or slotted on their sides next to the wheel and placed as described with relation to the openings *q* whereby the buckets are closed by the escaping water; 10th. The combination of the chute *p*, case *A*, partition *E* flange projection *f* and openings *q*. 11th. The combination of the buckets *b*, arms *c*, flanges *g*, flanges *kt*, wheel *ll*, and shaft *S*; 12th. The combination of the chute *p*, passages *F*, wheel *ll*, openings *q*, buckets *b*, arms *c*, flanges *g*, flanges *kt*, wheel *ll* and shafts *S*.

**No. 8364. Improvement in Lawn Sprinklers.**  
(*Perfectionnement dans les arrosoirs de gazon.*)

Richard P. Street, Hamilton, Ont., (Assignee of Cornelius E. Haynes-Boston, Mass., U.S.) 26th January, 1878, for 5 years.

**Claim.**—1st. A screw-threaded thimble *A*, with neck *B* annular projection *C*, orifice *F* to be used in combination with a lawn hose stand; 2nd. In combination with a lawn sprinker of the ear-shaped wings *E* *F* attached to a swivel *D*, or its equivalent; 3rd. A lawn sprinker consisting of the combination of thimble *A*, neck *B*, annular-ring *C*, swivel *D*, wings *E* *F* and openings *F*.

**No. 8365. Improvements on Coal Stoves.**  
(*Perfectionnements aux poeles à charbon.*)

James Good, Toronto, Ont., 26th January, 1878, for 5 years.

**Claim.**—1st. The oven *F* consisting of inner and outer walls *G* *H*, with sides provided with doors *I*, forming a circulating passage having an outlet pipe *K*, connecting the circulating passage with a pipe *L*, said passage connected to an aperture *J*, in the stove above the fire-pot; 2nd. The elevated oven attachment *F* having a circulating passage around the same formed by the walls *G* *H* in direct connection with an aperture *J* in the stove *A* above the fire-pot *C*, and terminating in a smoke pipe *L* connected to the stove above the oven.

**No. 8366. Improvements on Multiple Telegraphy.**  
(*Perfectionnements à la télégraphie multiple.*)

Elisha Gray, Chicago, Ill. U. S., 26th January, 1878, for 5 years.

**Claim.**—1st. The described improvement in telegraphy under the Morse-Telephonic system, which improvement consists in keeping an even electric force upon the line, whether the battery or any portion of it is in vibration or at rest, by compensating the vibrations in the electric force caused by throwing the telephonic system on or off the line; 2nd. The combination in an electric circuit of a Morse transmitting apparatus, telephonic transmitting apparatus a main battery and a compensating adjustment, whereby the disturbance of equilibrium caused by the throwing of the telephonic apparatus into and out of line is instantaneously and automatically compensated; 3rd. The combination in a telegraphic circuit of a main battery, a compensating adjustment a telephonic transmitter, a continuity preserving key, and a shunt circuit, whereby the equilibrium of the electric force is preserved; 4th. The combination with a telephonic transmitting apparatus and a Morse apparatus of a rheostat which shunts the key and relay of the ordinary Morse apparatus; 5th. The combination of two branch-circuits in a main line, one embracing rheostat, the other one or more Morse-relays and keys; 6th. The combination in one circuit of a telephonic apparatus, Morse apparatus a rheostat shunting the Morse key and relay and a condenser which when the Morse key is closed, shunts both relay and rheostat, and when opened, shunts the resistance only, whereby an even vibratory current is maintained upon the line; 7th. The combination of branch-circuits, a key a relay a resistance and a condenser which shunts the key and relay when the key is closed and the resistance when the key is opened; 8th. The combination in a branch-circuit of a relay, a key and a condenser shunting them.

**No. 8367. Improvements on Flue Cleaners.**  
(*Perfectionnements aux nettoyeurs de carneaux.*)

Orson B. Kendall, Buffalo, N. Y., U. S., 26th January, 1878, for 5 years.

**Claim.**—1st. The curved springs *A*, provided with tips or scrapers at each end in combination with the centre piece *A*, longitudinally movable expanding disks *B* *B* and rod *C*, provided with a right and left hand screw; 2nd. The cone-shaped guard nut *J*, combined with the rod *C* and handle *H*, serving as a guard for that end of the device and a coupling for the handle.

**No. 8368. Improvements on Steam Engines.**  
(*Perfectionnements aux machines à vapeur.*)

John Gohlie, Galt, Ont., 26th January, 1878, for 5 years.

**Claim.**—1st. The steam passages in cylinder; 2nd. The cams and lifters for operating the steam valves and their arrangement in connection with the governor for regulating the point of cut off of steam; 3rd. The exhaust cams with slides and lifters with the general arrangement of steam passage, valve gearing, &c.

**No. 8369. Improvements on Curry Combs.**  
(*Perfectionnements aux étrilles.*)

Charles A. Hotchkiss, Bridgeport, Ct., U.S., 26th January, 1878, for 5 years.

**Claim.**—1st. A grasping device *A* for the fingers and a thumb rest *B* for the thumb; 2nd. A grasping device *A* for the fingers, a thumb rest *B* for the thumb, and a side handle *C*; 3rd. A grasping device *A* for the fingers made out of one piece of metal, so as to form two bars extending across its back, with a thumb rest *B* for the thumb.

**No. 8370. Improvements on Pumps.**  
(*Perfectionnements aux pompes.*)

Tronson Draper, Petrolca, Ont., 26th January, 1878, for 5 years.

**Claim.**—1st. The weight *A* and its connection with the valve *D* by means of the tube *B* which also serves as a strainer, and the guide *C* combined and arranged as described; 2nd. The strainer *B*, tube *G* and the guide *C* in combination with the barrel *H* having the valve *D*, and valve *E*.

**No. 8371. Improvements on Telephones.**  
(*Perfectionnements aux téléphones.*)

Cyrille Duquet, Quebec, Que., 1st February, 1878, for 5 years.

**Claim.**—1st. The combination of a bundle or cluster of permanent steel magnets *C*, of any shape, with the body of a telephone; 2nd. The angles *K* inside the mouth-piece.

**No. 8372. Improvements on Rotary Churns.**  
(*Perfectionnements aux barattes rotatoires.*)

Ezra Buell, Havelton, N. Y., U. S., 1st February, 1878, for 10 years.

**Claim.**—1st. The post *A* and side pieces *D* adjustably connected together by the platform *F*, having cross bars *E* and braces *G* to support the churn *C*; 2nd. The bearings *B* having drop lugs *f*, to secure them to the posts *A* *A* by screws; 3rd. The churn barrel *C*, constructed with wings *H*, inserted between the staves and bound therewith by the hoops, and having unequal inclined surfaces *d* the meeting point *g* alternating from opposite ends of the barrel.

**No. 8373. Improvements on Headlights for Locomotives.**  
(*Perfectionnements aux lampes de locomotives.*)

Charles T. Ham, Rochester, N. Y., U. S., 1st February, 1878, for 5 years.

**Claim.**—1st. The combination of the burner *B*, reflector *C*, reservoir *D* and supply tube *a*; 2nd. The combination of the burner *B*, hinged reflector *C* and adjusting screw *h*; 3rd. The combination of the burner *B*, hinged reflector *C*, reservoir *D*, supply-pipe *a* and the slide board *F*; 4th. The combination of the burner *B*, hinged reflector *C*, reservoir *D*, supplementary reservoir *E* and supply tube *a*; 5th. The combination of the burner *B*, hinged reflector *C*, reservoir *D*, perforated slide board *F* and perforated base-board *G*.

**No. 8374. Improvements on Ironing and Fluting Irons.**  
(*Perfectionnements aux fers à repasser et luyouter.*)

William Chalmers and William N. Reynolds, Detroit, Mich., U.S., 1st February, 1878, for 5 years.

**Claim.**—1st. The hollow irons *A*; 2nd. The heater; 3rd. The hollow fluter; 4th. The roller of the fluter; 5th. The handle of the double roller; 6th. The combination of the hollow iron, heater, hollow fluter and roller, and the handle.

**No. 8375. Improvements on Millstone Dressing Machines.**  
(*Perfectionnements aux machines à rabiller les meules.*)

Samuel E. Griceon, Pottsville, Pa. U. S. (Assignee of Leonard Moore, Cole's Creek, Pa., U. S.) 1st February, 1878, for 5 years.

**Claim.**—1st. The combination of the following elements, namely: a be-plate *C* to bear on the stone a cutter carriage and an intermediate plate through the medium and by the adjustment of which the said cutter-carriage may be tilted; 2nd. The adjustable guide plate *A*, in combination with the be-plate *C* and screws *D* *D*.

**No. 8376. Improvements on Metal Neck Yokes.**  
(*Perfectionnements aux jougs métalliques.*)

George E. Marvine, Darius S. Jackson and Maurice Farrington, (Assignees of William H. Johnson.) Delh., N. Y., U. S., 1st February, 1878, for 5 years.

**Claim.**—1st. A hollow malleable iron neck-yoke; 2nd. In combination with the metal neck-yoke *A*, the central ring *C*, attached thereto by means of the swivel eye *B*.

**No. 8377. Improvements on Sleigh Runners.**  
(*Perfectionnements aux patins des traîneaux.*)

James Boydell, Kingsey, Que., 1st February, 1878, for 5 years.

**Claim.**—The steel cutters *B*, with the lever *C*, and the knife *D*, also the spring *E*, with the socket *F*, and the guard *G*.

**No. 8378. Improvements on Baking Ovens.**  
(*Perfectionnements aux fours de boulangeries.*)

John F. Lebbins and Melvin J. Starr Osage, Iowa, U.S., 1st February, 1878, for 5 years.

**Claim.**—The oven *A* with a close fitting cover *B*, with supports or flanges *D* *D* *D*.

**No. 8379. Improvements on Anchor Trippers.**  
(*Perfectionnements aux bossours.*)

Elisha F. Robbins, Reading, and Nathaniel T. Gorham, Boston, Mass., U.S., (Assignees of Elisha Robbins, Barnstable, Mass., U. S.) 1st February, 1878, for 5 years.

**Claim.**—1st. The plate *A* formed to fit to the upper surface of the rail and provided on its upper side with one or more projections *b*, and one or more recesses *c*, for receiving and retaining or holding an anchor fluke and allowing and aiding in its discharge from such plate; 2nd. The plate *A* provided with a flange or guard *a*, extending down from one or each

of its longer edges and also with one or more projections *b*, extending upward from such plate, and being to support an anchor fluke and permitting or aiding in its discharge, under circumstances. 3rd. The improved anchor fluke supporter and tripper, consisting of the plate *A*, the projection *b*, the recess *c* and one or more chocks *h*; 4th. The plate *A*, provided with the anchor-fluke receiving recess *c*, supporting projection *b* and curved-guide-flange *i*; 5th. The plate *A* provided with the anchor fluke receiving recess *c*, the supporting projection *b*, the curved guide-flange *i* and one or more chocks *h*; 6th. The combination of the plate *A*, adapted to support an anchor by its fluke, and to release the fluke when the anchor is dropped, combined with the cat-head *H* having the lever *L*, rope *R* and pin *P*.

### No. 8380. Improvements on Hoisting Machines. (*Perfectionnements aux élévateurs.*)

John Fenson, Toronto, Ont., 1st February, 1878, for 5 years.

*Claim.*—1st. In combination with a water cylinder of known lifting capacity, of one, two or more supplementary water cylinders arranged in connection with suitable automatic mechanism to be thrown in and out of working connection as the load on the car varies. 2nd. The lever beam *K*, mounted on trunnions in such a manner that it is divided into two arms of unequal length, on the shorter arm of which the upper rope wheel of hoist is mounted, and to the adjustably weighted longer arm is connected a valve or valves of suitable construction in such manner that when the load on the car is increased above a given weight, the balance of the lever will be disturbed, causing it to move on its fulcrum and to throw one or more supplementary lifting cylinders into working connection with the main cylinder, and when the extra load is removed from the car, the lever will be returned to its original position, allowing the inlet valves to the supplementary cylinder to be closed to automatically regulate the lifting capacity of the hoist in proportion to the weight to be elevated. 3rd. The combination of the hoist *J*, rope *G*, wheel *I*, adjustably weighted lever beam *K*, with the inlet valves of one or more supplementary lifting cylinders. 4th. The combination with the car of a hoist or elevator, of a permanently fixed weight scale. 5th. A relief valve placed in the piston head or bottom of cylinder, for the purpose of allowing a piston to travel through a cylinder filled with water and to relieve the piston from the force of atmospheric pressure, should the supply of water above or below the head be cut off at any point in the length of its stroke; 6th. The combination with the upper rope wheel *I*, mounted on a tilting lever beam of one or more registers or counters, arranged to register the amount of water consumed by one or more cylinders. 7th. The valves 10 and 11, connected to, and arranged in combination with the lever *K*, for the purpose of automatically operating cylinders of unequal capacity, either singly or jointly, as the load to be lifted requires; 8th. One or more relief valves *C*, arranged in combination with the supply and discharge pipes in such a manner as to admit of two or more cylinders being operated jointly or singly through one working valve *C*. 9th. The valves 10 and 11, arranged in connection with hydraulic cylinders, in combination with the cam disc 7 operated through suitable mechanism by the lever 2.

### No. 8381. Improvement in Steam Boiler Cleaners. (*Perfectionnements dans les nettoyeurs des chaudières à vapeur.*)

John A. Fordon, Bay City, Mich., U.S., 1st February, 1878, for 5 years.

*Claim.*—1st. The combination with a steam boiler of the skimming pan *C* placed in the rear part of the boiler, so as to receive at its larger open end the surface current, the flow pipe *D*, for conducting off the material caught up by said pan, the collecting chamber *E* and the return pipe *F* passing through the heat; 2nd. The combination of the collecting chamber *E*, provided and constructed with the converging sides, and the pipe *F* provided with the cock *o*, with the receiving chamber *H*, and the pipe *P* provided with the cock *r*.

### No. 8382. Improvements on Filter Presses. (*Perfectionnements aux filtres à presses.*)

John Bowing, London, Eng., 1st February, 1878, for 5 years.

*Claim.*—1st. A filter press composed of rings with intervening perforated or slotted plates or discs all held together by the rods and running by means of rollers *a* on rails. 2nd. The use in filtering presses such as that above described, or acting in the same manner, of cloth or analogous material acting against the plane interior surfaces of the chamber, and conducting the liquid intended to be expressed to the circumferential exit apertures, or equivalent apertures, through which the expressed liquid is forced to exude in the manner described. 3rd. A filter press composed of rings and intervening slotted diaphragms having central inlet and circumferential outlets.

### No. 8383. Improvements in Fanning Mills. (*Perfectionnement dans les turbines criblées.*)

Anthony Kline, Bond-Head, Ont., 1st February, 1878, for 5 years.

*Claim.*—1st. The side frames of a fanning mill consisting of horizontal and uprights planted on the outside of machine casing and connected together by cross ties and stays. 2nd. The combined riddle *H*, forming by the combination in a single portable frame of a receiving and delivery board and two or more riddles or sieves. 3rd. The combined portable riddle *H*, in combination with the shoe *G*. 4th. A riddle or sieve provided with end laps or loops, into which laps or loops a thin steel sustaining bar *i* is inserted. 5th. The receiving board *L*, with wire cloth connected to and placed on a line with the underside thereof.

### No. 8384. Improvements on Bolt Locks. (*Perfectionnements aux boulons de sûreté.*)

Edward J. Lockwood, Danbury, Ohio, U.S., 2nd February, 1878, for 5 years.

*Claim.*—The headed bolt, or pin *A*, slotted at its end and provided with a spring *D*, and with a key *C* pivoted in the slot.

### No. 8385. Improvements on Fog Signals. (*Perfectionnements aux signaux de brume.*)

The Neptune Fog Horn Co., Quebec, (Assignees of George Sweeney, Montreal, Que.), 6th February, 1878, for 5 years.

*Claim.*—1st. The air cylinder *E*, provided with a sounding reed or whistle and a steam cylinder *D* vertically arranged, each having a piston *D*; *E*

connected by a rod *F*, in combination with a steam boiler *A* and valve-taps for supplying and exhausting the cylinder *D* of steam. 2nd. The lever *K*, having pins *M* and *N*, operated by the pistons *D*; *E*, automatically opening and closing the three way valve, connecting the supply and exhaust pipes *H*, *I*, of the boiler *A* and cylinder *D*.

### No. 8386. Railway Frog Protector. (*Protecteur des rails de croisement des railroads.*)

George N. Geddes, Glenora, Ont., 11th February, 1878, (Extension of Patent No. 2055,) for 5 years.

### No. 8387. Improvements in the Indexing of Books. (*Perfectionnements dans les index des livres.*)

Charles H. Denison, Bay City, Mich., U.S., 11th February, 1878, for 5 years.

*Claim.*—1st. A book, the front edges of which are provided with one or more series of segmental recesses cut in the manner described, each recess cut to the leaf to be indicated, said leaves on their exposed part bearing the appropriate letter, name or character indicating the matter to be found on said leaf; 2nd. A book, the front edges or ends of which are provided with one or more series of segmental recess cut in the manner described, each recess cut to the leaf to be indicated, said leaves on their exposed part bearing the appropriate letter, name or character indicating the matter to be found on said leaf, and the front and back covers bearing on their outside faces a series of duplicate letters, names or characters, each member of which is arranged directly opposite its original belonging to the adjacent series of recesses, so that when the book is lying on either side it can be opened to any desired letter, name or character by a single movement; 3rd. A book the front edges or ends of which are provided with one or more series of segmental recesses, cut in the manner described, said leaves on their exposed part, bearing the appropriate letter, name or character being also placed on the opposite side of said leaves, and on all the leaves in the book on the same side of the recesses, directly opposite its corresponding recess, so that when the book is opened at any page, the student can turn to any desired letter, name or character by a single movement; 4th. A book, the front edges or ends of which are provided with one or more series of segmental recesses, cut in the manner described, each recess cut to the leaf to be indicated, said leaves bearing on their exposed part the appropriate letter name or character indicating the matter to be found on said leaf, and the front and back covers bearing on their inside faces, at the margin thereof, a series of duplicate letters, names or characters, each member of which is arranged directly opposite its original belonging to the opposite series of recesses, so that when the book is lying on either side or open at any page, it can be opened to any desired letter, name or character by a single motion.

### No. 8388. Machine for Raising Saw-logs on to the Mill Floor. (*Machine à monter le bois de sciage sur le pavé des moulins.*)

William Hamilton, Peterborough, (Assignee of John Ludgate, Ashburnham Ont.), 11th February, 1878, (Extension of Patent No. 2043,) for 5 years.

### No. 8389. Improvements on Milk-Coolers. (*Perfectionnements aux garde-lait.*)

Alpheus C. Bowen, Alexandria Bay, N.Y., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. The vertical cooling tubes *C*, their mouths opening into a chamber *M*, formed by the top *E*, the lower ends terminating in a hollow flat bottom *D*, and inserted within a tank *B*, whereby water supplied thereto will circulate around the same, for cooling the milk therein; 2nd. The tank *B* connected to an elevated water reservoir *A*, having internal vertical arranged independent cooling tubes *C*, connected to a bottom *D*, surrounded by water within the tank for cooling the milk supplied thereto; 3rd. The vertical tubes *G*, terminating in a bottom *D*, within a tank *B*, and opening into a chamber *M*; 4th. The chamber *M* opening to the tubes *C*, having a strainer covering *K*.

### No. 8390. Improvements on Peg Floats. (*Perfectionnements aux boulons de cordonnage.*)

Amos Whittemore, Cambridgeport, Mass., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. The combination with rotating cutters *J*, rotating guards or shields *m*. 2nd. Rotating cutters *J*, in combination with the rotating plate formed with shield *m* and scored as shown; 3rd. The removable rotating cutter *J*, in combination with the plate *L*, and shields *m* of segmental form. 4th. Cutters *J*, which rotate with the plate *L*, in combination with stud *g* and holes *s*; 5th. The shield plate *L*, perforated at *f*, in combination with gear-case cover *E* provided with the perforation *v*. 6th. In combination with rotating cutters *J* and rotating shield plate *L*, the gearing *G*, *H*, and *e* applied in a gear case *D*, which is set at an angle with respect to the spindle *A*.

### No. 8391. Improvements on Combined Washers and Wringers. (*Perfectionnements aux laveuses-essoreuses.*)

George Morehouse, Orangeville, Ont., 12th February, 1878, for 5 years.

*Claim.*—1st. A washer having the bottom of its concavity of an inverted parabola form, and a convex rubber *F*, hung eccentrically therein. 2nd. The convex rubber *F* having projecting bars *I*, and oscillating within a washer whose bottom is of a parabola form. 3rd. The combination and arrangement of the rollers *J*, *K*, blocks *L*, *M*, bar *O*, spring *P*, bolts *Q*, screws *R*, and bar *S*, with the sides *A* of the washer.

### No. 8392. Improvements in Pumps. (*Perfectionnements dans les pompes.*)

Hiram L. Doolittle and James Averill, Jr., (Assignees of Joseph Armon, Champlain, N.Y., U.S., 12th February, 1878, for 5 years.)

*Claim.*—1st. The combination of the cylinder *A*, piston *E*, stem *F* and ram *b* *c* *G*, with a pump barrel or stock and nozzle; 2nd. The handle *a* and pitman *d*, attached to the stem *F*, at any suitable point above the piston *E*, in combination with the piston stem *F* having piston *E*, and the stem *b* having piston *C*.

No. 8393. Improvements on Steam Boiler Feed. (Perfectionnements aux alimentations des chaudières à vapeur.)

Thomas W Mather New Haven Ct U S, 12th February, 1878, for 15 year

Claim.—The combination of a pump operating to draw from the water supply a second pump operating to draw directly from the water level of the boiler, and a chamber into which both the first and second pumps may discharge, with a valve opening from the said chamber to the boiler, and a waste valve.

No. 8394. Improvements on Car Couplers. (Perfectionnements aux attelages de wagons.)

Benning Rowell West Sparta and Hiram G Bond Rochester N Y, U S, 12th February, 1878, for 5 years.

Claim.—1st The combination with the couplings of a railway car with the rods E E connected with the devices for raising the coupling pin to an angle the rods succeeding the first rod, being made in sections provided with hook and eye joints coinciding with the couplings, and the eye joints being connected with the devices for raising the coupling pin, whereby the operator, standing at the front, can uncouple the coupling and disconnect the sections of the rods at one and the same action, and can couple or detach any car in the train at will, 2nd. The combination with the spring side and coupling pin e resting thereon, of the cord h connecting with the devices for raising the pin and the rod E to which the cord is attached extending to the front of the train, 3rd. The combination with the coupling of a roadway train of the rod E, cord h, pulley r and rock lever D, provided with a hook or equivalent device at its end for holding the coupling pin; 4th The rod E constructed in sections with hook and eye joints coinciding with the couplings, the eye section being connected with the devices for raising the coupling pin, in such a manner that the coupling pin and the eye are raised at one and the same action, 5th In combination with the rock lever D, having the coupling pin e suspended so as to be raised and lowered with it, the bearing or loop n, attached to the rock lever and holding the rod or rods E, so that the coupling pin and the rod receive a simultaneous motion when the rock lever is operated, 6th. The combination with the rock lever D, having the suspended coupling pin e and the loop n of the pivoted lever G, having its end resting loosely under the rock lever

No. 8395. Improvements on Stave Jointing Machines. (Perfectionnements aux machines à assembler les douves.)

Philip Vollmar, Seaforth, Ont., (co inventor with James Naylor, Rochester, N.Y., U.S.), 12th February, 1878, for 5 years.

Claim.—1st. The combination of the flexible bed piece H with the form I, and the straight edged and faced knife C, 2nd. The gages K K oscillating at L, the imaginary center of the barrel, and having the offsets m m for holding the stave securely on its bed; 3rd. The knife bed B, having projections N N, in combination with the cams M M, 4th. The combination of the knife bed B, of the pivoted slides E E of the lower guide F.

No. 8396. Improvements on Washing Machines. (Perfectionnement aux machines à laver.)

Cyrus A Dodge, Chicago, Ill., (Assignee of George H. Waldo Prattsburg N Y), U S, 12th February, 1878, for 5 years.

Claim.—1st. The combination with an actuating lever having a pounder attached thereto, of a fulcrum adapted to be moved toward or from the centre of the tub, the said lever and movable fulcrum being connected in such a manner that the pounder may be freely moved either in a vertical, lateral, or longitudinal direction; 2nd. The combination with an actuating lever having pounder attached thereto, of a laterally vibrating fulcrum located above the edge of the tub with which it is connected, said fulcrum adapted to be freely moved by the actuating lever; 3rd. The combination with an actuating lever having a pounder attached thereto, of a pendulous support attached to a standard removably secured to the side of the tub; 4th. The combination with a fulcrum adapted to be moved toward or from the centre of the tub of an actuating lever provided with a vertically adjustable pounder; 5th. The combination with a fulcrum adapted to be moved toward or from the centre of the tub, of an actuating lever provided with a pounder adapted to have a rocking movement.

No. 8397. Improvements in Cut-off Valves. (Perfectionnement dans les soupapes de détente.)

Thomas Dill, Toronto, Ont., 12th February 1878, for 5 years

Claim.—1st. A variable double cam motion for valves of steam engines, consisting of a revolving disc F K having an inflected channel E, from which channel the induction valves are operated and in which channel the length of the inflected portion is variable by the action of the engine governor, for the purpose of regulating the supply of steam to the cylinder in proper proportion to the work to be done by the engine, 2nd. The revolving disc F K, having a variable inflected channel, in combination with the bell cranks G and induction valves E, 3rd. The sleeve J having a direct rotary motion and to which a secondary variable motion on its perpendicular axis is communicated from the engine governor, in combination with the plate K and disc F, 4th. The spindle H with pin I, to which a variable up and down motion is communicated from the engine governor, in combination with the sleeve J having the spindle arranged slots and connections, 5th. The governor spindle H, inner spindle H, sleeve J and disc F K, in combination with the induction valve or valves of a steam engine, and arranged for the purpose of regulating the supply of steam to the cylinder in proportion to the load on the engine, 6th. The revolving wheels M with inflected channel, in combination with the exhaust valve rod or rods O provided with the chamber N or its equivalent; 7th. The rods O formed with a buckle end through which buckle end the driving shaft D passes, and upon which shaft the rods rest for a bearing and guide.

No. 8398. Art of, and Apparatus for, Blasting Under Water. (Art de miner sous l'eau et l'appareil qui pour cet objet.)

Ebenezer E. Gilbert, Montreal, Que., 12th February, 1878, for 5 years.

Claim.—1st. The combination of the drill V with the drill guiding tube M extending from the top of the bore in the rock, 2nd. The combination of the drill guiding tube M with the wash tube, or charging tube B, 3rd. The combination of the drill V, tubes M and K, with clamp I and holding cylinder G, 4th. The combination of the drill V, tubes M and K, clamp I, holding cylinder G and carriage B, 5th. The combination of the carriage E, cylinder G, clamp I, and tube K, 6th. The combination of the vessel A with drill guiding tube M, extending to the top of the bed or bore in the rock; 7th. The combination of the vessel A frame D carriage E having cylinder G for supporting and maintaining the drill guiding tube M, by means of a tube K and clamp I, 8th. In the art of drilling holes in rock under water, the process of washing the gravel from the surface, also the chips from the drill hole or stratum or pocket D, in combination with the protection of the hole, 9th. In the art of drilling submerged rocks, the protection of the hole by a tube.

No. 8399. Improvements in Preparing Dyes. (Perfectionnements dans la préparation des teintures.)

Louis Leigh and Anna Saunders, Pittsfield, Mass., U.S., 12th February, 1878, for 5 years.

Claim.—A solid block or cake consisting of soap, gelatine and an unline dye, the whole soluble in water and capable of imparting a fixed colour to fabrics

No. 8400. Improvements on Manometrical Altimeters. (Perfectionnements aux altimètres manométriques.)

Nicolas Yagn and Louis Surin o Moscow, Russia, 12th February, 1878, for 5 years.

Claim.—1st. The method of measuring heights by means of hydrostatic pressure, 2nd. The combination of the liquid reservoir A with the open mercury manometer B or any other pressure gauge and the flexible tube C; 3rd. The combination of the mercury manometer B with the shoes L or friction weight B rubbing against the platform I of the support D, permitting to place the manometer easily and speedily in a determined position, 4th. The combination of the mercury manometer B with the moving scale e, manometrical screw e, plunger k support D and chain Z, 5th. The moving scale e permitting, combined with the manometrical screw e, and its pertineances, to count the indications of the manometer B with great accuracy; 6th. The plunger k placed in a liquid, in order to settle speedily in vertical position.

No. 8401. Improvements on Soldering Machines. (Perfectionnements aux machines à souder.)

Peter Dillon, George H Bradford Sherbrooke, Que., John Cleary, Great Falls, N.H., U.S., and Arthur J Cleveland, Richmond, Que., 12th February, 1878, for 5 years.

Claim.—1st. The combination with a furnace D and a solder bath Q, one or more soldering bolts E, each consisting of a centrally perforated point i, with a connecting tube E, valve a and chamber m with their operating mechanism; 2nd. The combination of the slotted and jointed sleeve F E and its enclosed mandrel G, with their operating mechanism; 3rd. In combination with an intermittently revolving vertical disc B and its operating mechanism, a series of moulds A1 A2 A3, &c., each consisting of a sleeve F E and mandrel G, and their operating mechanism; 4th. In combination with the disc B and moulds A1 A2 A3, &c., one or more detaching bars C C1 with their operating mechanism; 5th. The reciprocating bath Q, having attached to it one or more hollow soldering bolts, intermittently opened and closed by which reciprocating movement of the bath longitudinal seams have the solder deposited along them, and smoothed by the bolts on their return; 6th. The combination of a reciprocating solder bath and attached bolts with a stationary furnace whereby the bath and bolts are heated at each return to the furnace; 7th. In combination with the disc B, moulds A1 A2 A3, &c., and detaching bars C C1 the soldering apparatus Q E E2 and its operating mechanism; 8th. The combination of the plate c with the intermittently rotated hollow spindle or sleeve R, having internal or external grips e attached forming a holder with their operating mechanism; 9th. An endless series of plates c having grips and hollow spindles attached, having an intermittent circuit movement; 10th. In combination with one or more soldering baths and attached soldering lts, a spindle S and its operating mechanism; 11th. The intermittent rotary bath Q having soldering bolts attached, intermittently opened and closed, by which seams passing under and in contact with the points, one or more of the bolts have the solder deposited upon them, while the remainder of the bolts and baths are being heated for a like purpose; 12th. In combination with the endless series C of plates c, one or more soldering baths and hollow soldering bolts together, having a horizontal intermittent rotary motion.

No. 8402. Process for Manufacturing Dry Hop Yeast. (Procédé de fabrication du levain au houblon sec.)

Andrew B Burns, Amherstburg, Ont., 12th February, 1878, for 5 years.

Claim.—Mixing hops, malt flour, rye flour and rice flour, yeast and water.

No. 8403. Adjustable Chain Pump Bucket. (Gobelet mobile de chaîne.)

Thomas Kenyon, Hamilton Ohio, U.S., 12th February, 1878, for 5 years.

Claim.—1st The independent cone D made adjustable under elastic bucket over a one piece link A so as to regulate the adjustment of bucket without shortening the link, 2nd. The combination of link A having a hole near each end, a collar B, and a thread C with the internally threaded cone D, washer E and elastic bucket F, 3rd. The lifting collar B formed upon the upper part of the link A and above the working part of the packing F, when the bucket is in the tube.

**No. 8404. Improvements in Steam Boilers.***(Perfectionnements dans les chaudières à vapeur.)*

Mathew O'Brien, St. Mary's, Ont., 12th February, 1878, for 5 years.

*Claim.*—The grate of any fire box of a steam engine, being made tubular for the passage of the water to the boiler, as and for a water heater and an auxiliary steam generator.

**No. 8405. Improvements on Mechanical Forges.***(Perfectionnements aux forges mécaniques.)*

Charles Hammelmann, Buffalo, N. Y., U.S., 12th February, 1878, for 5 years

*Claim.*—1st. The main wheel A having the serrations B, or the equivalent thereof, of the pendent radius bar or lever D<sub>1</sub>, provided with one or more pawls E, the connecting rod F<sub>1</sub> and a suitable lever for operating the radius bar; 2nd. The serrated main wheel A, radius bar D, pivoted pawls E and connecting rod F, pivoted to said pawl and actuating the main wheel A; 3rd. The combination with the main wheel A having the serrations B, and mounted upon the shaft C, of the radius bar D provided with the pivoted pawl E, radius bar D<sub>1</sub>, having the pawls E<sub>1</sub>, E<sub>2</sub>, connecting rods F F<sub>1</sub>, lever G, with the handle H; 4th. The combination with the lever G having the pin a, of the handle H provided with the socket c.

**No. 8406. Improvements in Vehicle Springs.***(Perfectionnements aux ressorts de voitures.)*

Alexander W. McKown, Honesdale, Pa., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. In combination with an auxiliary spring of a wagon or vehicle, a rubber-packed eye-bolt or staple, and the eye N or staple eye; 2nd. In combination with an auxiliary spring of a wagon or vehicle, the rubber-packed eye-bolt and the eye or hook N, these eyes being adapted to receive the link or yoke O; 2rd. The combination with the auxiliary spring of the block M, the cross-bar having cavity l, straps i and pins or bolts k k; 4th. The pivoted bar H, provided with devices for locking the spring, and arranged to be swung out of operative position, and free from the spring, and to be swung into operative position for connection with the spring; 5th. In combination with the auxiliary spring and with its eye z, the eye w, these eyes being adapted to receive the spring compressing tool, preparatory to locking the spring out of action; 6th. In combination with an auxiliary spring, the spring-compressing tool or lever, in two pieces, with hook and socket.

**No. 8407. Improvement in Lubricating Compounds.***(Perfectionnements dans les composés lubrifiants.)*

George G. Munger, Rochester, N.Y., U.S., 12th February, 1878, for 5 years.

*Claim.*—The compound composed of petroleum oil, plumbago, japan wax, palm oil and soda (with or without tallow).

**No. 8408. Improvements on Wire Rope Machines.***(Perfectionnements aux machines à câbles métalliques.)*

Nicholas Van Loon, St. Cloud, Min., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. The drum F provided at one side with the fixed lugs h h, and at the other side with the movable lugs h h, attached to said drum by the clamp screws h<sub>2</sub> h<sub>2</sub>; 2nd. The drum F provided with fixed and movable lugs, in combination with the removable cross-piece i and detachable side-bearing t; 3rd. The combination of the radially supported wire guiding pulleys or wheels, with lateral steadying pieces and clamp devices

**No. 8409. Improvements on Seal Locks.***(Perfectionnements aux serrures scellées.)*

William Dunn, Hamilton, Ont., 12th February, 1878, for 5 years.

*Claim.*—1st. The bar a provided with the groove or recess a<sub>1</sub>, in combination with the lock A and the hasp b; 2nd. The hooked springs f f, attached to the bar a, for the purpose of drawing out the card or seal; 3rd. The combination of the opening C in the side of the lock, the glass c fixed in the opposite side, and the aperture c<sub>2</sub> made through the bar, with the lock A and the bar a; 4th. The combination with the lock A and the bar a, of the toothed cylinder e; 5th. The catches a<sub>2</sub> a<sub>2</sub>, in combination with the bar a and the lock A.

**No. 8410. Improvements on Wind Wheels.***(Perfectionnements aux moulins à vent.)*

George H. Clark and Erastus H. Gregory, Lapeer, Mich., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. A wind wheel having two hubs, two sets of spokes, and two fellics, in combination with the shaft B and rotating turn table F, to the latter of which is secured the sails P S for operating a governor; 2nd. A series of sails or buckets E made stationary upon a wind wheel, said sails or buckets being convex in form, in combination with the two fellics D D which are secured to the two hubs A A by the two sets of spokes C C, and with the rotating turn table F provided with governor N; 3rd. In combination with a wind wheel, the governor N and sail P; 4th. In combination with a wind wheel, with the governor N and sail P, the brake L and its operating rod M; 5th. In combination with a wind wheel, the ring J provided with a series of friction rollers e e, for supporting the turn-table; 6th. The turn-table F, in combination with the ring J provided with a series of friction rollers e; 7th. In combination with the shaft B carrying the wind wheel, the turn-table F provided with bearings, so arranged that while the turn-table rotates upon one axis, the wind wheel rotates upon another axis, at right angles to the former; 8th. In combination with the shaft B of a wind wheel, the rigid pulley or friction wheel K on the end of said shaft, and the brake L; 9th. In combination with the crank shaft O, counter balance lever N and sail P, the rod m and plate n, at the lower end of said rod; 10th. In combination with the pulley or friction wheel K, the crank f secured at one end to said wheel, while the opposite end is secured to the connecting rod g, and the yoke k supporting the box or bearing h.

**No. 8411. Improvements on a Lifting Jack.***(Perfectionnements à un cric.)*

Benjamin M. Sherman, Flint, Mich., U.S., 12th February, 1878, for 5 years.

*Claim.*—A lifting jack, adjustable to varying heights, and in combination therewith, the revolving bearing plate I on top of the plunger rod H, for the purpose of allowing said lifting jack to be employed as a jack screw when desired.

**No. 8412. Improvements on Reapers.***(Perfectionnements aux moissonneuses.)*

George Sweet, Samuel D. Faulkner, Dansville, Lebbens Sweet, Wellsville, N.Y., U.S., and John Watson, Ayr, Ont., 12th February, 1878, for 5 years.

*Claim.*—1st. A beater arm m connected to a rake head m<sub>1</sub> by two supporting locking pivots L L<sub>1</sub>, one at the inner and the other at the outer end of the rake head, whereby the said rake head is firmly supported, while at the same time it is permitted to roll in its bearings and caused to traverse the platform with its teeth in a horizontal position; 2nd. The combination of a rolling rake head, with the supporting pivot p, the jaws l l<sub>1</sub> and the springs S; 3rd. A rolling rake head, movable longitudinally when combined with a longitudinally acting spring, bearing against said rake head; 4th. The iron rod or brace A and a stud C applied to rear rail of a reaper platform, to cause the outer rear end of such platform to be raised by straining of the rod, by a nut, key, cam, or other equivalent means.

**No. 8413. Improvements on Farm Fences.***(Perfectionnements aux clôtures de fermes.)*

Thomas Gray, New Market, Ont., 12th February, 1878, for 5 years.

*Claim.*—The leaving off of one picket near the end of each panel, it being the second one from the end, and making the end picket to form the second picket on the next panel; the peculiar shape of the standards being hinged near the bottom, by means of the two bolts through the (cross-piece or) rest and legs, and opening and closing at the top; the hinged wire coupling K, the wedge or key I and the block J, the mode of securing the fence to the ground.

**No. 8414. Improvements on Trusses.***(Perfectionnements aux bandages herniaires.)*

John Jamieson, Kenyon, Ont., 12th February, 1878, for 5 years.

*Claim.*—1st. The flexible abdominal plate A carrying the pads G, having a recess B; 2nd. The flexible abdominal pad plate A provided with straps D and F F looping together; 3rd. The flexible abdominal pad plate A provided with studs C C and E E, for buttoning the straps D F thereto; 4th. The flexible abdominal plate A having perforations I, for securing the pads G thereto adjustably by screws H; 5th. The flexible abdominal plate A, provided with recess B, and having pads G removably and adjustably connected thereto; 6th. A truss composed of the flexible abdominal plate A, having recess B and studs C E, adjustable pads G, and straps D and F F.

**No. 8415. Improvements on Churn Powers.***(Perfectionnements aux moteurs de barattes.)*

Almerick A. Gamsby, (Assignee of John Moulton), Orono, Ont., 12th February, 1878, for 5 years.

*Claim.*—1st. The frame for holding the churn and mounting the mechanism, consisting of the base A, raised bottom D, securing the churn E, posts B, bar F and button G, for securing the cover firmly; 2nd. The combination with the churn having a vertical operating dash rod, of a power wheel I having a crank shaft J, mounted on the cross tree K, secured to the posts L, and engaging loosely with an arm M attached to the churn shaft, for operating the same.

**No. 8416. Improvements on Stoves and Fire-Places.***(Perfectionnements aux poêles et aux cheminées.)*

Jacob K. Dimmick and Frederick A. Stine, Cincinnati, Ohio, U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. The combination of the grate B, the cold-air receiver C, the upright pipes E forming the grate backing and curved to arch over to about the front line of the grate, and the hot-air receiver F; 2nd. The combination of the flanged air-receiver C, the flanged pipes E, and the binding rods I; 3rd. In a heater for fire-places, the combination of vertical pipes B<sub>2</sub>, laterally connected to form a close fire-back, and extending in vertical lines from the bottom of the grate basket to the crown of the fire-place, and joined to a hot-air receiver which projects over the fire; 4th. The combination of pipes B<sub>2</sub> laterally connected to form a closed fire-back, and vertical throughout of arching over the fire, hot-air receiver A<sub>2</sub> extending over the fire, hot-air conducting pipe M and stove shell N O; 5th. In combination with the stove shell N and fire-place C<sub>2</sub>, the sliding adjustable blower plate R and gravity catch T; 6th. The pipes B<sub>2</sub> formed with flanges b; 7th. The pipes B<sub>2</sub> formed with interior projections C projecting inward from the side directly exposed to the fire; 8th. The combination of side pipes B<sub>2</sub>, slots d, bolts e<sub>2</sub>, lugs f, and side jams V.

**No. 8417. Improvements on Stump Extractors.***(Perfectionnements aux arrache-souches.)*

George H. Clark, Lapeer, Mich., U.S., 12th February, 1878, for 5 years.

*Claim.*—1st. The combination with a derrick A, of the suspended clevis B supporting the ratchet wheel C and chain wheel D, and the operating levers E provided with pawls F; 2nd. The combination with a derrick A, of the suspended ratchet wheel C and levers E, provided with pawls F, so arranged that with each movement of the levers the pawls have each a draught upon said ratchet wheel in the same direction, but at different points of engagement; 3rd. In combination with the ratchet wheel C and its operating levers and pawls, and chain wheel D; secured to the opposite side of said ratchet wheel.

**No. 8418. Composition for Roofing.***(Composé à toitures.)*

John Brokenshire, Kingstons, Ont., 12th February, 1878, for 5 years.

*Claim.*—The combination of slag A, oliviners B, ashes C, and tar D.

**No. 8419. Improvements in Threshing Machines.** (*Perfectionnements dans les machines à battre.*)

John Cooper and Edward Poncar, Schomberg Ont., 12th February 1878 for 5 years.

*Claim.*—1st. A covering for riddles and sieves of grain separately and clearing machines, consisting of a series of wires C placed longitudinally or in the direction of the blast only and parallel to each other. 2nd. A grain and seed saving attachment for threshing and grain separating machine, consisting of the sieve C, inclined return board E and hinged blocking board G; 3rd. The grain and seed saving attachment C E G, in combination with the shoe of a threshing machine.

**No. 8420. Apparatus for Manufacturing Soap.**

(*Appareil à fabriquer le savon.*)

Joseph Barsalou, Montreal, Que., (Assignee of Edwin H. Gibbs, New York, U.S.) 12th February, 1878, (Extension of Patent No. 2089) for 5 years.

**No. 8421. Apparatus for Manufacturing Soap.**

(*Appareil à fabriquer le savon.*)

Joseph Barsalou, Montreal, Que., (Assignee of Edwin H. Gibbs, New York, U.S.) 12th February, 1878, (Extension of Patent No. 2089) for 5 years.

**No. 8422. Improvements on Show Cases for Maps.** (*Perfectionnements aux montres pour les cartes géographiques.*)

Anselme Blais, St. Anselme, Que., 16th February, 1878, for 5 years.

*Requis.*—1o. L'Armoire elle-même construite de manière à préserver les cartes de toute souillure. 2o. La manière dont les cartes sont suspendues dans l'armoire au moyen des boutons J, évitant ainsi de rouler les cartes et de les froisser. 3o. Le ressort E servant à placer les cartes sur le charriot antérieur; 4o. Les charriots et la manière dont ils glissent sur les lisses, et leur prolongement au moyen des cardons H. 5o. Les lisses et leur prolongement servant au glissement des charriots; 6o. Le support du prolongement des lisses.

**No. 8423. Improvements on Sleighs.**

(*Perfectionnements aux traîneaux.*)

Sebastian Gilzinger and Abel A. Crosby, Rondout, N.Y., U.S., 19th February 1878, for 5 years.

*Claim.*—A sled or sleigh, with its runners A A and braces B B, constructed of a continuous or endless piece of metal, the front end of the runners terminating in a single regular curve a, which extends to the front of the body board, and the body-board having grooves or recesses c c formed in its under side, within which recesses are secured the braces B B of the sled.

**No. 8424. Improvements on Grinding Mills.**

(*Perfectionnements aux moulins à mouler.*)

James A. Field, (Assignee of Theodore D. Powers,) St. Louis, Mo., U.S., 19th February, 1878, for 5 years.

*Claim.*—1st. The driving wheel L in combination with the outer grinder G H having outturned flange K formed with a cog-gearing in its under side; 2nd. The stirring arm or breaker D, in combination with the outer and inner graders A B and G H; 3rd. The outer and inner graders A B and G H, provided with thin ribs or blades at a b g h inclined from the vertical; 4th. The outer grinder made in two parts G H, in combination with the adjusting screws h i g; 5th. The combination of the inner stationary grinder A B with the outer rotary grinder G H; 6th. The part B having teeth b the angle of which is of varying height, in combination with graders G H; 7th. The part B having blades h, in combination with the part A having teeth at a varying in height; 8th. In combination of parts A B fitted together with a rabbet point At and held by bolts a2, 9th. The hub d of the stirring arm D having ribs d1, and cylindrical block C having recesses for the reception of the ribs d1, in combination with the screw E. The outer grinder G H, having arms I and collar J, in combination with the hub d, cylindrical block C, bearing b1 and screw E.

**No. 8425. Improvements on Car-Coupling.**

(*Perfectionnements aux attelages de wagons.*)

Herman J. L. Dette, Julius Cohen and Henry Millring, Buffalo, N.Y., U.S., 19th February, 1878, for 5 years.

*Claim.*—1st. The draw-head C, the coupling pin G, having the perforated parts H, the lever N pivoted within the bracket L of said draw head C, and the levers P pivoted to the car body A. 2nd. The mechanism for operating the coupling G, consisting essentially of the pivoted lever N, pivoted levers P P and guide brackets S S provided with the pivoted stop U. 3rd. The coupling pin G having the lateral projecting flange J.

**No. 8426. Improvement on Portable Fences.**

(*Perfectionnements aux clôtures portatives.*)

John D. Thomson, Rockport, Ont., 19th February, 1878, for 5 years.

*Claim.*—A portable fence composed of rails A each having two spreading legs B B inserted thereon, near one end, the other end to bear on the ground and set whereby the legs of one rail straddle the next rail the several rails being supported inclinedly and independently by the legs B.

**No. 8427. Improvements on Curtain Rollers.**

(*Perfectionnements aux rouleaux de rideaux.*)

John C. Lake, Camden, N. Y., U. S., 19th February, 1878, for 5 years.

*Claim.*—1st. In combination with a spring shade roller a pawl and ratchet so arranged that the former will engage with the latter upon simply pulling down the shade, and letting go of the latter without any special manipulation to effect the lock and will not engage when the shade is permitted to ascend slowly. 2nd. In combination with a spring shade roller, a pawl and ratchet so arranged that said pawl will, on the descent of the

shade at any speed automatically assume such a position that it will engage with the ratchet and lock the roller on merely letting go of the shade, without any manipulation of the latter, and when the shade is permitted to ascend slowly will not engage with said ratchet. 3rd. In combination with a spring curtain or shade roller a pawl and ratchet or locking device that will lock the roller on the descent of the shade before the latter can ascend. 4th. In combination with a spring shade roller having an annular ratchet F, a pawl E having an elongated slot e, whereby said pawl may be slid back and forth to bring it into and out of position for engagement with said ratchet.

**No. 8428. Improvements on Heating Stoves.**

(*Perfectionnements aux poêles de chauffage.*)

Edward Stewart, Fort Madison Iowa, U.S., 19th February, 1878, for 5 years.

*Claim.*—1st. The double lining forming a hot-air chamber about the bottom of the fire box, the indirect draft passage of which latter is between the said hot air chamber and wall of the stove; 2nd. The combination with the fire box provided with a double lining, forming the hot-air chamber of the indirect draft passage between the said double lining and the wall of the stove. 3rd. The hot-air chamber formed at the bottom and sides of the fire box, and communicating with the open air by lower feed and end exit passages, the said fire-box being provided with an indirect draft passage between the hot-air chamber and the wall of the stove. 4th. The combination with the damper and connecting rod, of the swinging stove-door communicating motion to the same, the said rod and door engaging by rack and pinion mechanism.

**No. 8429. Improvements on Sleigh Bottoms.**

(*Perfectionnements aux fonds de traîneaux.*)

Robert Armstrong, Portland, N. B., 19th February, 1878, for 5 years.

*Claim.*—1st. The combination of the runners A A and supporters S. 2nd. The combination of roller R with runners A A. 3rd. The combination of the roller R and bench B with petch P.

**No. 8430. Draw Bar and Buffer for Railway Cars.** (*Tige de traction et tampon de wagons de railroute.*)

Allen Middleton, Philadelphia, Pa., U.S., 19th February, 1878, for 5 years.

*Claim.*—1st. The combination in a car frame, of the springs D D, bumper-heads B B and a draw bar A having a head d at each of the ends which pass through the bumper heads. 2nd. The combination of the draw bar, bumper-heads and springs, with the longitudinal sills and cross-timbers E E, on which the pulling and bumping force is exerted.

**No. 8431. Improvement in Railway Car Brakes.** (*Perfectionnement dans les freins des voitures de railroute.*)

Ames K. Hadley, New York, U.S., 19th February, 1878, for 5 years.

*Claim.*—1st. The brake plate C, shoe D and spring E; 2nd. The yielding faced brake C D E, toggle joint bars F F, knuckle bars G and actuating cogged wheel H.

**No. 8432. Railway Track Cleaner.**

(*Chasse-pierre de railroute.*)

James H. Miller, Frederickton N. B. 20th February, 1878 (Extension of Patent No. 2391.) for 5 years.

**No. 8433. Improvements on Clothes Wringers and Washing Machines.** (*Perfectionnements aux essoreuses et aux laveuses à linge.*)

John Fee and Austin D. Cable, Montreal, Que., 20th February, 1878, for 5 years.

*Claim.*—1st. A wringer, in which the core of the rollers is longitudinally corrugated in even number and proportions to the surface corrugations of said rollers, when so corrugated. 2nd. In combination with wringer rollers, the rotary flanges C made of metal or other suitable material, and fastened at each end of either the upper or lower rollers B, but by preference to the latter; 3rd. In combination with a clothes wringer frame, the compression pin F having a flange f at the bottom end, and the rubber spring E at the flange end of the compression pin F, resting upon a metal or other suitable bearing, which bearing rests on the shaft of the upper roller of the wringer; 4th. The eccentric H with indentations I on the face, in combination with the compression pin F; 5th. The application of the eccentrics B, compression pin F with flanges f and rubber springs E, and of the rotary flanges C, in combination with washing machines made with rotary rollers.

**No. 8434. Improvements on Lamp Heaters.**

(*Perfectionnements aux chauffeuses à lampes.*)

Angus McKenzie, Toronto, Ont., 20th February, 1878, for 5 years.

*Claim.*—A portable lamp heater consisting of the heating chamber B provided with one or more mica lights and burners, and secured to the burner A by the ordinary chimney fastening C, the fluo E and heating vessel D having a flat bottom, and provided with the projecting rim D1.

**No. 8435. Improvements on Coat Measures.**

(*Perfectionnements aux mesures d'habits.*)

Robert G. Mc Lellan, Guelph, Ont., 20th February, 1878, for 5 years.

*Claim.*—1st. The flexible band A of rectangular form, having straps I and D and check bar I for securing the same in position on the body, provided with a pivoted arm C having stud G and studs A B B rectangularly located, whereby measurements can be taken from said studs, when the band is adjusted to either side of the body; 2nd. A drafting square Q of one oblique and three rectangular edges, provided with eyelets A2 B2 G2 corresponding relatively to the studs A B G, from whence the measurements of the band A are taken, and having thereon the tables and diagrams.



**No. 8436. Improvements on Locks.***(Perfectionnements aux serrures.)*

Abraham McGregor, West Flamboro, Ont., 20th February, 1878, for 5 years

*Claim.*—1st. The combination of gear wheels and disc W with stop lever S, rubbing bar A, dividing plate P and catch pin H, 2nd. The combination of bolt C with link L and stop lever S.**No. 8437. Improvements on Letter Boxes.***(Perfectionnements aux boîtes aux lettres.)*

Edwin T. Marsh, Rochester N.Y. U.S., 20th February 1878 for 5 years

*Claim.*—1st. The chambered cylindrical receiver C in combination with the cover B and connecting rod c arranged to operate conjointly, 2nd. The box A having the door D formed partly of the front and partly of the bottom walls thereof, and hinged thereto, as set forth.**No. 8438. Improvements on Planing Machines.***(Perfectionnements aux machines à raboter.)*

The Woodbury Patent Planing Machine Company of Canada, Montreal, Que., (Assignees of the Executors of the Estate of Joseph P. Woodbury, Boston, Mass., U. S., deceased,) 23rd February 1878 (Extension of Patent No. 3433,) for 5 years.

**No. 8439. Improvements on Planing Machines.***(Perfectionnements aux machines à raboter.)*

The Woodbury Patent Planing Machine Company of Canada, Montreal, Que., (Assignees of the Executors of the Estate of Joseph P. Woodbury, Boston, Mass., U. S., deceased,) 23rd February, 1878, (Extension of Patent No. 3433,) for 5 years.

**No. 8440. Tubular Kerosene Lantern.***(Lanterne à kérosène tubulaire.)*

John H. Stone, Hamilton, Ont., 23rd February, 1878, (Extension of Patent No. 8350,) for 5 years.

**No. 8441. Machine for Sawing Wood.***(Machine à scier le bois.)*

John Gives, Shakespeare, Ont., 23rd February, 1878, (Re-issue of Patent No. 6715).

*Claim.*—A pair of double cutting teeth A placed between a pair of drags or clearing teeth B and separated by parallel slots D D' of equal or unequal widths.**No. 8442. Improvements on Combined Anvils and Vises.***(Perfectionnements aux ancrans et clous combinés.)*

Charles A. Parker and Edwin P. Curtis Worcester Mass., U. S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination with the anvil body A and movable vise jaw D, of the base extension A', for supporting said jaw, 2nd. In combination with the anvil body A having squared jaw A' and base extension A' with guide way c, the movable vise jaw D with its foot d seated and guided on the extension piece A', working square and flush against the end A', the operating screw E passing through central part of jaw D and screwing into the end of the anvil body, and the spring F, 3rd. The cast iron anvil body A with chilled top surface, cored or hollowed out internally, and provided with the jaw guiding and supporting piece A', vise jaw D and jaw operating screw E.**No. 8443. Improvement on Stove Boards.***(Perfectionnement des sous-pells.)*

John S. Brooks, Brooklyn, N. Y., U. S., 23rd February, 1878, for 5 years

*Claim.*—A support to the headed edge of a stove board consisting of a corrugated hem c located on the underside of such headed edge**No. 8444. Improvements in Eyelets.***(Perfectionnements dans les œillets.)*

Solomon W. Young, Providence, R. I., U. S., 23rd February, 1878, for 5 years.

*Claim.*—The eyelet A having the inwardly turned teeth a at the top of its tubular portion, and the slots b extending from the bottom of such serrations to, or nearly to the base flange c**No. 8445. Improvement on Bolting Gauges.***(Perfectionnement des jauges de scieries.)*

George W. Church, Gardiner, and Wellington R. Church, Farmingdale, Me., U.S., 23rd February, 1878, for 5 years.

*Claim.*—The combination with the table of a circular saw, of gage a, sliding bed j, scale d, flinger k, wheel f, rack e and bed c, with its guide b.**No. 8446. Improvements on Carriage Tops.***(Perfectionnements aux soufflets de voitures.)*

Joel N. Whipple, Volgu, Iowa, U. S., 23rd February, 1878, for 5 years.

*Claim.*—1st. In combination with the bows and seat of a carriage, the arch B having a segmental rack B' and flange B, between which the detent, with spring D' and point D, is placed, and lever D for actuating the detent, 2nd. The side curtains containing side rods E E bent to conform to the shape of the curtains and having projecting points, in combination with the back curtain, with tubular rod F for securing the curtains.**No. 8447. Improvements in Shovels.***(Perfectionnements dans les pelles.)*

John Johnson, Memphis, Tenn., U. S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The blade A provided with a protecting shield B, overhanging and secured to its top edge, 2nd. The blade A with its dove-tailed seat b in its attached shield B, and the handle C with its dovetailed ferrule C', 3rd. The handle C with its dovetailed top ferrule C' and the dove-tailed hand piece D.**No. 8448. Improvements in Fences.***(Perfectionnements dans les clôtures.)*

Orlando H. Smith, Ellettsville, N.Y., U.S., 23rd February 1878, for 5 years.

*Claim.*—The combination with two or more fence stakes, each consisting of four braces or supports, to make a firm and substantial fence post, secured by a firm loop interwoven by the rider C having rails or boards, poles or slabs secured thereon.**No. 8449. Improvements in the Manufacture of Belting.***(Perfectionnements dans la fabrication des courroies.)*

John Murphy, Brooklyn, N.Y., U.S., 23rd February 1878 for 5 years

*Claim.*—A belt constructed in the manner described and provided with an extra strip of sheet rubber, or its equivalent inserted directly beneath the butt joint of the outer ply.**No. 8450. Improvement on Box Piling.***(Perfectionnement dans l'emplacement des ferrailles.)*

Edward G. Scovil, Coldbrook, N.B., 23rd February, 1878, for 5 years

*Claim.*—1st. A hollow pile or skeleton box, composing part of a pier, consisting of a bar previously shaped, to form integrally two vertical sides A A and a bevelled end B, with or without bottom bars D, and sometimes covered with top bars C for holding therein scrap iron to be rolled thereon, 2nd. A pile composed in part of a bar shaped or bent to form integrally two vertical sides A A and a sloping end E.**No. 8451. Unguent for Curing External Wounds.***(Onguent pour soigner les plaies extérieures.)*

François X. Destrampes, St. Catharines, Que., 23rd February, 1878, for 5 years.

*Résumé.*—Un onguent composé de gomme de pin, gomme d'épinette rouge, saumou, blanc d'Espagne, jaune d'œuf.**No. 8452. Machine for Washing Clothes.***(Machine à laver le linge.)*

Jean B. Rivard, Bécancour, Que., 23rd February, 1878, for 5 years

*Résumé.*—La boîte A ayant une tablette B, frotteur K, supports D, en combinaison avec l'essieu G renfermant les roues F, F, et faisant mouvoir les bras H H attachés aux pieds E pourvus du montant C.**No. 8453. Improvements in Car Axles.***(Perfectionnements dans les essieux de voitures.)*

Nathaniel Jones, Syracuse, N.Y., U. S., 23rd February, 1878, for 15 years.

*Claim.*—1st. The combination of the wheel A with hollow or bored axle C, and the wheel A' with solid axle C' and sleeve D; 2nd. The combination of the wheel A with hollow or bored axle C, the wheel A' with solid axle C', having swivel d e on its end, the box F and key h, 3rd. The combination of the wheel A with hollow or bored axle C, having one or more exterior circumferential grooves a, the wheel A' with solid axle C' and sleeve D, and one or more keys b.**No. 8454. Process for Glossing Labels.***(Procédé pour lustrer les étiquettes.)*

Charles C. Macbrair, Cincinnati, Ohio, U. S., 23rd February, 1878, for 5 years.

*Claim.*—The process of coating, glossing or sizing sheets of printed papers or other sheets of paper by, first, securing two sheets back to back and feeding them in this condition between two rollers which, when in motion automatically receive the gloss or sizing from a fountain or vat.**No. 8455. Improvements on Road Scrapers.***(Perfectionnements aux éboueurs de chemins.)*

William Brown, 2nd, Winchendon, Mass., U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. An angular road scraper and beveler provided with a series of long guiding bars, poles or brush, rigidly attached to the rear side of the scraper, in such manner that the scraper will retain its angle with the line of draft, 2nd. The removable timber D from the scraper A, constructed so that the scraper may be inverted to form a drag to smooth the road surface.**No. 8456. Machine for Renovating Feathers.***(Machine à rafraîchir la plume.)*

James E. McEchran, Chatham, Ont., 23rd February, 1878, for 5 years

*Claim.*—The crank shaft D, connecting rods C, screens B, partition G and slides E, combined for the purpose of agitating feathers and freeing them from dust whilst being steamed and dried, or, as is usually termed, re-used.**No. 8457. Improvements in Pantaloon.***(Perfectionnements dans les pantalons.)*

Jacob W. Davis, San-Francisco, Cal., U.S., 23rd February, 1878 for 5 years.

*Claim.*—Pantaloon provided with permanent patch and stay pieces of the same cloth or fabric of which the pantaloon are made up, said pieces being secured thereto when the pantaloon are manufactured and arranged with the face or nap, in close contact with the fur or wrong side of the cloth, and stitched around the entire edge.

**No. 8458. Improvements on Sewing Machines.** (*Perfectionnements aux machines à coudre.*)

Charles M. Banks and Robert W. Park Philadelphia, Pa., U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination with the reciprocating needle-bar B, standard E and spear-head *h*<sub>1</sub>, of the lever F pivoted to said standard at *f*, and the lever G pivoted to lever F and *g*, said levers and standard being constructed and provided with mechanism, so that the lever G shall be alternately thrown on opposite sides of the spear head and the proper intermittent reciprocating motion imparted to the bar B; 2nd. The combination with the reciprocating needle bar B, recessed standard E, provided with loop or equivalent *e* and spear-head *h*, of the levers F and G, springs *e* and collar *f*; 3rd. Adjustable plate H carrying the spear-head *h*<sub>1</sub>, in combination with the head of the machine, the reciprocating needle bar B, standard E and intermediate mechanism, for imparting motion to said needle-bar.

**No. 8459. Improvements on Beer Pitchers.** (*Perfectionnements aux pots à bière.*)

Solomon C. owell, Palmyra, N.Y. U.S., 23rd February, 1878, for 5 years

*Claim.*—1st. The pitcher A, in combination with the air tube B and the lid E, into which is secured the diaphragm H, 2nd. The lid E, in combination with the diaphragm H, the valve V and the spout L; 3rd. The lid E, in combination with the elastic ring D in the groove C.

**No. 8460. Improvements on Skates.** (*Perfectionnements aux patins.*)

Robert Guy, Darmouth, N.S., 23rd February, 1878, for 5 years.

*Claim.*—The combination of the sole clamps *g*, with sole plate *f* and heel prod C.

**No. 8461. Improvements on Shingle Machines.** (*Perfectionnements aux machines à bardeau.*)

John Goldie and Daniel Cameron, Galt, Ont. 23rd February, 1878, (Extension of Patent No. 2115,) for 5 years.

**No. 8462. Improvements on Cultivators.** (*Perfectionnements aux cultivateurs.*)

James B. Armstrong, Guelph, Thomas Galloway and John Larsen, Oshawa, Ont. 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination with flexible locking devices, for the teeth of seeders and cultivators, of the spring C, constructed of ribbon, bar or round steel (or other suitable material) wound around a central axis, in regular or irregular convolutions to a spiral-scroll form, or to a spiral volute form; 2nd. The spring C, in combination with the locking studs F provided with check and stop blocks and the drag bars A, 3rd. The eccentric block D, in combination with the spring C and draw bars A, 4th. Quadrant brackets G, in combination with the teeth, drag-bar and flexible locking bars, of a spring seeding or cultivating machine, for the purpose of permitting the angle of the teeth to the ground, to be altered without varying the character or strength of the locking device.

**No. 8463. Improvements on Snow-Ploughs.** (*Perfectionnements aux charrues à neige.*)

James O. Stackhouse, St. John, N.B., 23rd February, 1878, (Extension of Patent No. 2103,) for 5 years.

**No. 8464. Improvements on Drying Apparatus.** (*Perfectionnements aux appareils de séchage.*)

Levi K. Fuller, Brattleborough, Vt., U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination of the drying chamber A, blower E, condenser H and pipes D G, 2nd. The combination of a suitable exhaust blower and condenser, arranged to take moist air from a drying room, condense the moisture contained in it, and put the dried air back into the room; 3rd. The combination of a condenser H, with a heating apparatus C, or its equivalent, in the drying room, when arranged in such a manner that the former condenses the moisture from the air heated by the latter, before it re-enters the drying chamber, 4th. A drying chamber or room A provided with an internal heating apparatus C, or its equivalent, a blower for forcing to dry air, and an exit for the moist air.

**No. 8465. Improvements on Circular Sawing Machines.** (*Perfectionnements aux scies circulaires mécaniques.*)

William McDonald, Calais, Me., U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The journal G, centering in the end of the saw arbor B, and removable therefrom; 2nd. The removable journal G, centering in the end of the saw arbor, having a raised shoulder, and a hollow sleeve screwing thereon, and cutting against the end of the arbor.

**No. 8466. Improvement in Spring Beds.** (*Perfectionnement dans les lits à ressorts.*)

Esos C. Healey, Jarvis, Ont., 23rd February, 1878, for 5 years.

*Claim.*—The mode of connecting the slats AA, by means of the looped wire BB.

**No. 8467. Apparatus for Trimming Bevel and other Gearing.** (*Appareil à décroûter les roues coniques et autres.*)

John Smith and Josiah Course, Carleton, Eng., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination in an ordinary lathe of standard A, carrying radial bracket Et, with slide arm F carrying slide rest G and cutter H; 2nd. The combination of standard A with collar plate M<sub>2</sub>, carrying fixed

centre M<sub>1</sub> and slotted link M, and with adjustable crank or disc N driven by over-head motion, carrying rod L, sliding rest G and cutter H; 3rd. The combination of the slide arm F carrying rest G and anti-friction roller F<sub>2</sub>, with cam plates Q and with connecting rod R<sub>2</sub> sliding block R<sub>1</sub> and screw R, 4th. The combination of the vertical and adjustable slide F with cam plates Q; 5th. The combination (or not) with slide arm F, of lever and weight F<sub>1</sub>, 6th. The combination in a planing, shaping or slotting machine of bracket R, slide S, actuated by screw S<sub>1</sub>, vertical slide T and spring Z, with anti-friction roller V and cam plates Q; 7th. The combination of vertical slide W and adjustable screw *x*, with cam plates Q, 8th. The combination of bracket R and its appendages with sliding rest G.

**No. 8468. Mechanism for Opening and Closing Doors of Hatchways.** (*Appareil à ouvrir et fermer les panneaux d'écouillers.*)

John B. Waring, Stamford, Ct., and William O. Allison, New York, U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination with a swinging door or cover provided with a downwardly-extended rod, bar or arm, having an inclined face, of an elevator platform, car or cab, provided with a tappet or projections, whereby during the ascent of said platform, car or cab, the said door or cover is opened with a slow initial movement, to permit the passage of the said platform, car or cab, and during the descent of said platform, car or cab, the door or cover is supported in closing, so that it will not slam noisily; 2nd. The combination with a swinging door or cover, provided with a downwardly-extended rod, bar or arm, having an inclined face, and an elevator platform, car or cab, provided with a tappet or projection, for acting on the inclined face of the said rod, bar or arm, of a push piece and prop mounted on the elevator platform, car or cab, whereby the door or cover may be opened by the action of the tappet or projection on the rod, bar or arm, with a slow initial movement, and subsequently by the action of the push piece, with a more rapid movement; 3rd. The combination with a swinging door or cover, provided with a downwardly extending rod, bar or arm, having an inclined face, and an elevator platform, car or cab, provided with a tappet or projection, for operating on the inclined face of the rod, bar or arm, of a recess in said arm to permit the passage of the tappet or projection beyond it, after performing its work 4th. The combination with a swinging door or cover, of a rod, bar or arm, attached rigidly thereto and extending therefrom, and having an inclined face to be operated upon by a tappet or projection on an elevator platform, car or cab, and serving as a weight for effecting the closing of the door or cover, and preventing it from being slammed against the side of the hoistway during its opening; 5th. The combination with a swinging door or cover, of a hinged support and a rod, bar or arm, to be operated upon by a tappet or projection on an elevator platform, car or cab, all made in one piece, whereby rigidity and firmness are secured, 6th. The combination with a swinging door or cover, of a bell crank, or bent lever, pivoted in a hoistway, some distance above the said door or cover, a connection between said door or cover and one arm of said lever, a projection extending from the other arm, and an incline carried by an elevator platform, car or cab, whereby during the descent of the said platform, car or cab the door or cover will be opened to permit its passage, and during the ascent of the platform, car or cab, above it, the door or cover will be supported so that it will not slam noisily. 7th. The combination of a door B, support F, hinge C and rod, bar or arm E, made in one piece, a bell-crank or bent lever L, a connection between the latter and the said support F of the door or cover B, the tappet or projection G and an incline K on the elevator platform, car or cab D.

**No. 8469. Odourless Excavating Apparatus.** (*Appareil inodore àvider les latrines.*)

Charles H. Vouté, Toronto, Ont., 23rd February, 1878, for 5 years.

*Claim.*—1st. A receiving cask having two compartments C and C<sub>1</sub>, connected respectively by air hose E and F to an air pump D, in such a manner that the operation of the pump exhausts the air from one compartment, while forcing it into the other; 2nd. The hose A leading from the vault B to the compartment C of a receiving cask, having a partition C<sub>2</sub> provided with an air-tight valve G, in combination with the compartment C; and discharging hose H, the said compartments being connected to the double acting air pump D, 3rd. A deodorizing compound made of tar, saw-dust and carbolic acid, or other suitable ingredients, and burnt within or near the pitting tent used in connection with the removal of night soil, 4th. The cast-iron head M, fitting the wooden barrel or cask L and held thereto by the cross bar P butting against the angle iron N and secured by the screwed bolt O; 5th. The cast-iron head M provided with lugs Q, in combination with the bolts R.

**No. 8470. Process for Improving Fish Scrap.** (*Procédé pour améliorer les déchets de poisson.*)

Stephen L. Goodale, Saucé, Me., U.S., 23rd February, 1878, for 5 years.

*Claim.*—The process of washing fish or fish scrap with water subsequent to its being cooked and before it is finally pressed, whereby gelatine is removed, the yield of oil increased, and subsequent drying of the scrap facilitated.

**No. 8471. Improvements in Potato-Diggers.** (*Perfectionnements dans les arrache-patates.*)

Lewis F. Bailey, Newport, N.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. In combination with the driving or carrying wheel of a potato-digger, gauge wheels D carried in frames secured to the axles of the main wheels, and raised or lowered at the will of the driver, 2nd. The combination of the wheels AA, frames BB, curved bars B<sub>1</sub> and teeth C; 3rd. The combination with the carrying wheels and digging apparatus proper, of a shaker vibrated through a crank disc and pinion intermeshing with and operated by a circular rack on one driving wheel.

**No. 8472. Improvements in Pumps.** (*Perfectionnements dans les pompes.*)

Peter Wilson and Robert Lynn, Buffalo, N.Y., U.S., 23rd February, 1878, for 5 years.

*Claim.*—1st. The combination of the bottom head A with its passages and valves DD, the cylinder E with side passages GG, the top head H with chamber I<sub>1</sub> and two or more valves JJ, and the valve chamber K extend-

ing over the cylinder and both side passages; 2nd. The plunger consisting of the four caps NN and OO, the leathers RR and one or more centro washers P; 3rd. The combination of the top plate W with passage A<sup>r</sup> and chamber B with intern pipe G, and the spout E with reservoir H.

**No. 8473. Machine for Holding Wash-Tubs.**

(*Machine à supporter les cuves à lessive.*)

Charles Barlow, Thomas B. Ferrill and Charles W. Taylor, Cookshire, Que., 28th February, 1878, for 5 years.

*Claim.*—The combination of uprights AA, round bar B, flat bar C, rack D cross bars EE, board F, round bar G, drip board H, cross bar I, bar or laton J, button K and rollers L.

**No. 8474. Improvements on the Granulation of Ligneous Substances.** (*Perfectionnements dans le granulation des matières ligneuses.*)

William E. Nickerson, Somerville, Mass., U.S., 28th February, 1878, for 5 years.

*Claim.*—1st.—The method or process of reducing bark, etc., etc., to fine particles, by first forming in it a series of kerfs and then scraping off the ridges between the kerfs; 2nd. The combination on the cylinder C of the set of kerf forming teeth e e c with the ridge reducing scrapers k k k of less projection.

**No. 8475. Improvements on Lamp Heaters.** (*Perfectionnements aux chauffeuses à lampes.*)

Charles A. Howard, Pontiac, Mich., U.S., 28th February, 1878, for 5 years.

*Claim.*—In combination with an ordinary lamp, the removable sheet metal cylinder C provided with the notched rim E, and diaphragm G having the elongated opening a and perforations b.

**No. 8476. Improvements on Buckboard Waggon.** (*Perfectionnements aux voitures-panaches.*)

James L. Phillips, Lowville, N.Y., U.S., 28th February, 1878, for 5 years.

*Claim.*—1st. The buckboard L suspended at the front from the end of h a f or elliptic spring G, secured to and in line with the bolster B and at

the rear to the end of OC or elliptic springs HH, secured to and in line with two side bars CC, connecting the rear axle A with the bolster. 2nd. The buck board L hung between side bars CC, having a front cross-bar K attached by leather or metal shackles JJ to a hulf C, or elliptic spring G fastened to a bolster B which is pivoted to the front axle A by a king bolt F. 3rd. The spring buck board L hung between side bars CC, having its rear cross-bar K attached by leather or metal shackles JJ to the end of CC or elliptic springs HH, fastened to the side bars CC, secured to the rear axle A and bolster B. 4th. The cross-bar D, connecting the side bars CC, having a short reach D<sup>r</sup> extending to the bolster B, and a brace E extending below the axle A and receiving the king bolt F, for supplementary bracing the connection of the side bars CC and bolster B.

**No. 8477. Improvements on Clothes Dryers.**

(*Perfectionnements aux séchoirs à linge.*)

John G. Yemen, Stratford, Ont., 28th February, 1878, for 5 years.

*Claim.*—The post B, with the hub H and arms JJ thereon, in combination with the weights CC.

**No. 8478. Improvement on Cans for Liquids.**

(*Perfectionnement des bidons à liquides.*)

John Graves, New York, U.S., 28th February, 1878, for 5 years.

*Claim.*—1st. A box or case for oil and other cans formed of two sections, separated at or near the centre of two of its sides, the sides of the lower section having bearings to support the trunnions upon the sides of the can; 2nd. A box or case for oil, and other cans made of two sections, separated at or near the centre of two of its sides, the meeting edges of these sides having bearings for the trunnions upon the sides of the can, while the remaining sides are arranged with locking devices, for connecting the sections; 3rd. A box or case for oil and other cans formed of two sections, separated at or near the centre of two of its sides, the remaining sides being extended above the can and provided with central bearings for the trunnions upon the sides of the can, so that the can may be tilted therein; 4th. A box or case for oil and other cans formed of two sections, separated at or near the centre of two of its sides, the meeting edges of the upper and lower sections having recesses for the trunnions upon the sides of the can, and bevelled edges to prevent bulging of the sides.

List of Patents issued up to 23th March, 1878, but not yet Officially published in the Patent Office Record.

- No. 8479. E. H. Jenkins, Dayton, Ohio, U. S. A., "Lamp Burner," 28th February, 1878.
- No. 8480. H. Macdonald, Wallaceburgh, Ont., "Bread Raising Machine," 28th February, 1878.
- No. 8481. R. Soper, London, Ont., and A. Soper, Tilsonburg, Ont., "Combined Looking Glass, Comb Case and Towel Rack," 28th February, 1878.
- No. 8482. G. R. Prowse, Montreal, Que., "Stove," 28th February, 1878.
- No. 8483. D. J. George, Winona, Minn., U. S. A., "Wash Board," 28th February, 1878.
- No. 8484. J. Hogill, Jr., Seaforth, Ont., "Windmill Pump," 28th February, 1878.
- No. 8485. S. K. Thompson, Brookline, Mass., U.S.A., "Bark Raping and Cutting Machine," 28th February, 1878.
- No. 8486. T. H. King, San Francisco, Cal., U. S. A., "Wheels for Vehicles," 28th February, 1878.
- No. 8487. J. Nesbitt and A. Anderson, Toronto, Ont., "Curtain Fixtures," 4th March, 1878.
- No. 8488. C. S. Gorman, Irvine, Scot., "Chromate Process," 4th March, 1878.
- No. 8489. T. Austin, Virginia City, Nev., U. S. A., "Washing Machine," 4th March, 1878.
- No. 8490. E. and C. Gurney, Hamilton, Ont., "Stove," 4th March, 1878.
- No. 8491. J. DuBois and E. F. Bengler, Williamsport, Pa., U. S. A., "Metal Working Lathes Tools," 4th March, 1878.
- No. 8492. F. M. Lechner and J. A. Jeffrey, Columbus, Ohio, U. S. A., "Mining Machine," 4th March, 1878.
- No. 8493. J. O. Beaupreland, Fall River, Mass., U. S. A., "Washing Machine," 4th March, 1878.
- No. 8494. R. Hensley and D. Anderson, Montreal, Que., "Looks for Tying Bags," 4th March, 1878.
- No. 8495. W. Wilmington, Toledo, Ohio, U. S. A., "Car Wheel," (Extension of Patent No. 2212.) 4th March, 1878.
- No. 8496. J. Bailiff, Ottawa, Ont., "Coal Oil Stove," (Extension of Patent No. 2366.) 4th March, 1878.
- No. 8497. J. Bailiff, Ottawa, Ont., "Coal Oil Stove," (Extension of Patent No. 2366.) 7th March, 1878.
- No. 8498. P. M. Bawltinimer, Woodstock, Ont., "Potato Digger," (Extension of Patent No. 2184.) 8th March, 1878.
- No. 8499. N. S. Woodward, (Assignee of R. Booth) and L. Smith, Sherbrooke, Que., "Automatic Fog Alarm," 8th March, 1878.
- No. 8500. A. McLean, B. Morton and J. W. G. Whitney, Toronto, Ont., "Stone Wash," 8th March, 1878.
- No. 8501. E. S. Redfern and C. B. Merchant, Meaford, Ont., "Washing Machines," 8th March, 1878.
- No. 8502. A. Bijur, New York, U.S.A., "Shutter," 8th March, 1878.
- No. 8503. E. S. Pratt, Buffalo, N.Y., U.S.A., "Folding Chair," 8th March, 1878.
- No. 8504. J. W. Elliot, Toronto, Ont., "Stove," 8th March, 1878.
- No. 8505. A. Gibson, Burford, Ont., "Potato Bug Gatherer," 8th March, 1878.
- No. 8506. L. Côté, St. Hyacinthe, Que., "Foot and Guide for Sewing Machines," 8th March, 1878.
- No. 8507. C. L. Marshall, Boston, Mass., U.S.A., "Anchor," 8th March, 1878.
- No. 8508. J. P. Lawson, Chandler's Valley, Pa., U.S.A., "Sled Tongue," 8th March, 1878.
- No. 8509. E. Baines, Toronto, Ont., "Motive Power Generator and Motor," 8th March, 1878.
- No. 8510. D. Ahl, Nowville, Pa., U. S. A., "Felted Surgeon's Sphincter," 8th March, 1878.
- No. 8511. J. N. Lilly, Chicago, Ill., U.S.A., "Horse Shoe," 8th March, 1878.
- No. 8512. T. H. King, San Francisco, Cal., U.S.A., "Anti-Friction Bearing for Shafts and Axles," 8th March, 1878.
- No. 8513. G. P. Sheffield, Ont., and G. W. McKee, Brooklyn, N.Y., U.S.A., "Gas Burner," 8th March, 1878.
- No. 8514. W. T. Cleveland, Richmond, Que., "Carriage Pole and Shaft Adjuster," 8th March, 1878.
- No. 8515. L. and A. Dion, St. Thomas, Que., "Tug Pin for Harness," 8th March, 1878.
- No. 8516. W. R. May, McClellens, Mich., U. S. A., "Pump," 8th March, 1878.
- No. 8517. F. B. Stevens, and J. L. Bond, Port Huron, Mich., U.S.A., and C. Mackenzie, Sarnia, Ont., "Hydrant Valve," 8th March, 1878.
- No. 8518. C. W. Glidden, Lynn, Mass., U. S. A., "Heel Nailing and Trimming Machine," 8th March, 1878.
- No. 8519. B. C. Pole, Washington, Columbia, U.S.A., "Ticket Register," 12th March, 1878.
- No. 8520. Jno. W. Denrman, Maitland, Ont., "Cathead," 12th March, 1878.
- No. 8521. E. A. Godkin, Elizabethtown, Ont., "Dress Model," 12th March, 1878.
- No. 8522. J. J. Hogue, Montreal, Que., "Time Counter," 12th March, 1878.
- No. 8523. J. G. Brown and G. T. Cooke, Stratford, Ont., "Plating Machine," 12th March, 1878.

No. 8524 W Stafford, Montreal, Que., 'Lubricator for Steam Engine Cylinders,' 12th March, 1878.  
 No. 8525 B A Higgins, Farmington, Me., U.S.A. 'Handles for Shovels, Forks, &c.," 12th March, 1878.  
 No. 8526 G. Buchanan, Washington, Pa., U.S.A., "Washing Machine," 12th March, 1878.  
 No. 8527. C. James, Port Colborne, Ont., "Well Protector," 12th March, 1878.  
 No. 8528. G.W. Whelan, Sun Prairie, Wis., U.S.A., "Shovels and Tongs," 12th March, 1878.  
 No. 8529. J. Beatty, Montreal, Que., "Hoist," 12th March, 1878.  
 No. 8530. T. C. Darby, Pleshey Lodge, Eng., "Digging Machine," 12th March, 1878.  
 No. 8531. W. T. Nichols, Chicago, Ill., U.S.A., "Rotary Screw Harrow," 12th March, 1878.  
 No. 8532 J. T. Cody, Cincinnati, Ohio, U.S.A., "Lubricator," 12th March, 1878  
 No. 8533. C. Greenwood, Farmington, Me., U.S.A., "Ear Muller," 12th March, 1878.  
 No. 8534. H. A. Gore and E. W. Walker, Goshen, Indiana, U.S.A., "Carpet Sweeper," 12th March, 1878.  
 No. 8535. J. G. Kirkby, Wingham, Ont., "Silent Grain Feeder," 12th March, 1878.  
 No. 8536 A Cunningham, Milwaukee, Wis., U.S.A., Mill Stone Driver, 12th March, 1878.  
 No. 8537. H. B. Hayes, Woburn, Mass., U.S.A., "Meters and Motors," 12th March, 1878.  
 No. 8538. S. Miles, Closter, N.J., U.S.A., "Grain Reducing Machine" 12th March, 1878  
 No. 8539. T. F. Goulette, Montreal, Que., "Ice Scrapers," 12th March, 1878.  
 No. 8540. P Mudge, Ingersoll, Ont., "Spring Bed Bottoms and Mattresses," 12th March, 1878  
 No. 8541. W. Potter, Gananoque, Ont., "Carriage Body Adjuster," 12th March, 1878.  
 No. 8542. J. G. Phillip, Bangor, N.Y., U.S.A., "Door Fastening," (Extension of Patent No. 6830.) 14th March, 1878.  
 No. 8543. W. Firstbrook, Toronto, Ont., "Saws," 14th March, 1878.  
 No. 8544. W. Thomson, Toronto, Ont., (Assignee of F. Munn, Strathroy, Ont.) "Spring Regulators for Supporting Window Sashes," 14th March, 1878.  
 No. 8545 F D Bliss, New Haven, Ct., U.S.A., "Gas Burners," 14th March, 1878.  
 No. 8546 C Fugazzie and F. Fugazzie, Philadelphia, Pa., U.S.A., "Firemen's Belt and Fire Escape," 14th March 1878.  
 No. 8547. F. Holt, T. Brintnall and W. T. Rae, Newark, N.J., U.S.A., "Lamp Burners," 14th March, 1878.  
 No. 8548. J. H. Needles, Toronto, Ont., "Gas and Steam Works," 16th March, 1878.  
 No. 8549. E. M. Boynton, New York U.S.A. "Saw Files," 20th March, 1878.  
 No. 8550. A. Bernstein, Friedland, Russia, "Apparatus for Drawing off or Decanting Fluids," 20th March, 1878.  
 No. 8551. A. Spadone, Jersey City, N.J., U.S.A., "Belt," 20th March, 1878.  
 No. 8552. G. S. Brainerd, St. Albans, Vt., U.S.A., "Exhaust for Steam Engines," 20th March, 1878.  
 No. 8553. J. Spence, Waterbury, Ct., U.S.A., "Spring Hinge," 20th March, 1878.  
 No. 8554. S. Rush, Tyrone, Pa., U.S.A., "Sash Fastener," 20th March, 1878.  
 No. 8555. J. J. Dreyer, Lake City, Minn., U.S.A., "Harvester," 20th March, 1878.

No. 8556 H. C. Robb (Assignee of J. Robb and B. Selph), Lynchburg, Ohio, U.S.A., "Road Scraper," 20th March, 1878  
 No. 8557. W. H. Morrison, Canning, Ont., "Running Gear for Huggies," 20th March, 1878  
 No. 8558. G. W. Low and D. K. Dean, Erie, Pa., U.S.A., "Pump," 20th March, 1878.  
 No. 8559. F. M. Lyte, Savile Row, Middlesex Co., Eng., "Acid Chlorine Ion Process," 20th March, 1878.  
 No. 8560. F. M. Lyte, Savile Row, Middlesex Co., Eng., "Saline Sulphatation Process," 20th March, 1878.  
 No. 8561. A. J. Peerless, Toronto, Ont., "Roller Skate," 20th March, 1878.  
 No. 8562. W. J. Copp, Hamilton, Ont., "Cooking Stove," 20th March, 1878.  
 No. 8563. H. B. Cornish and C. P. Hunt, River Falls, Wis., U.S.A., "Horse Shoe," 20th March 1878.  
 No. 8564 T C Husted, F. Seaton, and J. M. Champi Suid, Kansas, U.S.A., "Grain Separator," 20th March, 1878.  
 No. 8565. J. H. Jones, Sarnia, Ont., "Combination Bat and Wash-Tub," 20th March, 1878.  
 No. 8566 H. Hancock, Mount Forest, Ont., "Saw Log Holder," 20th March, 1878.  
 No. 8567. F. W. Glen, Oshawa, Ont., "Process for Manufacturing Teeth for the Cylinders and Concaves of Threshing Machines," 20th March, 1878.  
 No. 8568. D. O. Hank, Marysville, Mass., U.S.A., "Weather Strip," 20th March, 1878.  
 No. 8569. T. H. Stanton, London, Ont., "Windsor Blind Fixture," 20th March, 1878  
 No. 8570. W. H. Wilson, W. C. Harris, and R. S. Rockwell Westfield, N.Y., U.S.A., "Sectional Steam Boiler," 20th March, 1878.  
 No. 8571. E. M. Boynton, New York, U.S.A., "Saw Handle," 20th March, 1878  
 No. 8572. W. Smith, Pittsburgh, Pa., U.S.A., "Gas Apparatus," 20th March, 1878.  
 No. 8573. J. Pattison, Dorking, Ont., "Reaping and Mowing Machine," 20th March, 1878.  
 No. 8574. F. X. Reno (Assignee of A. Q. Ross), Cincinnati, Ohio, U.S.A., "Combined Child's Waggon and Galloping Horse or Horses," 20th March, 1878.  
 No. 8575. J. Donnelly, Columbus, Ohio, U.S.A., (Assignee of E. S. Clark, Buffalo, N.Y., U.S.A.), "Grain Separator," 22nd March, 1878.  
 No. 8576. S. Gilzinger and A. A. Crosby, Rondout, N.Y., U.S.A., "Vehicle," 22nd March, 1878.  
 No. 8577. F. Armstrong, Bridgeport Conn., U.S.A., (Assignee of S. A. Chapman, Waterbury, Ct., U.S.A.), "Stringing Sleigh Belts," 22nd March 1878.  
 No. 8578. S. E. Griscom, Pottsville, Penn., U.S.A., (Assignee of T. McFeely Union City, Ind., U.S.A.), "Millstone Dressing Machine," 22nd March, 1878.  
 No. 8579. S. E. Griscom, Pottsville, Pa., U.S.A., (Assignee of T. McFeely, Union City, Indiana, U.S.A.), "Millstone Dressing Machine," 22nd March, 1878.  
 No. 8580. D. W. Norris, Elgin, Ill., U.S.A., "Incased Glass Vessel," 22nd March, 1878.  
 No. 8581. C. Hoeckh, Toronto, Ont., "Bridling Brush Attachment," 22nd March, 1878.  
 No. 8582. A. L. Baron, E. P. Cash, and D. Rankin, Bellaire, Ohio, U.S.A., "Lantern," 22nd March, 1878.  
 No. 8583. M. Johnson and M. C. Richardson, Lockport, N.Y., U.S.A., "Cultivator," 22nd March, 1878.  
 No. 8584. M. A. Hunter and L. J. Almon, (Executors of J. Hunter, Lancaster, N.B.), "Mill Furnace," (Extension of Patent No. 1634), 20th March, 1878.



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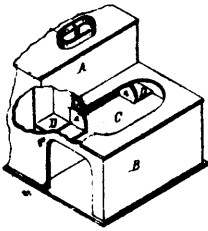
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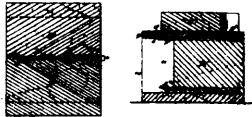
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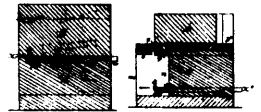
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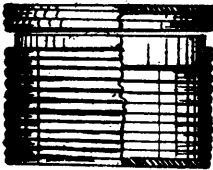
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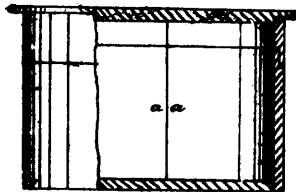
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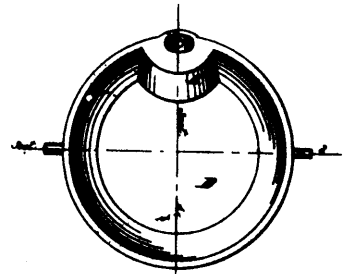
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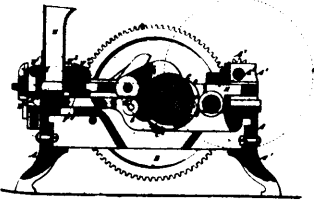
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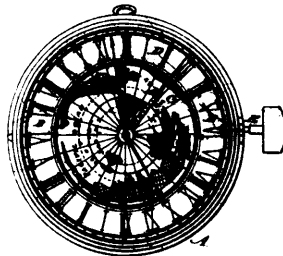
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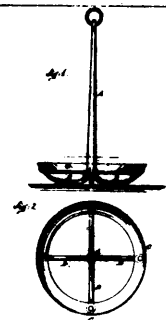
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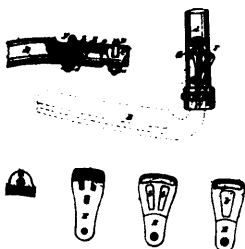
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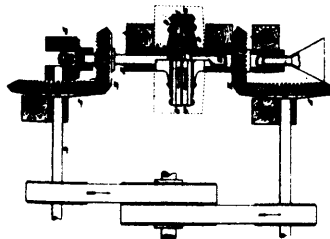
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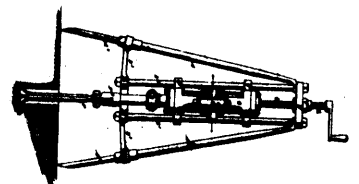
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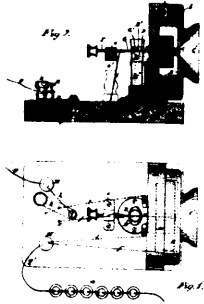


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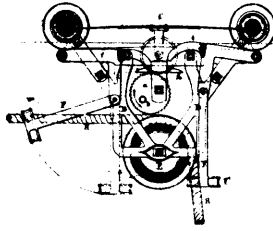


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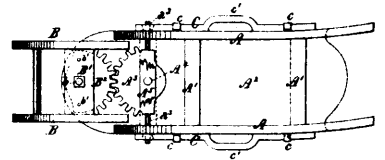




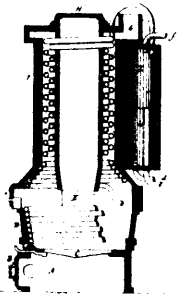
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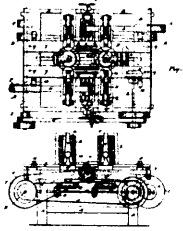
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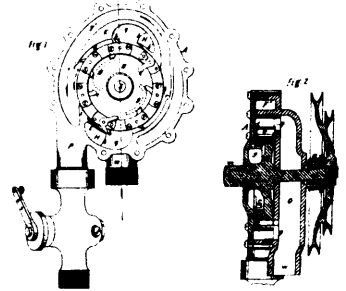
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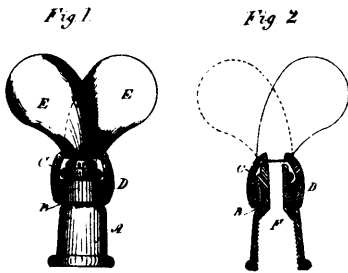
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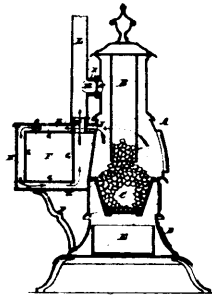
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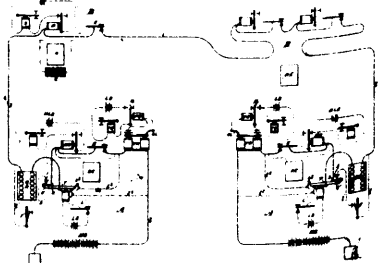
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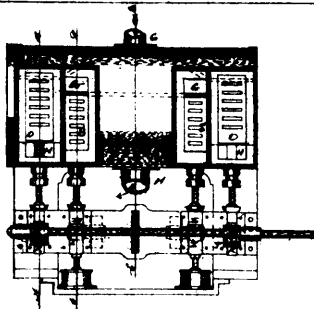
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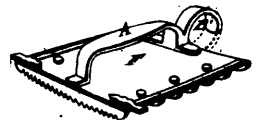
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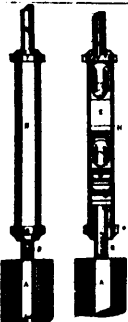
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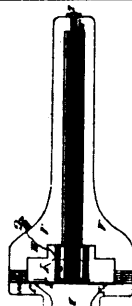
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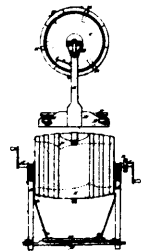
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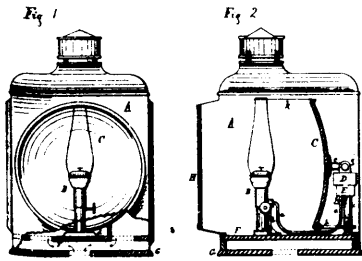
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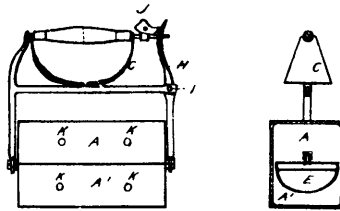
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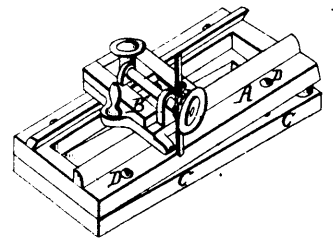
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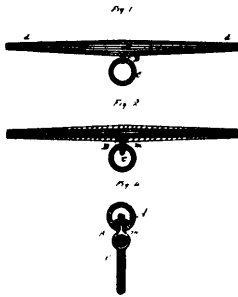
8373 Ham's Improvements on Headlights for Locomotives.



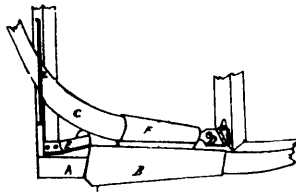
8374 Chalmers and Reynolds' Improvements on Contrivances for Ironing and Fluting Linen.



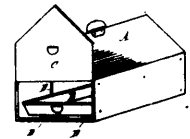
8375 Griscom's Improvements on Millstone Dressing Machines.



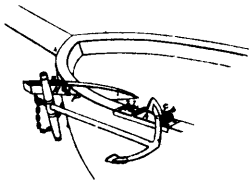
8376 Johnson's Improvements on Metal Neck Yokes



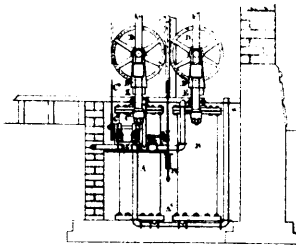
8377 Boydell's Improvements on Sleigh Runners.



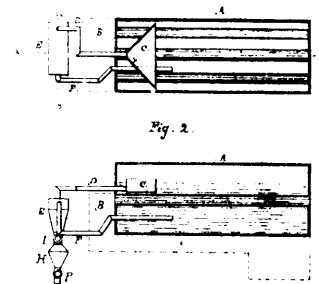
8378 Stebbins and Starr's Improvements on Baking Ovens.



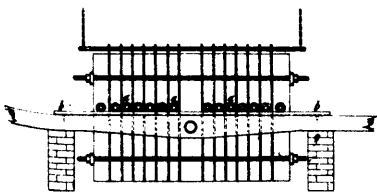
8379 Robbins' Improvements on Anchor Trippers.



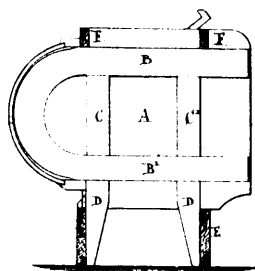
8380 Fensom's Improvements on Hoisting Machines.



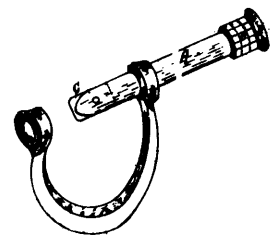
8381 Fordon's Improvement in Steam Boiler Cleaners.



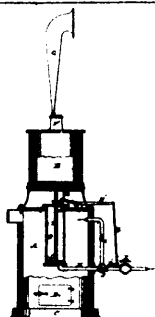
8382 Bowing's Improvements on Filter Presses.



8383 Kline's Improvements in Fanning Mills.



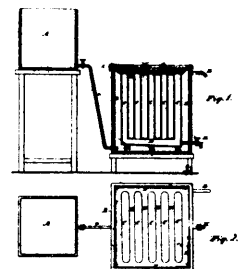
8384 Lockwood's Improvements on Bolt Locks.



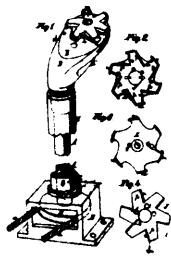
8385 Sweaner's Improvements on Fog Signals.



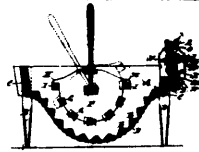
8387 Denison's Improvements in the Indexing of Books



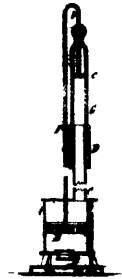
8389 Bowen's Improvements on Milk Coolers.



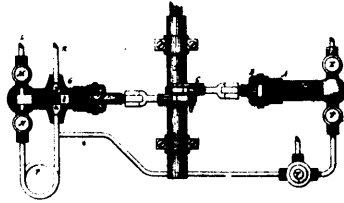
8390 Whitmore's Improvements on Peg Floats.



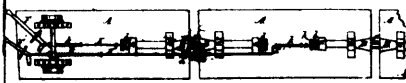
8391 Morehouse's Improvements on Combined Washers and Wringers.



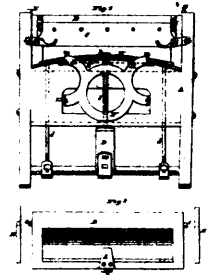
8392 Doolittle and Averill's Improvements in Pumps.



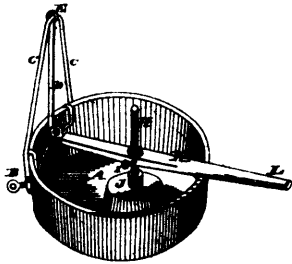
8393 Muther's Improvements on Steam Boiler Feed.



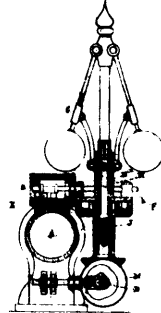
8384 Rowell and Bond's Improvements on Car Couplers.



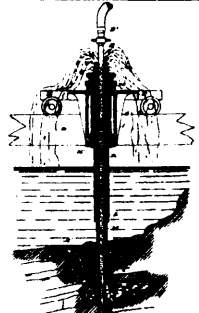
8395 Vollmar and Naylor's Improvements on Stove Jointing Machines.



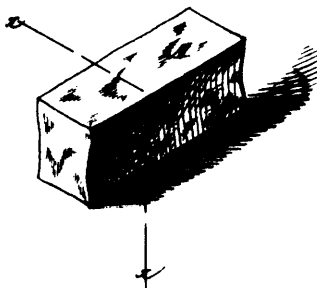
8396 Waldo's Improvements on Washing Machines.



8397 Dill's Improvements in Cut-off Valves.



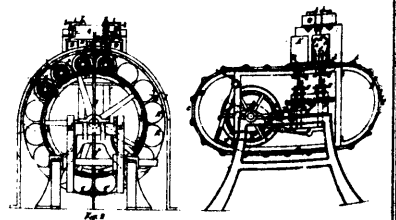
8398 Gilbert's Art of, and Apparatus for, Blasting Under Water.



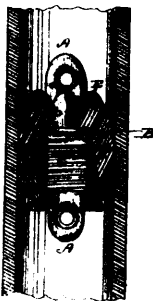
8399 Leigh and Saunders' Improvements in Preparing Dyes.



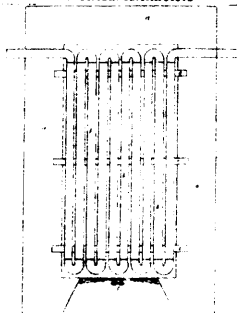
8400 Yagn and Surwill's Improvements on Manometrical Altimeters.



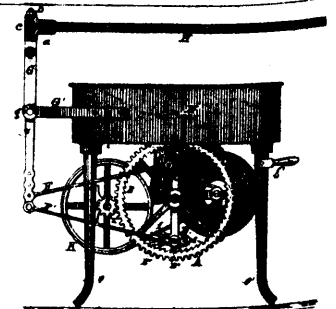
8401 Dillou, Bradford, Cleary & Cleveland's Improvements on Soldering Machines.



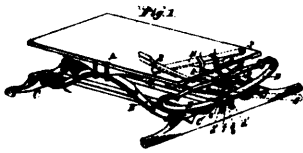
8403 Keyson's Adjustable Chain Pump Bucket.



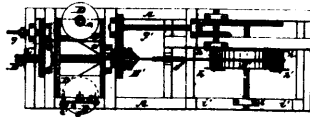
8404 O'Brien's Improvements in Steam Boilers.



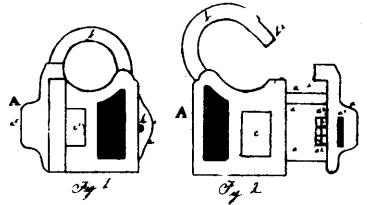
8405 Hammelmann's Improvements on Mechanical Forges.



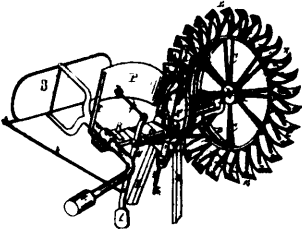
8406 McKown's Improvements in Vehicle Springs.



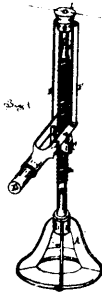
8408 Van Loon's Improvements on Wire Rope Machines.



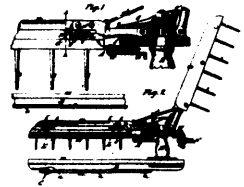
8409 Dunn's Improvements on Seal Locks.



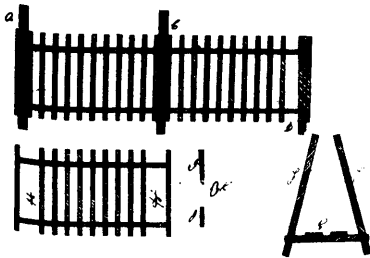
8410 Clark & Gregory's Improvements on Wind-Wheels.



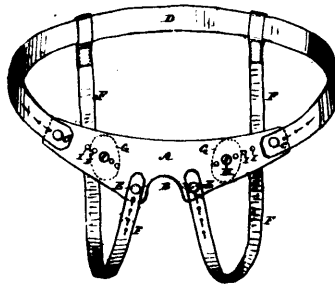
8411 Sherman's Improvements on a Lifting Jack.



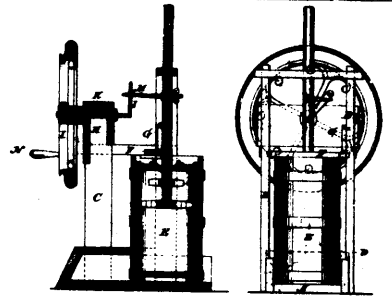
8412 Sweet, Faulkner, Sweet & Watson's Improvements on Reapers.



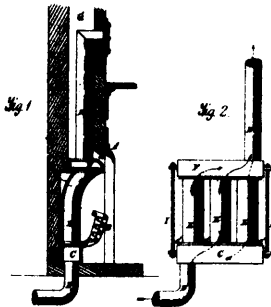
8413 Gray's Improvements on Farm Fences.



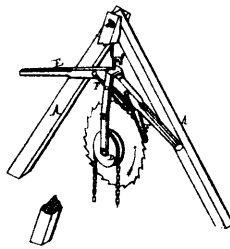
8414 Jameson's Improvements on Trusses.



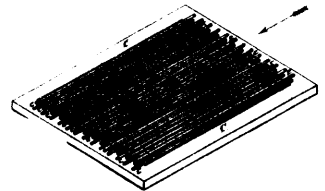
8415 Moulton's Improvements on Churn Powers.



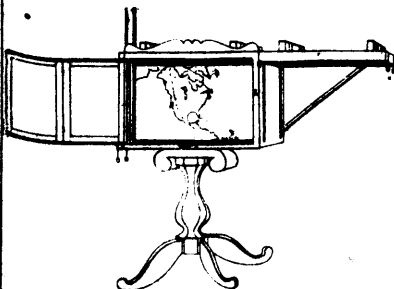
8416 Dimmick & Stine's Improvements on Stoves and Fireplaces.



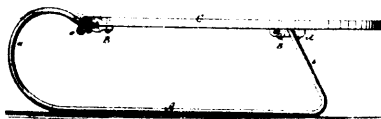
8417 Clark's Improvements on Stump Extractors.



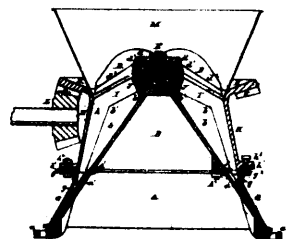
8418 Cooper and Foncar's Improvements in Threshing Machines.



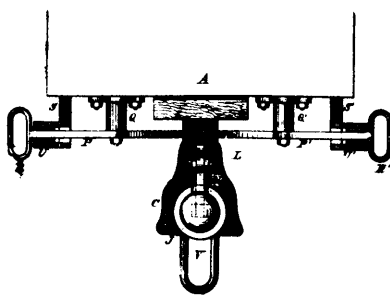
8422 Blais' Improvements on Show-Cases for Maps.



8423 Gilzinger and Crosby's Improvements on Sleighs.



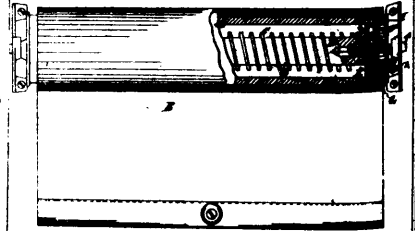
8424 Powers' Improvements on Grinding Mills.



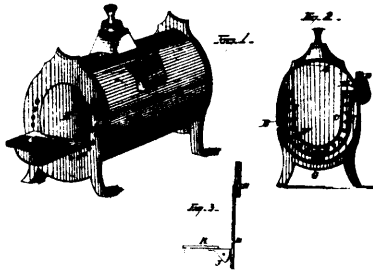
8425 Dette, Cohen and Millring's Improvements on Car-Couplings.



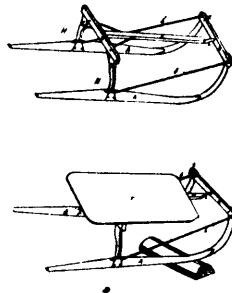
8426 Thomson's Improvements on Portable Fences.



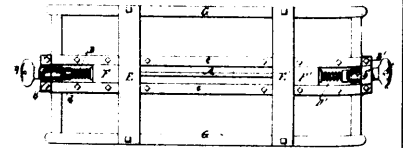
8427 Lake's Improvements on Curtain Rollers.



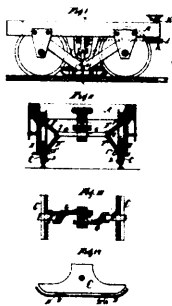
8428 Stewart's Improvements on Heating Stoves.



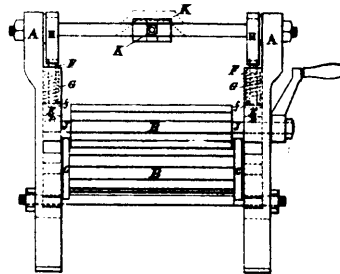
8429 Armstrong's Improvements on Sleigh Bottoms.



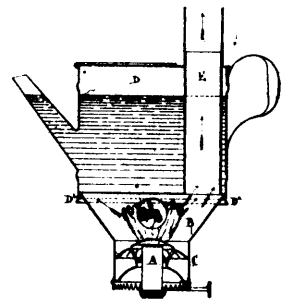
8430 Middleton's Drawbar and Bumper for Railway Cars.



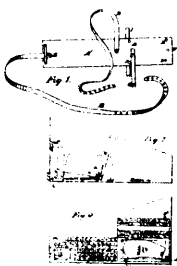
8431 Hadley's Improvement in Railway Car Brakes.



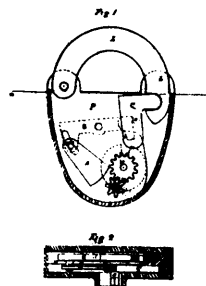
8433 Fee and Cable's Improvements on Clothes Wringers and Washing Machines.



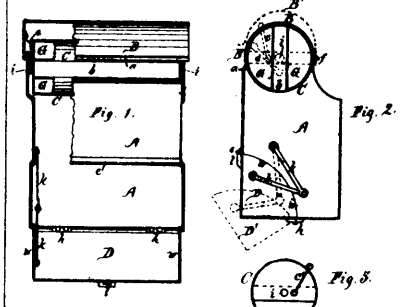
8434 McKenzie's Improvements on Lamp Heaters.



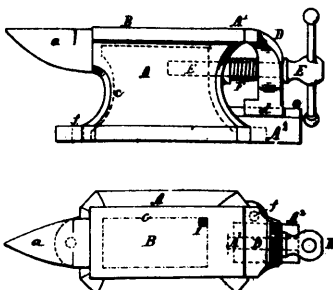
8435 McLellan's Improvements on Coat Measures.



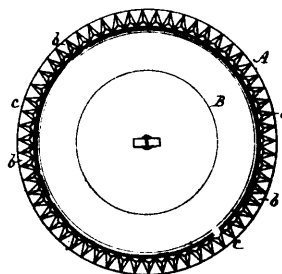
8436 McGregor's Improvements on Locks.



8437 Marsh's Improvements on Letter Boxes.



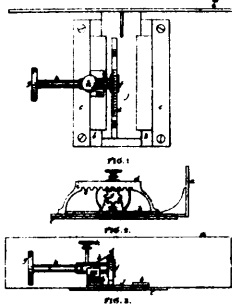
8442 Parker and Curtis' Improvements on Combined Anvils and Visers.



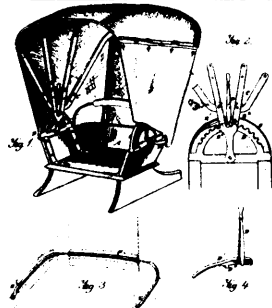
8443 Brooks' Improvement on Stove Boards.



8444 Young's Improvements in Eyelets.



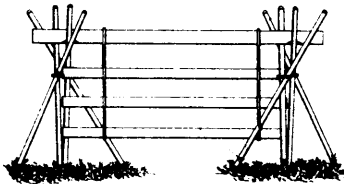
8445 Church's Improvement on Bolting Gauges.



8446 Whipple's Improvements on Carriage Tops.



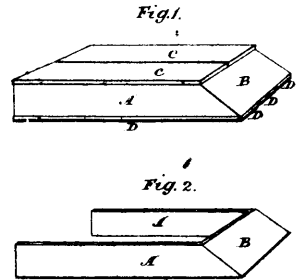
8447 Johnson's Improvements in Shovels.



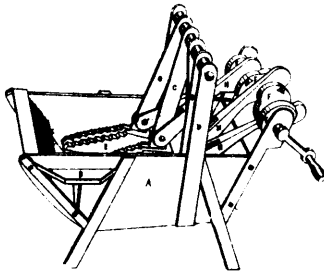
8448 Smith's Improvements in Fences.



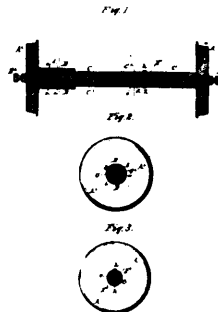
8449 Murphy's Improvements in the Manufacture of Belting.



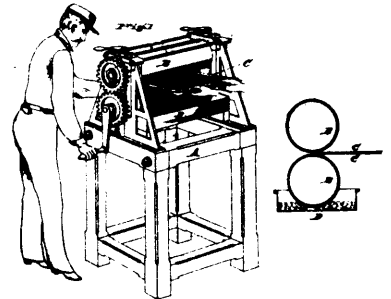
8450 Scovil's Improvement on Box Piling.



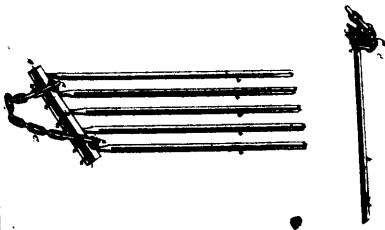
8452 Rivard's Machine for Washing Clothes.



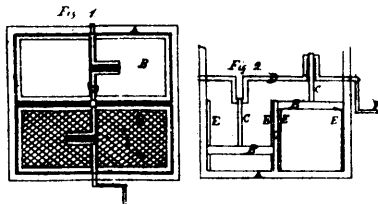
8453 Jones' Improvements in Car Axles.



8454 Macbrair's Process for Glossing Labels.



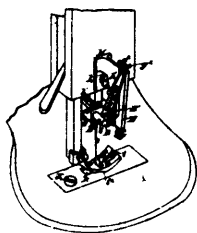
8455 Brown's Improvements on Road Scrapers.



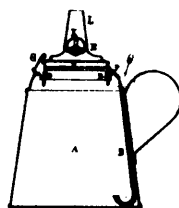
8456 McFhran's Machine for Renovating Feathers.



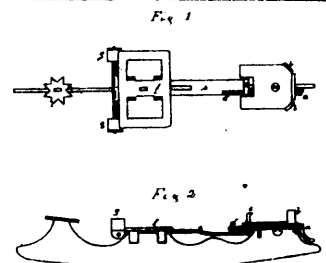
8457 Davis' Improvement in Pantalons.



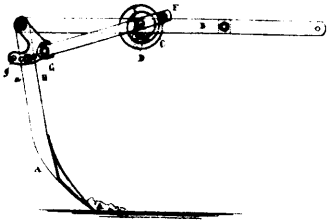
8458 Banks and Park's Improvements on Sewing Machines.



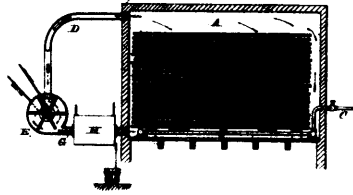
8459 Crowell's Improvements on Beer Pitchers.



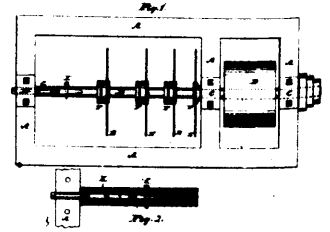
8460 Gay's Improvements on Skates.



8462 Armstrong, Galloway and Larsen's Improvements on Cultivators.



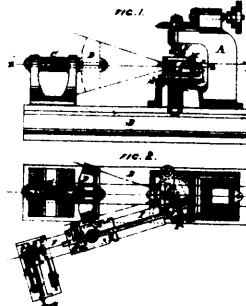
8464 Fuller's Improvements on Drying Apparatus.



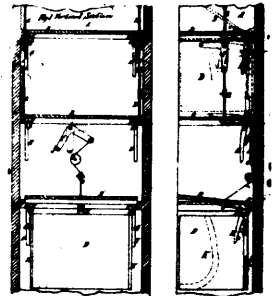
8465 McDonald's Improvements on Circular Sawing Machines.



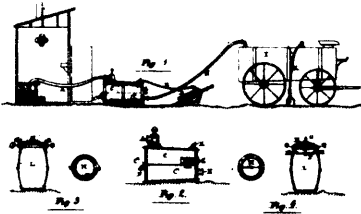
8466 Healey's Improvement in Spring Beds.



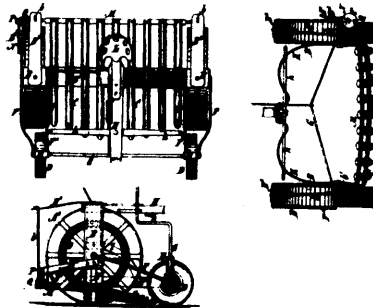
8467 Smith and Course's Apparatus for Trimming Bevel and other Gearing.



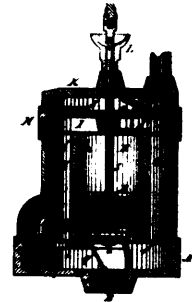
8468 Waring and Allison's Mechanism for Opening and Closing Doors of Hatchways.



8469 Vouté's Odorless Excavating Apparatus.



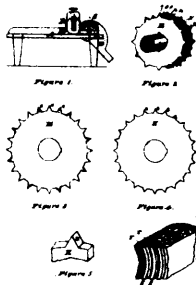
8471 Bailey's Improvements in Potato-Diggers.



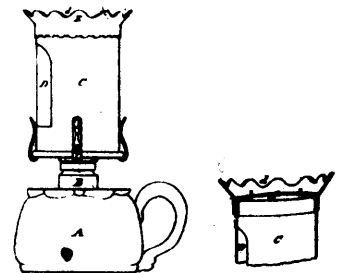
8472 Wilson and Lynn's Improvements in Pumps.



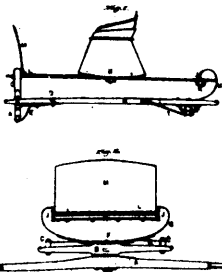
8473 Barlow, Terrill and Taylor's Machine for Holding Wash Tubs.



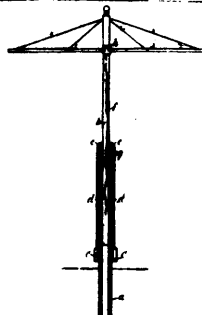
8474 Nickerson's Improvements on the Granulation of Ligneous Substances.



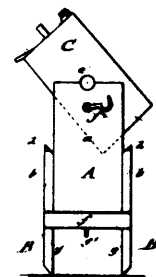
8475 Howard's Improvements on Lamp Heaters.



8476 Phillips' Improvements on Buck-Board Waggon.



8477 Yemen's Improvements on Clothes Dryers.



8478 Graves' Improvement on Cans for Liquids.