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The Canadian Patent Office

RECORD

Vol. XII.—No. 10.

OCTOBER, 1884.

{ Price in Canada \$2.00 per An.
 { United States - \$2.50 "

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INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

No. 20,089. Electric Commutator. (Commutateur Electrique.)

Elihu Thomson, Lynn, Mass., U. S., 1st September, 1884; 5 years.
Claim.—1st. The combination, with an electric switch or commutator, of a magnet placed in proximity to the switch contacts or to surfaces between which a spark or flash is liable to occur, substantially as and for the purpose set forth. 2nd. The combination, with the commutator for a dynamo-electric machine, of a magnet placed in proximity to the commutator-cylinder at a point immediately succeeding the commutator-brush, as and for the purpose set forth. 3rd. The combination, with a dynamo-electric machine commutator, of an accessory commutator, set so that the spaces between its segments will pass its brushes immediately after the corresponding spaces of the main commutator passes its brushes, and magnets placed in proximity to the accessory commutator, as and for the purpose described. 4th. The combination, with the contacts points or surfaces in an electric switch or commutator, of suitable means for producing a magnetic field in proximity thereto, which field shall act, by its attractive or repulsive influence, to diffuse or displace any electric arc or current that may pass, or tend to pass, at the instant of break or commutation.

No. 20,090. Needle Threader for Sewing Machines. (Enfileur d'Aiguille pour Machines à Coudre.)

Edwin N. McPherron, Greenfield, Ill., U. S., 1st September, 1884; 5 years.
Claim.—A needle threader for sewing machines in which are combined a thread guide *b*, pivoted by an arm to the head of the machine and provided with a slot *c*, which is adapted, when in position for threading, to be closed by the grooved side of the needle, a tongue *h*, projecting from the lower edge of the orifice of the thread guide, adapted to enter the lower part of the eye of the needle, for the purpose of preventing the end of the thread when presented to the entrance of the eye from catching upon the lower edge thereof, and the curved plate *f* provided with a bevelled needle rest or stud *g*, arranged and operating as and for the purpose set forth.

No. 20,091. Appliance for Filtering Water, &c. (Appareil pour Filtrer l'Eau, &c.)

John P. Jackson, Liverpool, Eng., 1st September, 1884; 5 years.
Claim.—1st. The chamber or funnel D, having a small opening D₁ at its lower end, and the rim or open diaphragm D₂, substantially as described and for the purpose specified. 2nd. The chamber B with solid walls above, and open or perforated below, substantially as and for the purpose set forth and shown. 3rd. The pocket filter consisting essentially of the chamber B perforated or open at B₂, which is charred or as with asbestos cloth or equivalent, and filled with granular material, and the like, the latter being retained in place by the perforated plate E, and removable cup chamber A, substantially as set forth and shown. 4th. The filtering chamber G composed of ends or discs H, of a circular or polygonal shape, connected by rods G₁ and covered with asbestos cloth or equivalent, substantially as described and shown. 5th. The conical chamber D suspended inside the chamber B, having a small opening at its point, and an inwardly project-

ing rim or open diaphragm D₂ a little away from the point, in combination with the tapered end formed at the bottom of the chamber B, having a groove B cut around it, to receive a cord or its equivalent for holding a cloth of asbestos or other suitable material, arranged substantially as and for the purpose specified.

No. 20,092. Boiler Furnace.

(Fournneau de Chaudière.)

William P. Hall, Piqua, Ohio, U. S., 1st September, 1884; 5 years.

Claim.—The combination, in a boiler-furnace, of the parallel flues E and I, the dividing-partition K and the passages L, M and N, substantially as and for the purposes specified.

No. 20,093. Furnace. (Fournneau.)

Victor Colliau, Detroit, Mich., U. S., 1st September, 1884; 5 years.

Claim.—A blast-furnace having an outer metallic lining E, an inner metallic casing D above the tuyeres, the section C below the tuyeres being of fire brick, as described, to prevent damage to the portion of the furnace where there is no circulation of air, an air-inlet G into which air passes under pressure, and a spiral diaphragm between the casings extending from said air-inlet to the tuyeres, for compelling the air to circulate around the section above the tuyeres, and gradually descend to the same, whereby the air is gradually heated before entering the tuyeres, substantially as described.

No. 20,094. Rag Engine for Paper Making.

(Pâte à Cylindre pour la Fabrication du Papier.)

John Hoyt, Manchester, N. H., U. S., 1st September, 1884; 5 years.

Claim.—1st. The improvement, in beating rags to pulp, in a rag engine having a beater roll and bed plate knives, consisting in circulating the fibrous material and liquid in vertical planes, drawing the same between the knives at the bottom of the vat, carrying it around and over the roll and delivering it into the upper section of the vat, substantially as described. 2nd. A rag engine for paper-making comprising the vat, the beater roll mounted on a horizontal shaft, and the horizontal partition dividing the body of the vat into an upper and a lower section or passage, the fibrous material and liquid being carried from the lower section between the knives, and delivered over the top of the beater roll into the upper section or passage, substantially as described. 3rd. The combination, of the bed plate knives, the flanged shoe and the wedges, substantially as described. 4th. The combination, with the beater roll, of the adjustable bed plate knives arranged radially with respect to said roll, and the means for adjusting the position of said knives, substantially as described.

No. 20,095. Type Writer. (Machine à Copier.)

Willard H. Gilman, Boston, Mass., U. S., 1st September, 1884; 5 years.

Claim.—1st. In a type writer, the combination of the following elements, viz: a rotary type wheel, movable support or lever supporting said wheel, whereby the latter may be depressed to make an impression of one of its characters on a sheet of paper held under it, means, substantially as described, whereby the operator can cause the rotation of the type wheel in either direction and to any desired extent, a paper holding carriage and automatic means for feeding the same after each depression of the type wheel, as set forth. 2nd. The combination of the rotary type writer, the movable support for the same, a spring adapted to rotate the type wheel in one direction, a movable device or handle adapted to slide on a guide on the supporting base, a flexible connection or cord between said handle and the type wheel adapted to rotate the latter against the orifice of its spring, and a series of orifices or indications in the supporting base, where the operator is enabled to bring any desired character on the type wheel into position for printing, as set forth. 3rd. The combination of the rotary type wheel, the movable support therefor adapted to be depressed by the operator, means for automatically raising said

support and wheel, the paper-supporting carriage and mechanism operated by the upward movement of the type wheel support to move said carriage laterally, as set forth. 4th. The combination of the rotary type wheel, the movable support therefor adapted to be depressed by the operator, means for automatically raising said support and wheel, the paper-supporting carriage, movable on guides on the supporting base provided with a rack *k*, the pinion *l* supported by said base, and the dog *n* pivoted to the type wheel support and adapted to engage with said pinion, as set forth. 5th. In a type writer, the combination of the carriage *h*, mechanism, substantially as described, for feeding said carriage laterally, the paper holding slide *m* movable on said carriage at right angles to the direction of movement of the latter and the spring *n* and notched plate *o*, whereby the operator is guided in moving said slide, as set forth. 6th. The combination of the carriage *h* having the rack *k*, the pinion *l* and the dog *n* provided with the arm *k* and knob *p*, whereby said dog may be disengaged from the pinion, as set forth. 7th. The combination of the carriage *h* having the rack *k*, the pinion *l*, the dogs *n* and *a*, the latter having the arm *h*, and the former, the arm *k* bearing on the arm *h*, as set forth. 8th. The combination of the type wheel, the movable support therefor adapted to be depressed by the operator, means for automatically raising said support, the ink ribbon reels and devices, substantially as described, operated by the upward movement of the type wheel support, for rotating one of said reels step by step and moving the ribbon longitudinally, as set forth. 9th. The combination of the type wheel, the movable support therefor adapted to be depressed by the operator, means for automatically raising said support, the ink ribbon reels *A A* provided respectively with ratchets *C, C*, having teeth relatively arranged, as described, the dogs *D, D*, pivoted to the type wheel support and adapted to engage automatically with the ratchets *C, C*, when said support rises, and means, substantially as described, whereby either of said dogs is made impetive and the other at the same time operative, as set forth. 10th. The combination of the automatically raised type wheel support *c*, the dogs *D, D* pivoted to said support, the ink ribbon reels having ratchets engaged by said dogs, and the bar *E* adapted to slide in guides on the support *c*, and provided with studs *F, F*, adapted to act on the dogs *D, D*, and make the one operative and the other at the same time operative, as set forth. 11th. The combination, with the ink ribbon reels, of the shouldered and threaded rods supporting said reels, and the socketed standards supporting said rods, whereby the ink ribbon reels are adapted to be laterally adjusted, as set forth. 12th. The combination of the rotary type wheel, the pivoted lever *c* supporting the type wheel, the spring *g*, whereby the lever *c* and the type wheel are normally raised, and the paper-supporting carriage under the type wheel, as set forth.

No. 20,096. Boltin Apparatus. (*Blutoir*.)

The Knickerbocker Company, (assignee of Orville M. Morse,) Jackson, Mich., U. S., 1st September, 1884; 5 years.

Claim.—1st. The combination, with an inclined screen of an air trunk and fan, whereby an air current is directed upwardly through the screen, an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, and means whereby the material is caused to move laterally across the screen, substantially as set forth. 2nd. The combination, with a screen having the proper pitch or inclination to cause the material to flow over it by gravity, an air trunk and fan whereby an air current is directed upwardly through the screen, and an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, substantially as set forth. 3rd. The combination, with an inclined screen, of an elevating mechanism facing the screen and an air trunk and fan, whereby an air current is caused to pass upwardly through the screen, substantially as set forth. 4th. The combination, with an inclined screen, of an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, means whereby a lateral motion across the screen is imparted to the material deflecting devices, whereby the movement of the material across the screen can be regulated, and an air trunk and fan, whereby a current of air is caused to pass upwardly through the screen, substantially as set forth. 5th. The combination, with an inclined screen and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, of a preliminary bolting apparatus composed of an inclined screen and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, substantially as set forth. 6th. The combination, with an inclined screen composed of sections of different degrees of fineness arranged side by side, of an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, mechanism whereby an air current is directed upwardly through the coarse portion of the screen, and means whereby the material is caused to move laterally across the screen from the fine to the coarse sections, substantially as set forth. 7th. The combination, with an inclined screen, of an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, a casing enclosing the elevator and screen, and an air trunk arranged between the elevator and screen, and adapted to direct an air current upwardly through the screen, substantially as set forth. 8th. The combination, with an inclined screen, of an elevator, whereby the material escaping from its lower end of the screen is returned to its upper end, a casing enclosing the elevator and screen, an air trunk arranged between the elevator and screen, and flexible strips or curtains *k, k*, attached to the air trunk and resting on the screen or casing, substantially as set forth. 9th. The combination, with an inclined screen, of an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, a casing enclosing the elevator and screen, an air trunk arranged between the elevator and screen, and adjustable deflecting boards attached to the upper end of the air trunk, substantially as set forth.

No. 20,097. Ice Creeper. (*Crampon à Glace*.)

Charles F. West, Philadelphia, Penn., U. S., 2nd September, 1884; 5 years.

Claim.—1st. An ice creeper embodying a shank, clips and spurs, formed of a continuous piece of wire, substantially as and for the purpose set forth. 2nd. An improved ice creeper consisting of a shank, clips at the sides thereof, and spurs projecting from the clips formed of a continuous piece of wire, substantially as and for the purpose set forth. 3rd. The shank *A*, clips *B* and spurs *C*, formed of the parts *a, b, c, d, e, f*, ice creeper of each other, substantially as described. 4th. An ice creeper formed of a continuous piece of wire having a shank, clips and spurs, said shank consisting of two elastic arms *a, a*, which are united by a bend at the rear of the shank, substantially as and for the purpose set forth. 5th. An ice creeper formed of wire having a tooth at the rear thereof, substantially as and for the purpose set forth.

No. 20,098. Device for Trimming the Soles of Boots and Shoes. (*Appareil pour Parachever les Semelles des Chaussures*.)

James Welsh, Plymouth, Penn., U. S., 2nd September, 1884; 5 years.

Claim.—1st. In a device for trimming boot or shoe soles, the combination, with the cutter *D* composed of the top plate *d* and the cutting side plate *d*, the lower cutting edge of which has a contour similar to that of a boot or shoe sole, of the actuating lever *B* carrying said cutter and pivoted to a proper fulcrum, at *b*, in such manner as to swing the cutter and make it act on the sole of a boot or shoe, held in position by any suitable support, substantially as set forth. 2nd. The combination, in a device for trimming boot or shoe soles, with the cutter *D* composed of top plate *d* and cutting side plate *d*, and the pegging and points *E, E*, depending from the plate *d* and arranged concentrically within the plate *d*, on a line having a contour similar to that of a boot or shoe sole, of the actuating lever *B*, carrying said cutter and pivoted to a proper fulcrum, at *b*, in such manner as to swing the cutter and make it act on the sole of a boot or shoe, held in position by any suitable support, substantially as specified. 3rd. In a device for trimming boot or shoe soles, the combination, with the pegging awl points *E, E*, and cutter *D*, composed of top plate *d* and side cutting plate *d*, of the actuating lever *B*, plate *F* and screws *f, f*, as set forth.

No. 20,099. Twist Drill. (*Forst Tors*.)

George H. Burroughs, Princeton, N. J., U. S., 2nd September, 1884; 5 years.

Claim.—1st. A drill having a spirally-curved cutting edge adapted to make a draw or shear and shaving cut, substantially in the manner and for the purpose set forth. 2nd. A drill having a curved cutting edge lying in, or nearly in a plane, at right angles to the axis of the drill, so as to give the latter a draw or shear and shaving cut, as set forth. 3rd. A drill having longitudinal recesses at the inner sides of the grooves, forming ledges or angles, adapted to guide in sharpening the drill, as set forth.

No. 20,100. Valve for Enginery and Vessels.

(*Souape pour Machinerie et Vaisseaux*.)

John E. Jerrold and Christian L. Burgermaster, Allegheny, Penn., U. S., 2nd September, 1884; 5 years.

Claim.—The combination, with the three-part casing *C, D, E*, the former having the stem *N* provided with the valve *B* and spring *M*, of the screw-threaded stem *I* engaging the screw-threaded portion *K* and passing through the parts *D, F* and resting on the top of the stem *N*, and the wheel *H* and packing-piece *G*, substantially as shown and described and for the purposes set forth.

No. 20,101. Baling Press. (*Presse d'Emballage*.)

David W. Sealey, Albany (assignee of Alexander Buckman, School-ack), N. Y., U. S., 2nd September, 1884; 5 years.

Claim.—1st. In a baling press, the pressing chamber *A* provided with adjustable walls *A*, moveable as at *a*, at their forward ends, to a contiguous stationary part of the press and arranged in relation to the baling chamber *B*, as herein described, for the purpose of completing the compression of the material, before the bale is passed into the baling chamber, as herein specified. 2nd. In a baling press, the baling chamber *B* provided at two of its oppositely located vertical sides, with a single opening *B* and guiding-strips *b*, for the purpose of facilitating the operation of tying off the bale before it is removed from the press, as herein specified. 3rd. In a baling press, the combination, with the pressing chamber *A*, of the baling chamber *B*, and ranged in relation to the pressing chamber, as herein described, and provided at each of its vertical sides, with a single opening *B*, and top and bottom guiding strips *b*, as and for the purpose herein specified. 4th. In a baling press, the combination, with a baling chamber *B* provided with a single opening *B* in two of its oppositely located vertical sides, of the guiding strips *b* and adjusting screws *C*, adapted to press against the middle portions of said guiding strips, as and for the purpose herein specified.

No. 20,102. Flour Bolt. (*Blutoir*.)

The Knickerbocker Company (assignee of Orville M. Morse), Jackson, Mich., U. S., 2nd September, 1884; 5 years.

Claim.—1st. In a separator, the combination of a sieve or screen having the proper pitch or inclination, to cause the material to flow over it by gravity, and having its mesh increasing in coarseness from its upper end to its lower end, to increase the separating capacity of the screen as the velocity of the material increases, and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, substantially as set forth. 2nd. In a separator, the combination of a sieve or screen having the proper pitch or inclination, to cause the material to flow over it by gravity, and

composed of sections of different degrees of fineness arranged side by side, each section having its mesh increasing in coarseness from its upper to its lower end, and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, substantially as set forth. 3rd. The combination, with an inclined screen, of a series of belt elevators arranged side by side, and a belt supporting drum having annular enlargements or projecting rings arranged in the centre line of each belt, whereby such elevator is centred and retained in its proper position, substantially as set forth. 4th. The combination, with an endless elevator belt or apron, and the drum or pulleys around which it runs, of inclined scrapers adapted to move the material toward the side or end of the drum or pulley, substantially as set forth. 5th. The combination, with an endless elevator belt or apron, and the drum or pulley around which it runs, of scrapers bearing against said drum or pulley and inclined from the middle toward both ends thereof, substantially as set forth. 6th. The combination, with a separating screen, of a cleaner composed of a movable carrier, brushes or wipers loosely attached to said carrier, and a spring, whereby each brush or wiper is held in contact with the screen, substantially as set forth. 7th. The combination, with a separating screen, of a cleaner composed of a movable frame P, brushes or wipers p, provided with pins p^t and springs q secured to the frame P, and bearing against the pins p^t, substantially as set forth. 8th. The combination, with an inclined screen and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, of deflecting boards arranged more closely together toward the tail end of the machine, whereby the movement of the material toward the tail of the machine becomes more retarded in the same measure as the material becomes less in quantity, substantially as set forth. 9th. The combination, with the stationary frame A and inclined screen B, of a knocker N, a spring n secured at its ends to the stationary frame, and a set screen nⁱ adjustably secured in said spring, and bearing against the frame of the screen, substantially as set forth.

No. 20,103. Machine for the Manufacture of Nuts and Washers. (*Machine pour la Fabrication des Ecrus et Rondelles.*)

John Ashton, Philadelphia, Penn., U. S., 2nd September, 1884; 5 years.

Claim.—1st. The die A comprising the outer fixed die block w, central fixed punch v, intermediate ejector and base block a, the whole confined to the movable frame by a chuck H, as described. 2nd. The die A comprising the chuck H, outer fixed block w, block a, intermediate ejector and centre punch v having a shoulder bearing against the block a, as set forth. 3rd. The counter die B comprising the fixed central tube x and outer sliding block z, both confined to the frame by a chuck J, as set forth. 4th. The combination of the counter die having a sliding block n, the ejector pins f, the lever M, the yoke N and the adjustable rods g, whereby the movement of the yoke is transmitted to the levers, as set forth. 5th. The combination, in a counter die, of the central fixed portion x and the outer sliding block z, and acting upon by a spring p, as set forth. 6th. The combination of the central fixed portion x of the counter die, the outer sliding block z and the gauge pin t, free to slide in an opening in said block z, and acted upon by a spring p, as set forth. 7th. The combination of the die and counter die with the pivoted arm n, carrying a wiper p, and with means for vibrating the arm as the die is reciprocated, as set forth. 8th. The combination of the die and counter die, the pivoted arm n carrying a wiper p, and the reciprocating frame F having a cam P acting on said arm n, as set forth. 9th. The frame D having on each side one or more tubular projections v, for the reception of bracing and retaining bolts, all substantially as set forth.

No. 20,104. Machine for Removing Snow off Railway Tracks and Roads. (*Machine pour Enlever la Neige des Voies de Chemins de Fer et des Routes.*)

William Pearson, Rapid, Man., 2nd September, 1884; 5 years.

Claim.—1st. The combination of dredging wheel A, with clearer K and revolving shovels N, as substantially as for the purpose hereinbefore set forth. 2nd. The combination of dredging wheel A, with cutting sheath o, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of sled (Figs. 4 and 5) with machine, substantially as and for the purpose hereinbefore set forth. 4th. The combination of spring and joint to clearer K, substantially as and for the purpose hereinbefore set forth. 4th. The combination of spring and joint to clearer K, substantially as and for the purpose hereinbefore set forth.

No. 20,105. Levelling Rod and Out Tape.

(*Mire Graduée et Ruban-Mesure.*)

Henry F. Bean, Jackson, Mich., U. S., 2nd September, 1884; 5 years.

Claim.—1st. The rod A in combination with the endless tape B, and target H adjustably secured to said tape and rod, substantially as and for the purpose specified. 2nd. The combination, with the rod A and a hook secured to said rod, of the graduated out-tape J having two rings M, M, substantially as and for the purpose specified. 3rd. The combination, with the rod A and travelling endless tape B, of the clamp F, substantially as and for the purpose specified. 4th. In a levelling-rod, the combination, with the rod A and the endless tape B, of the pulley C and the adjustable pulley D, substantially as and for the purpose specified. 5th. The combination, with the rod A and endless tape B, of the target H, the loop b secured to the target frame I and the clamping screws d, h, substantially as and for the purpose specified. 6th. The combination, with the rod A and the endless tape B, of the adjustable target H having loop b and clamping screws d, h, rings M, M, substantially as and for the purpose specified. 7th. The rod A in combination with the adjustable rod B, provided with a sliding rod C, substantially as and for the purposes set forth. 8th. The combination, with the rod B and sliding rod C, of the right-angle

bars P, substantially as and for the purposes described. 9th. The combination of the rod B, sliding rod C and right-angle bars P, when constructed, arranged and operating substantially in the manner and for the purposes specified.

No. 20,106. Apparatus for Removing Incrustations, Sediment or Deposits of any Kind from Water Pipes.

(*Appareil pour Enlever les Incrustations, le Sédiment ou les Dépôts de tout genre dans les Tuyaux d'Eau.*)

Edward H. Keating, Halifax, N. S., 2nd September, 1884; 5 years.

Claim.—1st. The contrivance q r p q r consisting of the part p, which is a portion of a pipe or main cut out therefrom or not, as circumstances may require, and secured in its position by the attachments q, u, r, v, p, y, t, substantially as and for the purpose hereinbefore set forth. 2nd. The combination pipe scraping machinery or apparatus capable of being propelled, operated or utilized by means of the gravity force, power or pressure of the water obtainable within a pipe or main, consisting of a centre rod c e s d or m n, the spring arms a and the plows b, any of which may be readily coupled on or uncoupled, the piston or pistons f, g, h, and the auxiliary springs j and i, either of which may be attached or detached at pleasure, constructed substantially as shown and described and for the purposes hereinbefore set forth.

No. 20,107. Cigar Bunching Machine.

(*Machine à Lier les Cigares.*)

Thomas E. Roberts, Detroit, Mich., U. S., 2nd September, 1884; 5 years.

Claim.—In a cigar bunching machine, a bunching table concave upon its upper face in vertical cross-section, in combination with a straight horizontal travelling bunching roller, substantially as described. 2nd. In a cigar bunching machine a bunching table concave upon its upper face in vertical cross-section, and means, substantially as described, for vertically adjusting said table, in combination with a horizontally travelling bunching roller, substantially as herein set forth. 3rd. The combination, in a cigar bunching machine, of a frame provided with horizontal ways for receiving a horizontally travelling bunching roller, with a bunching table and an adjustable bunching cloth, substantially as and for the purposes specified. 4th. In a cigar bunching machine, a horizontal stationary bunching table in combination with a bunching roller and cloth, such bunching roller being provided with means for horizontally reciprocating it, substantially as specified. 5th. In combination with the downwardly inclined end of the bunching table, the guard plates or cheeks forming a pocket or recess in which the bunching cloth is depressed for receiving the filter, substantially as and for the purposes described.

No. 20,108. Grain Granulator.

(*Concasneur à Grain.*)

George Malcolm, Tavistock, Ont., 2nd September, 1884; 5 years.

Claim.—The conical case D provided with teeth p^t and openings o¹, o², in combination with the conical cylinder C provided with teeth a¹, and shaft A operated by suitable operating mechanism, substantially as shown and described and for the purpose specified.

No. 20,109. Balanced Slide Valve.

(*Tiroir de Vapeur Equilibré.*)

James Bewcher, Kansas, Mo., U. S., 3rd September 1884; 5 years.

Claim.—The combination, with a steam engine slide-valve and its inclosing steam chest, provided with a vertical packing chamber and plunger near one end, an equalizing bar pivoted mid-way of its length to the back of the valve, and having a vertically vibrating link journalled, as shown, to one extremity, for connection with the balancing plunger, the opposite end being journalled to, and connected by a similar link to the bottom of the chest, the described vibrating links, each constructed of substantially identical dimensions and attached to the parts described, as shown, so that the central pivot of the equalizing bar may reciprocate in a line parallel to the valve-face, and the plunger be devoid of motion, substantially as described and shown.

No. 20,110. Featherbone. (*Tige de Plume.*)

Edward K. Warren, Three Oaks, Mich., U. S., 3rd September, 1884; 15 years.

Claim.—1st. As a new article of manufacture, the featherbone a composed of the enamel or quill, and enamel parts of feather stems bound together, substantially as specified. 2nd. A stiffener or rib formed of quills or quill splints, stripped of the feathers and bound together, as shown and described. 3rd. The elastic filling composed of quills or quill splints, or both, arranged to overlap and break joint with one another, and bound together to form an elastic rod, essentially as and for the purpose described.

No. 20,111. Low Water Alarm Gauge.

(*Indicateur à Sonnerie du Niveau d'Eau.*)

Alfred Weldon, Hamilton, Ont., 3rd September, 1884; 5 years.

Claim.—1st. The combination of the float G, the valve e, fulcrum B, lever c, the two saddles D and rod F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the two component parts of the said float, the recess on the top of the float, with the metal piece L held in its place by the strap K and fastened to the lower half of the said float, below the water line, so that the steam does not come in contact with any joints of the float, they being all below the water line, substantially as and for the purpose hereinbefore set forth.

No. 20,112. Straw Burning Furnace.*(Fourneau Consumant la Paille.)*

John Abell, Woodbridge, Ont., 3rd September, 1884; 5 years.

Claim.—1st. The perforated air chamber I J located on the bottom of the leg C, between the furnaces A and E, substantially as and for the purpose specified. 2nd. A straw furnace C provided with a feed-scoop G, in combination with a hinged door H, arranged substantially as and for the purpose specified. 3rd. A straw furnace C, provided with a damper L and fingers T, in combination with a corrugated plate f, substantially as and for the purpose specified.

No. 20,113. Dish and other Vessels.*(Plat et autres Ustensiles.)*

Thomas B. Russell, Fort Valley, Ga., U. S., 3rd September, 1884; 5 years.

Claim.—1st. As an improved article of manufacture, a vessel comprising a body having a circular rim formed with an outwardly projecting flange, in which is provided a recess or notch, and a cover provided with separate inwardly extending corresponding flanges, one of which corresponds to the recess or notch, as set forth. 2nd. The combination, with the body of the vessel having a circumferential rim flange projecting outwardly and formed with a single notch or recess, of a cover having two diametrically opposite flanges or catches, projecting inwardly from its underside, the said cover catches being adapted to be engaged under the body flange and to turn thereon, while one of the cover flanges or catches is of a length corresponding to the notch in the body flange, as set forth. 3rd. The combination, with the body having the circular rim flange projecting outwardly and provided with a notch or recess and also having the horizontal circumferential supporting flange under the said notched flange, of the cover having the diametrically opposite corresponding flanges, one of which is formed of a length corresponding to the length of the notch, the cover being held in position by the notched flange, and supported upon the horizontal flange, as set forth.

No. 20,114. Buckle. (Boucle.)

Warren H. Boles, Fort Plain, N. Y., U. S., 3rd September, 1884; 5 years.

Claim.—1st. A buckle provided with a frame having fastening-eyes, a tongue-bail also having fastening-eyes, a screw-bolt passed through said eyes, and a tube to be secured within a loop of the article to which the buckle is to be applied, through which tube the screw-bolt also passes, substantially as shown and described. 2nd. The frame A having the eyes j, and bail B having eyes k and tongue m, combined with the screw bolt i and tube h, substantially as shown and described. 3rd. The frame A having the eyes j and stay bar f, combined with the pivotal bail B having the eyes k and cross-bar l, provided with tongue or lug m, constructed and arranged substantially as described, to admit of the passage of the brace through the buckle, and the securing thereof in said buckle in a straight line. 4th. A buckle composed of a frame having end and side loops, a tongue stay-bar, a tongue formed upon a pivoted bail, and a screw-bolt and tube to secure the frame and bail in position, substantially as shown and described. 5th. The combination, with the bail having the tongue m, the frame having the cross-bars f and n, and the bolt i for securing the bail and frame together, to permit the passage and securing of the trace in a straight line of the loop e at the rear end, and standing up from the plane of the frame and of substantially the width thereof, as shown and described, to permit the running of the hold-back or long side strap, in a straight or right line, through the buckle from the breeching ring to the neck yoke, as set forth. 6th. The combination, with the buckle and the loop e at the rear end of its frame standing up therefrom and of substantially the width thereof of the hold-back strap, substantially as shown and described.

No. 20,115. Faucet. (Canule.)

Herman H. Orbits and Michael Willet, Detroit, Mich., U. S., 3rd September, 1884; 5 years.

Claim.—1st. In a faucet and in combination with the valve shell, a valve stem operating through a removable plug engaging with the valve shell, such plug being provided with a coupling, by means of which the plug may be disengaged from the valve shell, substantially as described. 2nd. In a faucet, a removable plug F carrying a valve stem H, in combination with the coupling J, substantially as set forth. 3rd. In a faucet, the combination, with the valve shell A provided with a diaphragm D, plug F, stuffing box G, valve stem H, valve I and coupling J, substantially as and for the purposes described.

No. 20,116. Fastening for Boots, Gloves, &c.*(Fermeoir pour Bottines, Gants, &c.)*

Thomas J. Johnston Toronto, Ont., 3rd September, 1884; 5 years.

Claim.—As an improved fastening, a rod C, having ratchet-shaped notches a cut in it, in combination with the button D having an eye or hole through its shank, arranged substantially as and for the purpose specified.

No. 20,117. Middlings Purifier.*(Epurateur des Gruaux.)*

The Knickerbocker Company, (assignee of Orville M. Morse,) Jackson, Mich., U. S., 3rd September, 1884; 5 years.

Claim.—1st. In a middlings purifier, the combination, with an inclined screen composed of sections having different degrees of fineness, arranged side by side, an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, means whereby the material is caused to move laterally across the screen from the fine to the coarse sections, and an air trunk and fan, whereby an air current is directed upwardly through the screen,

substantially as set forth. 2nd. In a middlings purifier, the combination, with an inclined screen, an air trunk and fan, whereby an air current is directed upwardly through the screen, an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, means whereby a lateral motion across the screen is imparted to the material, and a cleaner operating to keep the sieve open, substantially as set forth. 3rd. In a middlings purifier, the combination, with an inclined screen composed of sections of different degrees of fineness arranged side by side, an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, an air trunk and fan, whereby air currents are directed upwardly through the screen, and means whereby the force of the air currents, which pass through the different sections of the screen, can be regulated, substantially as set forth. 4th. In a middlings purifier, the combination, with an inclined screen composed of sections of different degrees of fineness arranged side by side, an elevator whereby the material escaping from the lower end of the screen is returned to its upper end, a fan whereby air currents are caused to pass upwardly through the screen, and a divided air trunk having adjusting devices for regulating the force of the air currents through the different sections of the screen, substantially as set forth.

No. 20,118. Winding Stem for Watches.*(Remontoir pour Montres.)*

The Brooklyn Watch Case Company, (assignee of James J. Wood,) Brooklyn, N. Y., U. S., 3rd September, 1884; 5 years.

Claim.—1st. In a stem-winding mechanism for watches, the combination of a sliding and rotating stem and a sleeve seated within the pendant, and formed with a grooved, enlarged or shouldered portion for retaining it within the pendant, and with a portion made springy or resilient for clutching the stem and holding it in any desired position, substantially as described. 2nd. In a stem winding mechanism for watches, the combination of a pendant, a winding stem passing therethrough, a friction sleeve within the pendant having a grooved, enlarged or shouldered head, a pin passing through the side of the pendant and taking therein for securing the friction sleeve within the pendant, whereby the stem may be held by the sleeve in or out of engagement with the winding gear of a movement, substantially as described. 3rd. In a stem-winding attachment for watches, the combination of the winding stem having a shoulder at its inner end, and tapering thence to its outer end, a crown-piece attached thereto, and a friction sleeve thereon, having a groove in which takes a pin or screw passing through the pendant, substantially as described.

No. 20,119. Button and Button-Fastener.*(Bouton et Queue de Bouton.)*

The Patent Button Company, Waterbury, Ct., (assignee of Thomas Porter, Montclair, N. J.) U. S., 3rd September, 1884; 5 years.

Claim.—1st. The combination of a headed fastening device provided with two or more sharpened prongs, consisting of vertical sections of a hollow cylinder, with curved cross sections, and a solid faced button or rivet head with an upsetting device within the shell of the same, as and for the purpose described. 2nd. In combination, a solid faced button or rivet head having an interior upsetting device, with a metal fastener having two or more sharpened prongs consisting of vertical sections of a hollow cylinder with curved cross sections, a head and a space or throat d, as and for the purpose described.

No. 20,120. Flexible Abrasive and Polishing Disk. (Disque Flexible pour Frotter et Polir.)

John W. Smith, Newport, R. I., U. S., 3rd September, 1884; 5 years.

Claim.—1st. A disk of paper, cloth, leather, rubber or other flexible material having on one side, at or near the margin, an annular surface coated with an abrasive and polishing substance, substantially as provided. 2nd. A disk of paper, cloth, leather, rubber or other flexible material, having cemented to one side a ring of paper, cloth, leather, rubber or other flexible material, provided with an abrasive and polishing substance, all substantially as set forth.

No. 20,121. Rotary Motor and Pump.*(Moteur et Pompe Rotatoires.)*

George Lenhardt, Detroit, Mich., U. S., 3rd September, 1884; 5 years.

Claim.—1st. The combination of the revolving cylinder I, piston J, grooved track N and rod c, provided with offset e and a friction roller travelling in the grooved track, whereby the pressure is exerted in a straight line, substantially as described. 2nd. In a combined rotary pump and motor provided with reciprocating pistons J, and track N having a grooved channel O, the combination of the piston rods detachably connected at right angles thereto and carrying an anti-friction roller b constructed to enter said channel O, all combined, arranged and operating as specified. 3rd. In a rotary pump, the combination, with the cylinder I, piston J and suitable means for the reciprocating said piston, of the guide S working in an eye in the projection s, whereby the piston J is guided in its movement, substantially as described. 4th. In a combined rotary pump and motor provided with reciprocating pistons, as J, the rigid track M having a channel O, and the piston rods c, each having an offset e and carrying a friction roller adapted to travel in said channel, and constructed to be detachably connected with said pistons, substantially as and for the purposes set forth. 5th. The combination, with suitable cylinders J, a conically-apertured hub H and the fixed conical spindle A, of the shell or casing AT provided with bearings and suitable outlet pipe, substantially as shown and described. 6th. In a motor and in combination with the hollow conical spindle A and a conically-apertured hub H rotated thereon, and cylinders secured to said hub and provided with pistons and piston-rods, substantially as described,

a rigid track eccentric to the axis of the spindle, substantially as and for the purpose specified. 7th. In a motor constructed, substantially as described, in combination with the cylinders and eccentric track thereof, the piston-rods with their outer ends curved to the rear of the line of travel, and carrying in such curved ends traction or friction wheels, substantially as set forth and for the purpose described. 8th. The combination, with cylinders J, conically apertured hub H and the stationary conical spindle A, formed with diaphragm C and suitable apertures F and G, of the fixed shell or casing A, bearings H and track N, substantially as set forth. 9th. In a motor consisting essentially of three or more cylinders secured equidistant from each other on a hub, adapted to rotate around a hollow spindle, the casing A adapted to contain said hub and cylinders and to form a support for said hollow spindle, and the circular track N secured within said casing, substantially as specified.

No. 20,122. Composition for Toothache.

(Composition pour le Mal de Dent.)

Robert R. Mills, Winnipeg, Man., 3rd September, 1884; 5 years.

Claim.—A composition of matter consisting of Henbane oil, of cloves and oil of Neroli, to be used in the proportion and manner specified.

No. 20,123. Manufacture of Boots and Shoes. (Fabrication des Chaussures.)

Elisha Stout, Lambertville, N.J., U.S., 3rd September, 1884; 5 years.

Claim.—1st. A boot or shoe composed of a sheet of duck or like fabric having on its opposite sides films or sheets of rubber pressed into the fabric, and a lining of felt or similar heavy fabric cemented to the interior film or sheet of rubber, substantially as described. 2nd. The method, herein-described of making a fabric for the manufacture of boots and shoes, which consists in applying a film or coating of rubber to each surface of a piece of textile fabric, pressing the rubber into the interstices of the fabric by the action of revolving rollers, and finally cementing a sheet of felt or like material to one of the films or coatings of rubber, substantially as set forth.

No. 20,124. Door Stop. (Arrête-Porte)

John H. Runyan, Flint, Mich., U.S., 3rd September, 1884; 5 years.

Claim.—In a door stop and in combination with the bracket and eccentrically journalled wheels, constructed substantially as and for the purpose set forth.

No. 20,125. Spring Motor. (Moteur à Ressort.)

Thomas K. Austin, New York, N.Y., U.S., 3rd September, 1884; 5 years.

Claim.—1st. In a motor, the combination of shaft C, the ratchet wheels A, D and pawls E, F with springs, the spring actuated releasing pins and the lifters, substantially as shown. 2nd. In a spring motor, the combination of the ratchet wheels A, D, spring-actuated pins I, which are released by the uncoiling of the driving springs, and the tappet H provided with a hook or catch upon its end for holding the ratchet wheel A, while the pawl E is out of contact with it, substantially as set forth. 3rd. The combination of the shaft C, the ratchet wheels A, D and pawls E, F, with the springs, the releasing pins, the tappets, the lifters and the arms for lifting the tappets so as to release the pins, substantially as described.

No. 20,126. Respirator. (Inhalateur.)

David Genese, Baltimore, Md., U.S., 3rd September, 1884; 5 years.

Claim.—1st. An inhaler or respirator consisting of an inner perforated plate having a flexible border, flange or rim and an outer perforated plate fitted against said inner plate, to form a space or chamber between the two plates for the reception of an absorbent packing, substantially as described. 2nd. An inhaler or respirator consisting of inner and outer perforated plates or sections having an intermediate chamber for the reception of an absorbent packing, and the inner plate provided with rims or flanges to fit around the mouth and over the nose of the wearer, substantially as described. 3rd. An inhaler or respirator consisted of a perforated inner plate made of flexible india rubber having an inwardly-projecting border flange or rim made integral therewith, and an outer perforated plate of some rigid material adapted to fit on said inner flexible plate and form a chamber between the two plates, substantially as described. 4th. An inhaler or respirator consisting of the inner and outer sections, the outer one constructed with the interior surrounding rim and the inner one with the exterior cushioned rim of soft india rubber, and both sections having holes through which are passed cords or elastic loops, for connecting the two sections together and securing the same to the face of the user, substantially as described. 5th. An inhaler or respirator consisting of an inner and outer section, the former provided with an exterior cushioned rim and the latter with a surrounding rim, to form a chamber between the two sections, and both sections provided with obliquely-arranged openings, substantially as described. 6th. An inhaler or respirator having an air filtering or impregnating chamber and a portion surrounding or fitting over the nose of the wearer, having outwardly-opening exhalation valves, substantially as described. 7th. An inhaler or respirator having an attachable and detachable nose section, substantially as described.

No. 20,127. Lubricator. (Graisseur.)

Allen W. Swift, Elmira, N.Y., U.S., 3rd September, 1884; 5 years.

Claim.—1st. The combination, in a lubricator, of a tube extended from a steam passage or steam space to the lubricant cup, and having its intermediate portion deflected and isolated to form, by its exposure to the air, a condenser of the steam passing through it, substantially as set forth. 2nd. The combination, with a lubricant cup, of a lubricant duct and a direct steam duct having in common one

connection with the steam-pipe of the engine, and the intermediate portions of their lengths isolated from each other, substantially as and for the purpose specified. 3rd. The combination, with the lubricant cup A, of the supporting-arm B provided with the lubricant duct a, and with the short steam duct b and vertical duct b₂ respectively, at opposite ends, and the tube c deflected and isolated from the arm B, and intersecting the ducts b₁ and b₂, substantially as shown and described. 4th. The combination, with the cup A and steam condensing ducts b₁, b₂, of the coupling bolt C provided with the central channel b₃, and the tube c inserted in the side of the hollow portion of the bolt, substantially as described and shown. 5th. The combination with the steam condensing duct and its horizontal extension c, the lubricant cup composed of metal and a provided in front of the duct extension c, with an observation port r covered with a transparent plate, substantially as and for the purpose set forth. 6th. In combination with the oil cup of a lubricator, the port r covered by a glass plate, and the pipe or tube c having an inclined end or face, substantially as set forth.

No. 20,128. Moccasin. (Mocassin.)

Olivier Durocher, Ottawa, Ont., 4th September, 1884; 5 years.

Claim.—1st. As a new article of manufacture, moccasins made of deer-skin leather, provided with a lining composed of woollen fabric, or a fabric analogous thereto, combined with a water-proof coating, substantially as and for the purpose set forth. 2nd. As a new article of manufacture, a lining composed of textile fabric combined with a water-proof coating, preferably of caoutchouc, and fixed to the interior surfaces of shoes or moccasins by means of cement, substantially as described. 3rd. The combination, with a moccasin or shoe, of a lining formed of a union of textile fabric with a water-proof coating, the said lining being held in place by cement of any approved kind, substantially as and for the purpose specified.

No. 20,129. Fire-Escape. (Sauveteur d'Incendie.)

Gilbert F. Smith (assignee of Henry F. de Boek), Toronto, Ont., 4th September, 1884; 5 years.

Claim.—The threading of the rope through the block in such a manner as, by the friction, to reduce the rate of descent and allow it to be regulated by the ascending rope.

No. 20,130. Buggy or Carriage Gear. (Train de Boghei ou de Voiture.)

John B. Armstrong, Guelph, Ont., 4th September, 1884; 5 years.

Claim.—1st. The naked axles A and B, connected by converging perches C, made from tempered steel plates, the front axle having on its top, near the shoulders, the C-springs D rigidly connected at their lower ends, their free ends being connected to the cross spring E by free swinging shackles, the cross spring E supporting the front part of the carriage body by means of a supporting saddle G, wear plates H and K and spring bar I, the back springs F supporting the spring-bar J, all operating as and for the purposes described and set forth. 2nd. In a buggy or carriage gear, tempered spring, steel perches rigidly connected to the rear axle toward the shoulders, and converging toward the pivot or turning point on the front axle, the head block or head plate. 3rd. In a buggy or carriage gear, a cyma-reversa shaped cross spring hung with swinging connections from either rigid or flexible curved end supports, the lower ends of the supports being rigidly attached near the shoulders of the front axle, and the cross spring so formed that, when strained or heavily laden, it will be self-compensating and adjust itself to suit the load carried, as and for the purpose described and set forth. 4th. In a buggy or carriage gear, a tapered single plate cyma-reversa shaped cross spring attached to tapered single plate C-springs by swinging connections, and so formed that, when heavily laden, the lower end curves will find a support on the axle, as and for the purpose specified and set forth. 5th. In a buggy or carriage gear, upwardly curved C-shaped supports made from single steel plates with eyes formed on the upper free ends by rolling the stock into a circle or otherwise, the lower ends being rigidly attached to the axle for the purpose of swinging cross springs from and between their inward free ends. 6th. Receiving cushions a, of rubber or other suitable material fastened to the axle by a suitable strap or clip, as and for the purpose specified and set forth. 7th. Rigidly connecting the hind spring F and perch ends to the naked rear axle of a buggy gear by projecting tits, clips, etc., substantially as described and set forth. 8th. In a buggy or carriage gear, rigidly connecting the draw-jerk from C-springs or curved supports, and anti-shaft rattler springs to the naked front axle, and each other by tits, a clip, bar, bolts, etc., substantially as described and set forth. 9th. In a buggy or carriage gear, connecting the steel plate perches C at the pivot or turning point on the front axle, by round bosses a recessed into the axle and held in position by a bolt o, also rigidly securing the perches together by clips h, as described and set forth. 10th. In a buggy or carriage gear, forming a spring safety device by extending the perch plates C forward of the front axle and connected at the ends, as described and set forth. 11th. Clip, Fig. 8, with flat seat u on cross-bar, said cross-bar being formed from the same size stock as the round shanks. 12th. In a buggy or carriage gear, end finishes L, M, N, on a round or button shape, as and for the purpose described. 13th. In a buggy or carriage gear, the spring bar I with wear plate H attached, wear plate having a round projecting boss j, which pivots either into a lower wear plate k or the supporting saddle G at the centres, the saddle ends being clipped to the cross spring E, substantially as and for the purpose described and set forth.

No. 20,131. Buggy or Carriage Gear. (Train de Boghei ou de Voiture.)

John B. Armstrong, Guelph, Ont., 4th September, 1884; 5 years.

Claim.—1st. In a buggy or carriage gear, the extension of the spring perch plates to form inwardly curved end supports, as and for the purpose specified. 2nd. In a buggy or carriage gear, the cyma-reversa shaped side springs G connected to inwardly curved

scribed. 6th. In a lasting machine, the combination, with the reciprocating plunger bars K, L, provided with grooves or recesses for the awl *d*, and peg-driver *g* and the peg wood holder P of the knife or cutter *n* secured to the plunger bar L, of the peg-driver, and means, substantially as described, for preventing the advance of the peg wood consisting of a retainer bar *p* working in a guide *g*, whereby the peg is held back during the operation of the awl to form the hole, substantially as set forth. 7th. In a lasting machine, the combination, with the reciprocating plunger bars K, L, the awl *d* and peg-driver *g* secured thereto, the knife or cutter *n* secured to the plunger bar L and the peg wood holder P, of the vertically sliding retainer bar *p* operated by the cams *n* on the shaft *p* and the spring *r*, all constructed to operate substantially in the manner and for the purposes described. 8th. In a lasting machine, the combination, with the alternately reciprocating awl *d* and peg-driver *g* and the knife or cutter *n* attached to the plunger bar L, of the spring *r* for holding the peg cut or split off by the knife *n* in a vertical position to insure its being struck squarely by the peg-driver in its descent, substantially as set forth. 9th. In a lasting machine, the combination, with the frame C, the reciprocating plunger bars K, L, provided with grooves or recesses *d* and the spring *r* and peg-driver secured thereto, and operating as described, of the nose piece *i* serrated on its under side and provided with a single vertical aperture *f* for the passage of the awl peg and peg-driver, and having passages or grooves *e* *g* and *h*, all constructed to operate substantially as set forth. 10th. In a lasting machine, the combination, with the shaft *p* and mechanism connected therewith for driving a peg or fastening device, of the vertical driving shaft D connected with the said shaft *p* by bevel gears *m*, *n*, substantially as and for the purpose set forth.

No. 20,136. Apparatus for Bending Tubes and Pipes. (*Machine à Courber les Tuyaux.*)

Edward P. Follett, Rochester, N. Y., U. S., 4th September 1884; 5 years.

Claim.—1st. In an apparatus for bending tube or pipe, the combination of a bed upon which the tube is laid, a grooved forming head over which the tube is bent, a clamp for fastening the tube, a die which bears upon the tube and sweeps around the forming head to produce the bending, and two heads at opposite ends of the machine to hold the ends of the tube, one being stationary, the other moving in unison with the die to clamp the end of the tube as it is bent, as set forth. 2nd. In an apparatus for bending tube or pipe, the combination, with a grooved forming head over which the tube is bent and with a grooved die for bending the tube, of two heads on opposite sides for holding the ends of the tube, one head being stationary, the other moving concentrically around the forming head in unison with the die to carry the end of the tube as it is bent, as set forth. 3rd. In an apparatus for bending tube or pipe, the combination, with a grooved forming head over which the tube is bent, and with a grooved die for bending the tube, of connections which wind over the forming head as the die progresses, and a head at the outer end of the connections for holding the end of the tube, as set forth. 4th. In an apparatus for bending tubes or pipes the combination of a grooved forming head provided with offsets or steps of different diameters and connections which are changeable to the different off-sets or steps projecting outward beyond the forming head, and carrying the head that supports the end of the tube, as and for the purpose specified. 5th. In an apparatus for bending tube or pipe, the grooved forming head provided with corrugations in the groove for the purpose of crimping the pipe on the under side while being bent, as set forth. 6th. In an apparatus for bending tube or pipe, the combination, with the grooved bed for holding the tube, of a frame pivoted to the bed carrying at its outer end a head for receiving the end of the tube, said frame being adjustable vertically on its pivot to bring the head in position to receive the bent end of the tube preparatory to bending the opposite end, as set forth. 7th. In combination with the grooved bed A, the frame *l* attached to the frame by set screws and constructed with side pieces *j*, *j*, and an end piece *k* connected by set screws, whereby said end piece may be changed in position as the frame is adjusted vertically, as set forth. 8th. The combination, with the yoke E and forming head A, of the die G pivoted in the yoke and serving to clamp upon the tube before the yoke receives movement, as herein shown and described.

No. 20,137. Clutch Devices. (*En.tentures.*)

Amédée Tétrault, Miamisburg, Ohio, U. S., 4th September, 1884; 5 years.

Claim.—1st. In a clutch device, a loose driving pinion B gearing with the driving wheel D and provided with clutch teeth *a*, in combination with a driving pinion A provided with clutch teeth *a* and means whereby the pinion A is at intervals geared with the shaft of the wheel D to impart to the latter a motion in excess of that of the pinion B, substantially as described. 2nd. The combination, with the clutch teeth, one carried by a loose and the other by a tight pinion upon the shaft H, and with the wheel gearing with the loose pinion, of means for temporarily driving the said wheel at a greater speed to move one part of the clutch from the other, and a stop device for holding the movable part of the clutch in the position to which it is moved, substantially as set forth. 3rd. The combination of the two part clutch, and means for driving one part at a greater speed than the other to operate them, a detent for holding the moved part in the position to which it is set, and a spring for restoring it to its place when the detent is moved, substantially as set forth. 4th. The combination, with the clutch gear and the wheel driven thereby, of independent means for intermittently driving the said wheel positively at an increased speed, and a catch device to hold the clutch and means for operating the same from said wheel, substantially as set forth. 5th. The combination of the pinions A, B, having engaging teeth *a*, *a*, a spring arranged to carry the pinions toward each other, the driver wheel D carrying a rack E, a catch or detent for holding the pinion B in its position after it has been moved, and releasing means, substantially as described. 6th. The combination, with the driving pinion and the wheel to be driven intermittently, of a rack

adapted to engage with the driving pinion and pivoted to fall back as it passes from the same, for the purpose specified.

No. 20,138. Plumbers' Traps.

(*Trappes d'Egouts, &c*)

Thomas Dark, Buffalo, N. Y., U. S., 4th September, 1884; 5 years.

Claim.—A stencil trap for water closets, sewer-sinks, &c., formed of two sizes of pipe, the upper part A (or smaller part) adapted to extend from the closet or other place to be drained to a point D, and a large size G adapted to extend from that point to the outlet at the sewer or larger pipe, as set forth.

No. 20,139. Serving Mallet. (*Mallet à Fourrer*)

John F. Cotton, Halifax, N. S., 4th September, 1884; 5 years.

Claim.—The adoption of the spar-handle and the insertion therein, of a reel containing the small stuff for serving, thus making the improved mallet a labor-saving implement in doing away with the necessity of employing an additional hand to "pass the ball," as when using the common mallet, the reel supplying the stuff being carried around the rope in the process of serving.

No. 20,140. Sewing Machine Attachments.

(*Perfectionnements dans les Moulins à Coudre.*)

Joseph S. Sackett, Wallingford, Conn., U. S., 4th September, 1884; 5 years.

Claim.—1st. The combination of the shank B, constructed with the transverse slot *a* at its lower end, the attachment constructed with an arm D corresponding to said slot, and with a notch *b* in its upper end to embrace the shank at the upper end of the slot, and a device, substantially such as described, to secure the arm in place, and substantially as described. 2nd. The combination of the shank B, constructed with the transverse slot *a* at its lower end, the attachment constructed with an arm D corresponding to said slot, with a notch *d* upon opposite sides, eccentric heads *f* upon a shaft *e* arranged transversely across the shank to engage said notches *d* when the attachment is in place, substantially as described.

No. 20,141. Roller Mill (*Laminoir.*)

John Livingston, Dayton, Ohio, U. S., 4th September, 1884; 5 years.

Claim.—1st. In a roller-mill, the combination, with an oscillating single through shaft provided with an operating lever secured thereto, of the feed-controlling gates and a sliding frame connecting said gates with the through shaft, whereby the oscillation of said through shaft causes the sliding of the frame in the line of said through shaft, and the sliding of said gates in a direction at right angles thereto, substantially as described. 2nd. In a roller mill, the grain-controlling gates S having diagonal slots *u*, in combination with the sliding frame R, wing W or equivalent device and through shaft M, substantially as described. 3rd. In a roller mill, the combination of the driving-belt and the driving pulleys, with the intermediate plain-faced roller pulley, the swivelled and vertically adjustable stock and an adjustable swinging hanger, substantially as described, whereby the intermediate plain-faced idler pulley can be raised or lowered to regulate the tension of the belt, can be swung to either side to enable the belt to be taken out at various angles, and can be turned on the axis of its stock to insure the true running of the belt, as set forth. 4th. In combination with the meal chest, the outward-swinging meal-chest door J, provided with side flanges *k*, *l*, stop pins *l* and ledge or flange *m*, substantially as and for the purpose specified. 5th. The combination, with the supported sliding-frame R and gates S, of the through-shaft N provided with an adjustable pitched segment-wing W, whose edge is confined between lugs pendent from the frame R, whereby the oscillation of the through shaft causes the frame R to slide on its supports without lost motion, substantially as described. 6th. The combination, with the adjustable roll-supports I and the pivots upon which they are mounted, of the lugs *e* projecting from the frame and the adjusting screws *f* co-operating with the lugs, whereby the roll supports are prevented from displacement by lateral strains by means independent of their pivot connections, substantially as described.

No. 20,142. Roller Mill. (*Laminoir.*)

John E. Wilson, Galt, Ont., 6th September, 1884; 5 years.

Claim.—1st. A corrugated plate D fixed to the rod C, which rod is journaled in the bottom of the hopper A, in combination with mechanism arranged to impart a reciprocating movement to the said corrugated plate, substantially as and for the purpose specified. 2nd. A hopper A having at its bottom two bars or rods C, with fingers B set slightly on an incline towards each other, in combination with revolving cams E arranged to impart an independent longitudinal reciprocating motion to each bar C, so that one bar shall move in one direction while its mate is moving in the opposite direction, substantially as and for the purpose specified. 3rd. The rod C journaled in the bottom of the hopper A and having fixed to it the boards F, in combination with an adjustable balance weight G, arranged substantially as and for the purpose specified. 4th. The boards F placed hopper-shaped on the bottom of the hopper A and having corrugated faces at the point where they come in contact with each other, in combination with an adjustable balance-weight fixed to one of the boards which is pivoted arranged, substantially as and for the purpose specified. 7th. The fingers B fixed to the bar or rod C journaled near the bottom of the hopper A, the fingers B being set at an angle substantially corresponding with the angle on one side of the hopper, so that the points of the fingers shall project towards the opening between the feed roller, and the feed-gate, in combination with mechanism arranged to impart a reciprocating motion to the said fingers.

No. 20,143. Process and Apparatus for the Manufacture of Gas. (*Appareil à faire le Gaz.*)

John Hanlon, New York, N. Y., U. S., 6th September, 1884; 5 years.

Claim.—1st. The process of manufacturing gas, which consists in heating up the generating and fixing chambers by the combustion of fuel in the former, and of products from such fuel in the latter, thereby heating a large body of refractory material in the fixing chamber then decomposing steam in the fuel, enriching the resulting gases with hydro-carbons, then combining and fixing the carburetted gas by passing it through a small portion of the heated refractory material and to the seal box, then as the first portion is cooled passing the succeeding volume of gas through another heated portion of refractory material and out to the seal box or main, and thus passing successive volumes of gas as produced through succeeding bodies of heated refractor material, whereby destructive decomposition of the hydro-carbons is prevented and a uniform quality of gas as to candle power is produced. 2nd. The closed generating chambers having a single grate common to both, and communicating with each other at their bases above the grate, in combination with a gas discharge pipe connecting with the top of one of the chambers. 3rd. In combination with a gas generator, the sleeve, and the sliding oil supply pipe fitting in such sleeve, so that the oil pipe may be protected beyond the furnace wall internally when oil is supplied and withdrawn when the supply of oil is shut off. 4th. The two reciprocating generators having a connecting base, in combination with the grate, and one or more vertical partitions in the ash pit for causing the gases to pass from one chamber into the other above the grate. 5th. The two generating chambers connected by a common base, in combination with steam supply pipe connecting with their upper portions, the connecting air blast pipes and the gas outlet pipes leading from the upper portion of each chamber. 6th. The two generating chambers connected at their bases, in combination with the steam superheating chambers placed above them, the gas outlet pipes leading from the generators below, the steam superheating and decomposing chambers, and the air, steam and oil supply pipes, as described. 7th. The two generating chambers having a connecting base, in combination with the steam superheating and decomposing chambers mounted above them, the gas outlet pipes leading from the upper portions of the generators, the outlet pipes for products of combustion leading from the superheating, and decomposing chambers and supply pipes for air and steam connected, as and for the purpose described. 8th. The two closed reciprocating gas generating chambers having a connecting base, and an arch extending from front to rear above the bottom of the chamber, so as to form a passage from one chamber to the other and support the wall or walls separating the two generating chambers, in combination with connecting air blast pipes and gas discharge pipes, as described. 9th. The two generating chambers connected at their bases, in combination with the steam superheating and decomposing chambers above them, the gas outlet pipes from the upper portions of the generators, the outlet pipes from the superheaters and decomposers for products of combustion, a fixing chamber and pipes connecting the outlet pipes from the generators and superheaters with the fixing chamber. 10th. A gas generator, in combination with a fixing chamber having gas outlet pipes leading from it at different distances from the gas inlet pipe, whereby a small portion of the fixing chamber may be used at one period for fixing the gas and another portion used at a succeeding period, and destructive decomposition of hydro-carbon thereby prevented and gas of a uniform candle power produced. 11th. A gas-fixing chamber containing a filling of refractory material and having gas outlet pipes provided with controlling valves or seals, and connecting therewith at different distances from the gas inlet pipe, for the purpose described. 12th. A gas-fixing chamber, in combination with a hydraulic seal box, pipes connecting different sections or portions of the fixing chamber with the seal box, and the valves for closing the pipes, arranged in the seal box for the purpose described. 13th. The combination of a gas ejection pipe of a gas apparatus, with a hydraulic main or box, said pipe projecting into the box, a valve for closing the end of the pipe connected to one end of a pivoted lever in the box, and a rod connected to the other end of the lever and passing up through the top of the box for operating the valve. 14th. A gas generator, in combination with a fixing chamber containing refractory material separated into different sections or bodies by intervening spaces, gas outlet pipes communicating with the spaces between the bodies of material, and a pipe connecting the generator with one end of the fixing chamber, for the purpose described. 15th. In combination with a gas generator, a fuel-feeding hopper having a valve in its bottom, a charge chamber holding a single charge of coal, a storage chamber adapted to hold several charges of coal, a slide for separating its charge chamber from the storage chamber, and a tight fitting lid or cover closing the top of the storage chamber. 16th. The charging hopper having a water-cooled valve in its bottom, a grated slide between the charge chamber and the storage chamber, in combination with a furnace. 17th. The charging hopper having a water-cooled valve at its bottom, a grated slide between its charge chamber and its storage chamber, and a tight-fitting lid closing its top, in combination with a gas generator. 18th. The two reciprocating generators united to a common base freely communicating with each other. 19th. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap, and then through a body of incandescent fuel, substantially as described. 20th. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap, thereby oxidizing said scrap, and then through a body of incandescent fuel, and of alternately reducing the oxidized scrap to a metallic condition by subjecting it to the action of nascent carbonic oxide, thereby enabling the continued use of said scrap without removal from the apparatus, substantially as described.

No. 20,144. Sorghum Evaporator.

(*Chaudière Evaporatoire pour le Sorghum.*)

Philo S. Ewins, West Berkshire, Vt., U. S., 6th September, 1884; 5 years.

Claim.—1st. The evaporating pan divided into sections by means of partitions, and provided with crimps H in its bottom which meet the lower edges of said partitions, and are bevelled near the front and rear walls of the pan, and the partitions each having an extension or lip at one end, substantially as described. 2nd. The evaporating pan divided into sections by means of partitions, each section being provided with one or more flues G, said pan having crimps in its bottom, as specified, and the partitions, substantially as described. 3rd. The combination, with a furnace having a smoke box over its front wall, of an evaporating pan provided with a number of internal flues, the boiler in rear of the pan and a frame provided with the deflector M having the opening n, as and for the purpose specified. 4th. The combination, with a furnace having over its front wall a smoke box, of an evaporating pan provided with a number of flues, and a sub-chamber or heater in rear of the evaporating pan, a tube to receive the sap before it enters the heater, said tube being arranged in connection with the evaporating pan, substantially as and for the purpose set forth. 5th. The combination, with a furnace having over its front wall a smoke box provided with a smoke exit, of an evaporating pan provided with a number of flues traversing its length and the partition walls, a heater or sub-chamber arranged at its back and a tube arranged along some of the partitions of the evaporating pan and having its exit orifice in the heater, substantially as described. 6th. The combination with a furnace having over its front wall a smoke box provided with an orifice in its bottom, and a smoke exit and an evaporating pan having a number of internal smoke flues, of the hinged damper arranged in the smoke box, and adapted to operate, substantially as described and for the purpose set forth.

No. 20,145. Car-Coupling.

(*Accoupleur de Wagons.*)

John Skinner, Flint, Mich., U. S., 6th September, 1884; 5 years.

Claim.—1st. The combination with the draw-head, of the bar having a cross-head which overlies the end of the link, the bar having connection to the draw-head at its rear end, and a shoulder supporting the link beneath the weight of the projecting end of the link and being substantially counterbalanced by the weight of the bar and the cross-head, substantially as described. 2nd. In a car-coupling, the combination, with the recessed draw-head, of a bar lying therein and provided with a cross-head, the ends of which engage with and ride up and down upon the forwardly-inclined walls of a chamber located behind the coupling-pin, substantially as described. 3rd. In a car-coupling, the combination, with a recessed draw-head, of a bar lying therein, a cross-head upon the head of said bar having its lower edge inwardly bevelled, and a chamber or recess within the draw-head having forwardly-inclined walls which engage with the said cross-head substantially as described. 4th. In a car-coupling, the combination, with the draw-head having the recess 6 and inclined walls 7, of the bar 8 having slot 9 and bevelled cross-head 11 having the groove 13, substantially as described. 5th. In a car-coupling, the combination with the draw-head 1 having opening 2 and shoulder 16, of the bar 8 and cross-head 11, the latter having bevelled edge 12 and groove 13 and the pin 3 and link 15, substantially as described.

No. 20,146. Watch Case. (*Boitier de Montre.*)

The Fahey Watch Case Co. (assignees of Joseph Fahey, New York, N. Y., U. S.,) 6th September, 1884; 5 years.

Claim.—1st. The combination, with the exterior case of a watch, of an interior removable ring or case adapted to receive and contain a watch movement and provided with a pendant for holding it, and with a lug or pin opposite the pendant for locking it within the exterior case, substantially as described. 2d. The combination, with the exterior case of a watch, of an interior removable ring adapted to receive and contain a watch movement and provided with a lug or pin back cap, a pendant upon its side for holding it and with a lug or pin opposite the pendant for interlocking it within the exterior case, substantially as described. 3rd. A ring adapted to receive and contain a watch movement provided with a solid back cap attached thereto, a pendant upon one side for holding it and a lug or pin immediately opposite the pendant for locking it within a containing case, substantially as described. 4th. The combination of an exterior case for a watch having a recess in its band or ring for the reception of the stem, of a pendant and an interior ring or band having a pendant whose stem takes into such recess, and a lug or pin opposite the pendant adapted to take under a shoulder upon the interior of the band or ring of the case, substantially as described. 5th. The ring 1 provided with back cap 5, lug 2 and pendant 3 having stem 4 arranged relatively, as shown, and adapted to receive and contain a watch movement, substantially as described. 6th. The combination, with the exterior watch case consisting of the band or ring 6 provided with recess 9 and caps 7, 8, of the movement containing ring 1 having cap 5 lug or pin 2 and pendant 3 with stem 4, arranged and operating substantially as described.

No. 20,147. Apparatus for Distilling Wood.

(*Appareil distillatoire pour le bois.*)

Albert Brown and Charles S. Nellis, Chittenango, N. Y., U. S., 6th September, 1884; 5 years.

Claim.—1st. The combination of retorts fitted side to side, and provided in their adjacent sides with ducts communicating with each other and with the source of heat, substantially as set forth. 2nd. The combination, of two air tight semi-cylindrical retorts, jointed at their straight or diametrical side, and provided in the centre of their adjacent sides with coinciding longitudinal channels, substantially as described and shown. 3rd. In combination with two or more retorts and fire arches for heating the same, combustion chambers extended through the retorts, flues connecting the combustion chambers at each end of the retorts, intermediate flues connecting between said flues and dampers for controlling the combustion chamber exit, substantially as and for the purpose set forth. 4th. The combination of the retorts having the combustion chamber extended through it, horizontal flues communicating at each end with the chimney and connected with the combustion chambers respectively.

ely at the upper and lower end of the retorts, vertical flues connecting the horizontal flues intermediately between the retorts and dampers in the horizontal flues intermediately between the vertical flues and the combustion chambers at each side thereof, substantially as described and shown and for the purpose set forth.

No. 20,148. Black Leaf Check Book.

(*Agenda à feuille noire.*)

Thos. Geo. Cooper, Jarvis, Ont., 6th September, 1884; 5 years.

Claim.—1st. In a black-leaf check-book, the combination of a black-leaf attached to the cover in such a manner that it may be used between any two of the leaves without disturbing the others as shown and described. 2nd. In a black-leaf check-book in which the leaf A to be written on is folded over the leaf B on which the said writing is transcribed, the combination of a black-leaf D held to the cover E at right angles to the fold between the leaves A and B. 3rd. In a black-leaf check-book, the combination of the detachable clasp F arranged to clamp the black-leaf D to the cover, substantially as and for the purpose specified. 4th. In combination, with the cover of a book, a clamp F arranged to grasp the cover and having a hinged plate *f* provided with a heel *b*, arranged substantially as and for the purpose specified.

No. 20,149. Process for preparing Tan Bark.

(*Manière de préparer le Tan.*)

The Holbrook Manufacturing Co. (Limited), (assignee of Byron Holbrook, Kenosha, Wis., U.S., 6th September, 1884; 5 years.

Claim.—1st. The herein-described method or process of preparing tan-bark for use, which consists in crushing the dry bark and reducing it to thin flakes by passing it between rolls under heavy pressure, substantially as and for the purpose set forth. 2nd. As a new product, dry tan-bark reduced to thin flakes by great pressure, substantially as herein described.

No. 20,150. Rotary Fan.

(*Éventail Rotatoire.*)

James M. Seymour, Newark N.Y., U.S., 6th September, 1884; 5 years.

Claim.—1st. The combination, with the hollow fan shaft, the fan and suitable clutching mechanism, of a shifting rod *b* depending from the shaft below the fan blades, as set forth. 2nd. The combination, with the hollow fan shaft, the pulley D and fan hub F, of the notch in the hub fitted to turn on the shaft, the shifting rod inside the shaft and the pin operating through a slot in the shaft to engage the notch, substantially as shown and described. 3rd. The combination, with the hollow shaft C and hub fitted to rotate closely thereon, of the supporting collar I, the shifting rod inside the shaft and the clutch pin *a* operating through a slot in the shaft to clutch the hub, the collar having recess *c* and set screw *e* and constructed to turn on the shaft, as and for the purpose set forth. 4th. The combination, with the fan shaft, the fan and their clutching mechanism, of the shifting rod depending from the shaft, and an oil cup attached thereto, as and for the purpose set forth. 5th. The combination, with the fan shaft, the fan and their clutching mechanism, of a shifter-rod depending from the shaft, an oil cup on the rod to arrest the oil, and a swivelling handle at its lower end, substantially as herein shown and described.

No. 20,151. Door Holders or Checks.

(*Verrous des Portes.*)

William H. Herrick, Grinnell, Iowa, U.S., 6th September, 1884; 5 years.

Claim.—1st. A door holder, made substantially as herein shown and described, and consisting of a spring strip or bar having one end fastened on one end of a groove on the bottom edge of the door, and having the other end resting on the floor, as set forth. 2nd. The combination, with a door, of a spring having one end fastened to the bottom edge of the door, and having a cushion fastened on the under surface of its free end, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, with a door, of a spring having one end fastened to the bottom edge of the door, and of a bolt or latch for holding its free end raised to the bottom edge of the door, substantially as herein shown and described, and for the purpose set forth. 4th. The combination, with a door, of a spring having one end fastened to the bottom edge of the door, a latch or bolt for holding the free end of the spring raised to the bottom edge of the door, a runner on the bottom edge of the door and a loop adapted to slide on the said runner and surrounding the spring, substantially as herein shown and described and for the purpose set forth. 5th. The combination, with a door, of a spring D secured to the bottom of the same, the runner L and the loops M surrounding the spring D and the runner L, substantially as herein shown and described and for the purpose set forth.

No. 20,152. Fruit Dryer.

(*Séchoir à Fruits.*)

Samuel L. Miller, Washington, Mich., U.S., 6th September, 1884; 5 years.

Claim.—1st. A fruit drying chamber provided with adjustable means for admitting cold air near the bottom, adjustable means for the escape of hot air and steam from the upper part of said chamber, and means for adjustably admitting hot air from the furnace chamber to the drying chamber, substantially as and for the purpose described. 2nd. As a means for controlling the heat in a fruit drying device, a perforated division between the furnace chamber and the drying chamber proper, in combination with a sliding damper of means of which said perforations may be partly or wholly closed, as specified. 3rd. A fruit drying device, constructed substantially as described, the drying chamber proper of which is provided with tracks and coincident doors, substantially as set forth. 4th. In combination with a fruit-drying chamber provided with tracks, screens provided with castings upon which there are formed downwardly projecting

flanges and off-sets, substantially as and for the purpose described 5th. A fruit drying device consisting of a lower chamber provided with a suitable furnace and smoke pipes, a drying chamber proper separated from the lower chamber by means of a perforated diaphragm, adjustable means for the admission and the escape of air, and steam tracks and doors coincident thereto, an ingress door and screens provided with means of separation, substantially as set forth.

No. 20,153. Dynamo Electric Machine.

(*Machine Dynamo-Électrique.*)

Thos. S. Kay, Hamilton, Ont., 6th September, 1884; 5 years.

Claim.—1st. An armature for a dynamo electric machine, composed of a number of iron rings having projecting strips all the way round each side of them, for the purpose of admitting air between said rings on the outside only, substantially as described. 2nd. An armature for a dynamo electric machine composed of a number of iron rings which are faced perfectly true and bolted together or riveted, as shown in Fig. 4 of accompanying drawing, substantially as described. 3rd. In an armature for a dynamo electric machine, composed of a number of iron rings which are all alike, with the exception of the two outside ones which have grooves turned in them for the reception of brass plates or flanges A, which are secured to the armature by screws S, S as shown in Fig. 3 of drawings, substantially as described. 4th. The combination of a number of iron rings with brass flanges or plates, which are bored to fit armature shaft and secured to it by set screws or keys, substantially as set forth and described. 5th. A commutator for a dynamo electric machine composed of brass segments L with grooves turned in the ends, in combination with rings O, O of any hard substance which is a non-conductor, substantially as described. 6th. A commutator for a dynamo electric machine composed of a number of segments grooved in their ends, in combination with the collars K and K which have grooves in their faces also for the reception of the rings O, O, substantially as set forth and described.

No. 20,154. Centrifugal Reels.

(*Bluterie Centrifuge d'un Moulin à Blé.*)

Geo. Thos. Smith, (assignee of W. H. Dickey,) Jackson, Mich., U.S., 6th September, 1884; 5 years.

Claim.—1st. In a flour bolt, the combination of a reel having a head provided with a projecting tubular support, a beater shaft within the tubular support, a sleeve bearing mounted loosely in said tubular support, a boxing in the frame supporting both the sleeve bearing and the tubular support, and a stop attached to the beater shaft to prevent it from moving longitudinally in the sleeve bearing, substantially as set forth. 2nd. In a flour bolt, the combination of a reel having a head provided with a projecting tubular support, a beater shaft within the tubular support, a sleeve bearing surrounding the beater shaft and having a globe-shaped expanded portion, a boxing on the frame supporting both the sleeve bearing and the tubular support, and a stop attached to the beater shaft to prevent it from moving longitudinally in the sleeve bearing, substantially as set forth. 3rd. In a flour bolt, the combination of a reel having a head provided with a projecting tubular support, a beater shaft within the tubular support, a sleeve bearing surrounding the beater shaft and mounted loosely in said tubular support, and a pinion G attached to the beater shaft and operating as a stop to prevent longitudinal movement of the beater shaft and also to drive the spur gear G', substantially as set forth. 4th. In a flour bolt, the combination of a reel having a head provided with a projecting tubular support, a beater shaft within the tubular support and a sleeve bearing having a globe-shaped expanded portion, and a cylindrical part E projecting into the tubular support and towards the reel head, substantially as set forth. 5th. In a flour bolt, the combination of a reel having a head provided with a projecting tubular support, a beater shaft arranged within the tubular shaft, a sleeve bearing having a cylindrical portion of less diameter than the opening in the tubular support and arranged therein, a lug *d* projecting from the sleeve bearing and a seat in the inner wall of the tubular support to receive the lug, substantially as set forth. 6th. In a flour bolt, the combination of the reel having two heads each provided with a projecting tubular support, a beater shaft within the tubular supports, sleeve bearings mounted loosely in the tubular supports, a beater shaft within the sleeve bearings and stops rigidly affixed to the shaft and engaging with the outer ends of the sleeve bearings, substantially as set forth.

No. 20,155. Fertilizing Materials.

(*Matières pour Former des Engrais.*)

F. L. Harris, Thos. M. Smith, Rob. White Smith and Thos. L. Field, Baltimore, Md., U.S., 6th September, 1884; 5 years.

Claim.—In the manufacture of fertilizers, the process, herein described, of treating phosphates, mineral and phosphatic guano, marine and oyster shells, lime bearing and other substances, said process consisting in placing such substances in a closed vessel in the presence of enriched liquor extracted from animal substances, in the manner described, or of water, and raising the temperature to a point between 250° and 320° Fah. or higher, whereby the fluid is driven by the presence of the enclosed vapour into every part of the substance treated after which the product is dried and broken up, substantially as described.

No. 20,156. Two Wheeled Vehicle.

(*Voiture à Deux Roues.*)

Francis L. Perry, Bridgeport, Conn., U.S., 8th September, 1884; 5 years.

Claim.—1st. In a two-wheeled vehicle, a single spring connecting medium between the pivoted shaft and the body of the vehicle, or its attachments, said spring being attached at or near the pivotal point on the shaft and extending in the same vertical plane therewith, with

bevelled or inclined bearings for the same, substantially as shown and described. 2nd. The combination, with a shaft or pole frame pivoted to the forward part of the body or frame, and provided with rearwardly projecting arms or extensions, of single springs, each secured to the pole or shaft frame at or near its pivotal point and extending rearwardly where it is secured to the body frame, the spring and shaft or pole frame extension forming a rocking bearing, substantially as set forth. 3rd. The combination, with the pole frame or shaft and the vehicle body, of screw-threaded bearings for supporting the body in any desired lateral adjustment, substantially as set forth.

No. 20,157. Two Wheeled Vehicle.

(Voiture à Deux Roues.)

Francis L. Perry, Bridgeport, Conn., U.S., 8th September, 1884; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination of a vehicle body or frame, shafts or pole-frame pivotally secured thereto and springs secured at one end to the shafts or pole-frame, their opposite ends being curved around the rear end of the shafts and secured to the body of the vehicle frame or axle, substantially as and for the purpose set forth. 2nd. In a two-wheeled vehicle, the combination of the body or frame shafts or pole-frame pivotally secured to the body and springs, the front ends of which are rigidly secured to the shafts in front of the pivotal point *b*, while their rear ends are curved so as to overlap the rear ends of the springs being secured to the vehicle body-axle or frame, substantially as set forth. 3rd. In a two-wheeled vehicle, the combination of a body, shafts or pole-frame and springs secured to the said shafts near their front ends, the extreme front ends of said springs being looped to form the bearings for the shafts, while their rear ends are curved so as to overlap the shafts and secured to the vehicle body or body-frame, substantially as set forth. 4th. In a two-wheeled vehicle body, the combination with the body, pivoted shafts and springs, of yielding cushions encircling the ends of the shafts, substantially as set forth.

No. 20,158. Ice Velocipede.

(Vélocipède à Patins.)

Chas. Sanford and Peter S. Kinne, Paterson, N. Y., U.S., 8th September, 1884; 5 years.

Claim.—1st. The combination of the frame B having sides *h*, and transverse bar *k*, and runners *l* secured to said frame by bolts *k*¹, *k*², and standards *b* secured to the frame by bolts *b*⁶, and standard C secured to the front of said frame B, and runner *u* secured adjustably to said frame by pivot rod *u*, substantially as described. 2nd. In a velocipede for ice, the combination, with the standard *b* secured to frame B by bolts *b*⁶, of the wheel *d* with adjustable bearings *b*₁ for journalling said wheel, the bearings arranged in slots *b*₅, and slots *b*₆ for guiding said bearings, and rods *b*₁ arranged in said bearings *b*₁, with the plate *b*₃ secured to the rods *b*₁, the plate having a pin centrally thereon and spring *b*₂ arranged in said pin, substantially as described. 3rd. In a velocipede for ice, the combination, with the guide runner *u* and its rod *u*₁, of the standard C for supporting said rod *u*, and frame B for supporting said standard C and supporting rods *a*₅ secured in said standard and brace *e* secured in said rods *a* and standard by bolts *a*₇, with curved plate having notches *a*₈ secured to said frame with head light *f* and guide bar *a*¹ for guiding said runner *u* by a knuckle joint *a*₃ and flag *f*¹ with its socket and seat *a* secured to the brace *e* and step *f*² secured to said frame with bolts *k* for securing said brace to the frame B, substantially as described. 4th. In a velocipede for ice, the combination, with the standards *b* secured to the frame by bolts *b*⁶ and wheel *d* having pins *d*¹ with angular points *d*₆, of the treadles *d*₃ for rotating the wheel, the treadles secured to the wheel by crank arms *d*₂ and crank arms for securing said treadles to the wheel with gong *c* secured to the standard and hammer *c* engaging the gong and spring for actuating the hammer and pin for actuating the spring and brake *g* for stopping the velocipede with rod *g*₄, substantially as described.

No. 20,159 Carriage Springs.

(Ressorts de Voiture.)

Samuel Atkinson, Hulton, Pa., U.S., 8th September, 1884; 5 years.

Claim.—1st. In a spring, the combination of a top leaf attached at one end to the body of a vehicle, a bottom leaf attached at one end to the side bar and a leaf arranged between and having its ends overlapping the inner ends of said top and bottom leaves, substantially as described. 2nd. In a spring, the combination of a top leaf attached at one end to the body of the vehicle, a bottom leaf attached at one end to the side bar, the inner ends of said leaves overlapping and a leaf arranged between and having its ends overlapping the inner ends of said top and bottom leaves, substantially as described. 3rd. A spring consisting of two parts arranged and secured parallel with each other, each part consisting of the top and bottom leaves 6 and 7, the outer ends of said springs being attached to the body and side bars respectively, and the middle leaf 6 located between and extending beyond the inner ends of the top and bottom leaves, substantially as set forth.

No. 20,160. Hand Power Lifting and Force Pump. (Pompe Poulante à Bras.)

Olof Patterson New Boston, Ill., U.S., 8th September, 1884; 5 years.

Claim.—1st. In a pump, the combination, with the standard H, of the piston-chamber A provided with the weighted valve C, and the air-chamber D communicating with the piston chamber and provided with the weighted valve C, substantially as herein shown and described. 2nd. In a pump, the combination, with the standard H, the pipe *d* and the handle F, of the piston-chamber A provided with the valve C, the air-chamber D communicating with the piston-chamber and provided with the valve C and the piston E connected by rod *e* with the said handle, substantially as herein shown and described. 3rd. In a pump, the combination, with the standard H and piston-

cylinder A, of the air-chamber D provided with the valve C, and the pipe *d* extending from the standard to and within the air-chamber nearly to its valve-seat, substantially as herein shown and described and for the purpose set forth.

No. 20,161. Cant Hook. (Renard.)

Geo. W. Lord, Bloomington, Pa., U.S., 8th September, 1884; 5 years.

Claim.—1st. The combination, with the lever A having the clip E provided with a jaw *b* and a bevelled stop or rest, the swinging hook B provided with an outer front jog or shoulder *e* facing inward and formed by stepping the inner end of said hook, and with a bevelled inner lip or projection *d*, the ferrule D fluted downward and the pick C with its shank formed with an enlarged outer straight portion, an intermediate continuous tapering portion and an inner reduced straight portion, substantially as and for the purpose as set forth. 2nd. In a cant hook, the swinging hook B constructed with front jog or shoulder *e* facing inward and formed by stepping the inner end of said hook and with bevelled inner lip or projection *d*, in combination with the clip E having a jaw *b* and constructed to form a bevelled stop or rest for said shoulder and lip to bear against to limit the swinging motion of the hook, substantially as specified.

No. 20,162. Injector. (Injecteur.)

William T. Messinger, Cambridge, Mass., U.S., 8th September, 1884; 5 years.

Claim.—1st. In an injector, the three nozzles and steam inlet chamber at the rear of the first or rearmost nozzle communicating with the third or foremost nozzle, and the independent detachable inlet tube passing through the said chamber, substantially as and for the purpose described. 2nd. In an injector, the three nozzles, the first and third of which are supplied with the actuating fluid and the intermediate one of which is connected with the supply of fluid to be moved, and is provided with a lateral outlet for the free escape of the actuating fluid before a combined jet has been produced, substantially as described. 3rd. In an injector, the combination, with the usual overflow chamber, of an outer or auxiliary overflow chamber having an internal passage or chamber adapted to be connected with the outlet or waste pipe passage of the usual overflow chamber, and the outer inclosing case or chamber having outlet passages at its upper and lower ends, the former opening into the atmosphere, substantially as described.

No. 20,163. Advertising Wind Mill.

(Moulin à Vent d'Annonces)

John E. Spencer, Geo. S. Spencer and Sarah C. Letterhans, Bridgeport, Conn., U.S., 8th September, 1884; 5 years.

Claim.—1st. In an advertising wind mill, the rotating body having bearings C, in combination with the wind wheel gears I and F, shaft I and a moving figure connected thereto. 2nd. The base having a hollow standard, the body carrying the operating shaft and journalled in said standard, in combination with the wind wheel pivoted to said body, the spindle having a shank fitting the hollow standard and the pointer pivoted to the spindle. 3rd. The pivoted body carrying vanes H, bearings C and standard N, in combination with the wind wheel, the moving figure and connecting mechanism. 4th. The body C journalled on standard *b* and axle C secured thereto, in combination with sleeve F which carries the wind wheel and is provided with a chamber F₃, which is filled with lubricating material, as described C and for the purpose set forth. 5th. The standard upon which body C is journalled and which is provided with a socket *b*₁, in combination with the spindle having a shank fitting in said socket, arms carried by the spindle which indicate the points of the compass and a pointer pivoted at the top of the spindle to indicate the direction of the wind.

No. 20,164. Injector. (Injecteur.)

William T. Messinger, Cambridge, Mass., U.S., 8th September, 1884; 5 years.

Claim.—1st. In an injector, an overflow chamber consisting of an internal chamber communicating with the combining cone or delivery nozzle of the injector, and with the discharge tube combined with an external chamber communicating with the said internal chamber and having upper and lower outlet openings, the former communicating with the atmosphere and the latter with a waste pipe, substantially as and for the purpose described. 2nd. In an injector, an overflow chamber having an outlet passage to the atmosphere combined with an audible signal, substantially as and for the purpose set forth. 3rd. In an injector, an overflow chamber comprising an internal chamber and an external chamber inclosing it, the said internal chamber having a passage to the said external chamber combined with a valve controlling the said passage, substantially as described. 4th. In an injector, an overflow chamber comprising an internal and external chamber, the former provided with an opening or passage into the latter, combined with a valve controlling the said passage and a locking device for the said valve, as and for the purpose set forth. 5th. In an injector, the three nozzles and common inlet for supplying steam to the first and third, combined with the valve controlling the flow of steam to the third or foremost nozzle, and having a passage communicating with the first or rearmost nozzle and the valve controlling the said passage and adapted to operate the first mentioned valve, substantially as described. 6th. The three nozzles and cylinder D leading to the third or foremost nozzle, combined with the valve E having lugs 13 and projections 14 and a passage through it to the rearmost nozzle, and the valve *f* controlling the said passage and adapted to operate the valve, substantially as described.

No. 20,165. Signs. (Enseignes.)

C. C. Scales and E. H. Davis, Toronto, Ont., 8th September, 1884; 5 years.

Claim.—1st. A sign composed of transparent or translucent letters, burnt or otherwise, made in a sheet of colored glass held stationary,

in combination with a contrastingly-coloured sheet of glass having transparent or translucent letters corresponding with those in the stationary sheet and flexibly suspended behind the stationary sheet, so that it can receive a vibratory swinging motion, substantially as and for the purpose specified. 2nd. A stationary glass B having transparent or translucent letters made on it, in combination with the glass C having letters *a* made in it to correspond with those on B and flexibly supported by the hangers D, substantially as and for the purpose specified. 3rd. The flexible hangers D, suspended from the top rail of the frame A on the pin C, and pivoted at *e* to the frame E which is shaped as specified and contains the lettered glass C, in combination with a stationary glass B, lettered as specified, and contained in the frame A. 4th. The rod C pivoted at E to the frame A and passing through an eye-bolt *f* connected to the frame B, in combination with a pitman H actuated by the revolving crank *d*, substantially as and for the purpose specified.

No. 20,166. Middlings Purifier.

(*Epurateur des Gruaux.*)

John E. Wilson, Galt, Ont., 8th September, 1884; 5 years.

Claim.—1st. In a middlings purifier, the combination of a travelling belt I located between the sieve B and fan C, substantially as and for the purpose specified. 2nd. In a middlings purifier, an endless travelling belt I located between the sieve B and fan C, in combination with a revolving brush K, substantially as and for the purpose specified. 3rd. In a middlings purifier, a travelling endless belt I located between the sieve B and fan C, in combination with revolving brush K located within the chamber T, and the conveyor U located within the said chamber, substantially as and for the purpose specified. 4th. In a middlings purifier, the travelling endless belt I located between the sieve B and main exhaust passage E, and having its outer surface cleaned by the action of the brush K, in combination with the reverse chamber F, arranged substantially as and for the purpose specified. 5th. In a middlings purifier, the travelling endless belt I located within the chamber O between the slanting board M and main exhaust passage E, in combination with the air valves H, substantially as and for the purpose specified. 6th. In a middlings purifier, provided with a vibrating auxiliary hopper Q located below the hopper A and arranged to regulate the discharge of middlings into the slanting boards L and M, in combination with an endless belt I located between the slanting board M, M and main exhaust passage E, substantially as and for the purpose specified. 7th. In a middlings purifier, a vibrating auxiliary hopper Q located below and forming the bottom of the hopper A, in combination with a side-opening *p* extending the full length of the auxiliary hopper Q, substantially as and for the purpose specified. 8th. In a middlings purifier, a vibrating auxiliary hopper Q provided with a side opening *p*, in combination with an adjustable slide *c*, substantially as and for the purpose specified. 9th. In a middlings purifier, a vibrating auxiliary hopper Q provided with a side opening *p*, in combination with adjustable slide *c* divided in the centre, so that each half may be adjusted independent of the other half. 10th. In a middlings purifier, a vibrating auxiliary hopper Q located below and forming the bottom of the hopper A and having the side-opening *p*, in combination with an adjustable slide *c* having a serrated edge, substantially as and for the purpose specified. 11th. In a middlings purifier, a portion W arranged to longitudinally divide the machine into two parts, in combination with independent valves on each side of the partition, arranged to regulate the draft between the chamber D and main exhaust passage E. 12th. In a middlings purifier, provided with an endless travelling belt I located between the sieve B and main exhaust passage E, a partition W arranged to longitudinally divide the machine without interfering with the endless belt I, in combination with independent valves arranged to regulate the draft between the chamber D and main exhaust passage E, substantially as and for the purpose specified.

No. 20,167. Shirts. (Chemises.)

William A. Greene Jr., Toronto, Ont., 8th September, 1884; 5 years.

Claim.—1st. As an improvement in the mode of strengthening the back or analogous openings in shirts or other garments, the strip B folded to receive the edges of the said opening and sewn to the same, substantially as and for the purpose herein set forth. 2nd. As an improvement in the mode of strengthening and finishing the back or analogous openings in shirts or other garments, the strip B folded to receive the edges of the said opening and the edges of the strip C, the whole being secured by a single seam, substantially as shown and set forth.

No. 20,168. Adjustable Shade Hanger.

(*Soupeute de Rideau de Fenêtre.*)

Julius Wagner, Silver City, New Mexico, U.S., 12th September, 1884; 5 years.

Claim.—The combination, with the shade roller F, of the racks A having upwardly projecting teeth, the carriers B held on the racks A, the pawl C pivoted to the lower ends of the carriers B, the rack A' having downwardly-projecting teeth, the carrier B' on the rack A', the pawl C' pivoted to the upper end of the slide B; and the roller G on the carrier B', substantially as herein shown and described.

No. 20,169. Axles for Vehicles. (Essieux.)

James J. Devine, Chesnut Hill, Pa., U. S., 12th September, 1884; 5 years.

Claim.—In combination, the axle A formed with the extended core *a* and the ring or collar *c* and provided with a burr *b*, the metal sleeve B fitted to the core of the axle and formed with the shoulder *d* and wall *e* and the retaining bolt *g*, substantially as and for the purpose set forth.

No. 20,170. Liniment for the Cure of Rheumatism. (Liniment pour Rheumatism.)

Francois Guillionna, New Baltimore, Ohio, U. S., 12th September, 1884; 5 years.

Claim.—A composition for medical purposes composed of alcohol, pure cider, vinegar, kerosene oil, spirits of turpentine, ground cayenne pepper, ground French mustard, ground ginger, flowers of sulphur and diluted carbolic acid, in about the proportions specified.

No. 20,171. Life Preservers.

(*Appareil de Sauvetage.*)

Constant Leduc, San Francisco, Cal., U. S., 12th September, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a life preserver made of the direct stalks or stems of Tule substantially as herein described. 2nd. As a new article of manufacture, the life preserver B constructed of bunches A of the dried stems or stalks of Tule, and an inclosing casing, substantially as herein described. 3rd. As a new article of manufacture, a life preserver made of the bunches A of the dried stems or stalks of Tule, each bunch having a central core *a* of light wood, substantially as herein described.

No. 20,172. Coal Oil Heater for Stoves.

(*Foyer à Chauffer les poeles avec pétrole.*)

Samuel Landon, Iroquois, Ont., 12th September, 1884; 5 years.

Claim.—1st. In a coal oil heater for use in stoves, the base plates C carrying the groups of burners B and hinged to the oil tank A, substantially as and for the purpose set forth. 2nd. In a coal oil heater, the oil tank A, burners B, base plates C, caps *c*, platforms *d* and fences *e*, substantially as described. 3rd. The flues D hinged to the platforms *a* and having the windows *f* and vent holes *g*, substantially as shown and specified. 4th. In a coal oil heater for stoves, the oil tank A having the perforated cover *h* to the oil supply hole in the top of the tank, the air tubes *i* and the hinged base plates C carrying groups of burners B and the flues D, substantially as set forth.

No. 20,173. Roller Bushes.

(*Dés Cylindriques.*)

John Nichol and Thos. McAvity, St. John, N.B., 12th September, 1884; 5 years.

Claim.—The counterbore or recesses in the ends of the open casing A, the rings B with holes drilled or punched through them, and the combination of the rings and robbers in the outer casing fastened together by the stamped studs, as above described.

No. 20,174. Mechanical Movements.

(*Mouvements Mécaniques.*)

Joseph S. Sackett, Wallingford, Con., U.S., 13th September, 1884; 5 years.

Claim.—1st. The combination of the lever B arranged upon a pivot for vibratory movement, the ratchet A one arm of said lever substantially surrounding said ratchet, the two pawls *f, g* arranged in said lever on opposite sides of said ratchet and springs to bear upon said pawls, substantially as described. 2nd. The combination of the lever B arranged upon a pivot for vibratory movement, the ratchet A, one arm of said lever substantially surrounding said ratchet, the two pawls *f, g* constructed respectively with circular heads *h* and the arm with corresponding circular recesses to more than half surround said circular heads, and springs arranged to bear upon said pawls, substantially as described. 3rd. The combination of the lever B arranged upon a pivot for a vibratory movement, the ratchet A, and arm of said lever substantially surrounding said ratchet, the two pawls *f, g* constructed respectively with circular heads *h*, and the arm with corresponding circular recesses to more than half surround said circular heads, and the said arm also constructed with more than half circular recess *m* and with spring *i, e* having a corresponding head *n* to set into said recess *m*, the said springs arranged to bear respectively upon said pawls, substantially as described.

No. 20,175. Ditching Machine.

(*Machine à fossayer.*)

Moses Milner, Leesburg, Ohio, U.S., 13th September, 1884; 5 years.

Claim.—1st. In a ditching machine, the combination of the wheel A, frame B, plough frame I, rods D, E pivoted on opposite sides of the center of wheel A, and the wheel I for supporting the plough frame substantially as shown. 2nd. The combination of the ditching wheel, the plough frame I, the rods D, E and wheel I with the rods C, N; frame B and lever J, substantially as described. 3rd. The combination of the truck, the ditching wheel, the plough frame, the caster wheel which is loosely attached to the plow frame, an operating lever J' and a supporting rod for the caster wheel, whereby the plough frame and the caster wheel can be adjusted at the same time, substantially as specified. 4th. The combination of the ditching wheel, the cam F' having the angular side H' the spades C' and the friction rollers C', the angular side of the cam being arranged in such relation to the spades that they can give inward when they strike an obstruction, substantially as specified. 5th. The combination of the truck and tongue with the pivoted lever X and *a*, means for moving it, the clevis O and the standard J, substantially as set forth.

No. 20,176. Machine for holding and Cutting Rolled Paper. (Appareil à Soutenir et à couper du Papier en rouleau.)

R. W. Hopking, St. Louis, Mi. U.S., 13th September, 1884; 5 years.

Claim.—1st. In a roll paper holder, the combination of a hanger or bracket, and a spring yoke, such as described, the yoke being adapted to spring into and carry a roller upon which is rolled the paper, as specified. 2nd. The combination of a roll paper holder, of a hanger or bracket and a spring knife, substantially as set forth. 3rd. The combination of a hanger or bracket, a spring-yoke or holding device,

and a spring knife adapted to continually press against the side of the roll. 4th. In a roll-paper holder, a knife having its ends bent, as described and for the purpose set forth. 5th. In a roll-paper holder, a knife carrier or yoke, substantially such as described, provided with means for keeping the knife to its work. 6th. In a roll-paper holder, the following combination, a bracket or hanger, a spring-yoke rigidly connected with said hanger at one end, and adapted to be loosely inserted in the ends of a roller or core which carries the paper at the other end, a knife connected with the bracket or hanger by means of a knife-yoke, and means for keeping the knife to its work against the side roll.

No. 20,177. Barrel Truck. (*Truc pour transport de barils.*)

James Holden, Providence, R. I., U.S., 13th September, 1884; 5 years.

Claim.—1st. A barrel truck consisting of a suitable frame supported upon carrying wheels, and provided with wheels on its upper side for supporting a cask or barrel, substantially as described. 2nd. The frame or platform A mounted on wheels, and having the wheels C, C mounted on axles turning in bearings on the platform or frame, and arranged to support a cask or barrel and allow of the ready removal of the same, as described. 3rd. The combination with the platform A provided with the wheels *b*, *b*, of the wheels *c*, *c* having their axles mounted in the cheek pieces *d*, *d*, as described. 4th. The combination, with the platform or frame carrying the wheels *c*, *c*, of the center wheels *b* and the casters *b*, *b*, as set forth.

No. 20,178. Horse Detaching Device for Vehicle. (*Palonnier de voiture.*)

Julius Buesch, Allentown, Pa., U.S., 13th September, 1884; 5 years.

Claim.—1st. The combination, with the coupling pins or bolts of a vehicle and side straps secured to the inner ends of said pins or bolts and to the body of the vehicle, of a flexible strap secured at each end to said side straps and means for drawing the center of said flexible strap rearwardly, substantially as and for the purpose set forth. 2nd. The combination, with the coupling-pins or bolts of a vehicle, of side straps secured to the same and to the body of the vehicle, of a curved connecting flexible strap and a chain cord lever or strap secured to the center of said curved flexible strap and extended to a point of ready access within the vehicle, substantially as specified. 3rd. The combination of the bolts D, straps E, brackets *f*, strap *g* and chain H, substantially as shown and described. 4th. The combination of the bolts D, grooved as shown, draw bars B, pins *d*, strap *g*, brackets *f*, *k*, roll J, chain H and handle I, substantially as shown and described. 5th. The combination of the draw bar B, pin *d*, straps E and bolt D having the groove *d*, substantially as shown and described.

No. 20,179. Wringing Machine. (*Essoreuse.*)

O. P. Gould, Elmira, N. Y., U.S., 13th September, 1884; 5 years.

Claim.—In a wringing machine, the combination, with the supporting frame of the lower roller C, the boxes I provided with the tubular portions J and suitable eyes into which the lower ends of the springs H are made to catch, the said boxes being secured rigidly to the supporting frame with the upper roller C provided with a movable box L, the bars O, O, the springs H and the set screw P, substantially as shown and described.

No. 20,180. Curtain Fixtures.

(*Montures des rideaux.*)

Geo. E. Swan, Beaver Dam, Wis., U.S., 13th September, 1884; 5 years.

Claim.—1st. As an improvement in securing curtains to their weight sticks, the combination, with the weight-stick and the curtain fabric having its end folded around the same and unsecured thereto, of a series of springs-clasps binding this folded end securely to the stick, said clasps being adapted to be removed when it is desired to disconnect the curtain from the stick, substantially as set forth. 2nd. The combination of the weight-stick the curtain fabric folded around the same with its edge within the fold, as set forth, and unsecured to the stick and the approximately U shaped securing-clasps formed with spring side portions, and having the outwardly-curved top ends whereby the fabric is bound to the stick, substantially as set forth. 3rd. The combination, of the weight-stick, the curtain fabric having its end folded around the stick to retain the same and unsecured to the stick and approximately U shaped securing clasps binding the folded end permanently to the stick and against any movement or disengagement, the stick and curtain being disconnected when the clasps are removed, substantially as and for the purpose set forth. 4th. As an improved article of manufacture, the herein described clasp for weight-sticks bent up into approximately U shaped with spring side portions, and having its ends curved outwardly, whereby the clasp may be pressed onto the stick or disengaged therefrom without engaging or injuring the curtain fabric, substantially as set forth.

No. 20,181. Snow Shovel. (*Pelle à Neige.*)

John Magee, London, Ont., 16th September, 1884; 5 years.

Claim.—1st. The strap plate E, constructed substantially as shown and described and for the purpose specified. 2nd. The combination of the blade A provided with a metallic point B, stock C, handle D, front strap plate E and back strap plate F, constructed substantially as shown and described and for the purpose specified.

No. 20,182. Carpet Sweepers.

(*Balayeuse de Tapis.*)

Asa J. Wood, St. Thomas, Ont., 16th September, 1884; 5 years.

Claim.—1st. The combination of the wire axle brush E, with the wood rollers H, H and tin boxes G, G, substantially as and for the purpose hereinbefore set forth. 2d. The combination of the rubber strips O, O, attached to and with the tin boxes G, G and the wood rollers H, H, also the construction of the tin boxes hinged to the frame A, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of single movable bearings C, C, with the driving wheels B, B and the springs K, K, substantially as and for the purpose hereinbefore set forth.

No. 20,183. Attachments for Squares for Builders and Joiners' Use. (*Appareil aux Equerres.*)

Andrew G. Olsen and John McFarlane, Duluth, Minn., U. S., 16th September, 1884; 5 years.

Claim.—1st. The within described attachment for a right angled square having graduations on its tongue and blade, the same consisting of a measuring bar or rule C formed with a fence *c* along one edge, provided with a fixed open ended jaw *d* at its one end, and an adjustable or sliding open ended jaw *h*, and means applied to said jaws for securing the attachment when set on the square, substantially as and for the purposes specified. 2nd. The longitudinally slotted measuring bar *c*, constructed with a fence *c* along its one edge, or side *a* and having different scales on its slotted face and fence side, in combination with the fixed open ended jaw *d* at the one end of its face, provided with a set screw *e*, and the longitudinally adjustable or sliding open ended jaw *h* having a set screw *g*, the whole being adapted for use in connection with a carpenter's and builder's or other like square, essentially as described.

No. 20,184. Desiccating Apparatus.

(*Dessicateur.*)

Henry Breer, De Witt, New York, U. S., 16th September, 1884; 5 years.

Claim.—1st. In combination with the combustion chamber C and horizontal rotary cylinder D, the segmental plates *p* reacting under the ends of the cylinder, and having on their inner edge the upward projecting flange *p*, substantially as described and shown for the purpose set forth. 2nd. The combination of the desiccating cylinder D provided with hollow trunnions T, the shaft S extended through said trunnions, and provided with spokes *a* and pulleys or gears connected to one of said trunnions and the shaft, substantially as described and shown. 3rd. In the combination of the desiccating cylinder D, and the furnace A and stack E at one and the same end of the cylinder, the combustion chamber C provided at the opposite end with the fire passage *e*, and having its lower portion divided into two longitudinal flues, one of which communicates at one end with the furnace, and at the opposite end with the other flue and the upper portion of the combustion chamber, separated from the lower portion thereof by horizontal partitions *b*, *b*, provided with an opening *c* over the forward end of the lower return flue, substantially as described and shown.

No. 20,185. Machine for Shocking Grain.

(*Machine à Engerber.*)

Duncan McMillan, Macomb, Ill., U. S., 16th September, 1884; 5 years.

Claim.—1st. In a machine for shocking grain, the combination of a dropper platform and a compressing box surrounding the same, of a compressing follower arranged to move in a horizontal plane within said box, as described for the purpose specified. 2nd. In a machine for shocking grain, the combination, substantially as herein described, of a dropper platform, a compressing box surrounding the same and having upwardly converging walls, and a compressing follower arranged to move horizontally within said box, for the purpose specified. 3rd. In a machine for shocking grain, the combination, substantially as herein described, of a dropper platform, a compressing box surrounding the same and having the rear wall adapted to swing outwardly, a compressing follower arranged to move horizontally within said box, and means, substantially as described, to simultaneously drop the platform and swing the rear wall of the box outwardly to discharge the shock, as described. 4th. In a machine for shocking grain, the combination, substantially as herein described, of a dropper platform, a compressing box where the shock is formed, a compressing follower arranged to move horizontally within the box to compress the shock, and means, substantially as described, to throw open the rear wall of the box and drop the platform while the shock is under compression, as described and for the purposes specified. 5th. In a machine for shocking grain, the combination, substantially as described, of a dropper platform, a compressing box having inwardly and upwardly swung outwardly, said box provided with a compressing follower arranged to move horizontally within the box, and means, substantially as described, to drop the platform and swing the rear wall of the box open, for the purpose specified.

No. 20,186. Belt Fastener. (*Joint de Courroie.*)

Eugene C. Smith, San Francisco, Cal., U. S., 16th September, 1884; 5 years.

Claim.—The plates B, B having their bent edges C, C cut out to form a hinge so as to fit together and be held in place by a pin, and provided with one or more rows of rivet holes *a*, substantially as and for the purpose herein described.

No. 20,187. Clasp. (*Croc.*)

Henry Binley, Albany, N. Y., U. S., 16th September, 1884; 5 years.

Claim.—1st. The clasp comprising the hook having a tongue *e* pivoted at one end *d* of said hook, and having a bifurcated or forked end, substantially as and for the purpose set forth. 2nd. In a clasp, the hook consisting of the body portion *a* having an upper bent or looped end *b* and a lower reversely bent end *d*, said hook having a

tongue *e* pivoted to the end *d* of said hook, and having a forked or bifurcated free end, substantially as and for the purpose set forth.

No. 20,188. Fire-Place Stove.

(Grille de Foyer.)

James D. Richards, Patriot, Ind., U. S., 16th September, 1884; 5 years.

Claim.—1st. The combination of the hot air exhauster C, the pipe F having openings *e* and leading from said chamber to register G, and the valve I arranged in said pipe and having rod *a* provided with disk *d* for closing said opening, perforated disk *p*, spring *c* and catch *f*, substantially as shown and described. 2nd. The combination, with the pipe F having opening *e* and register G, of the valve I having rod *a* and spring *c* arranged within said pipe, the disk *d* secured to one end of said rod for closing the opening *e*, the perforated disk *b* secured to the opposite end of said rod as a means for operating the valve, and the catch *f* for holding the valve open, substantially as shown and described. 3rd. The combination of the inner walls B having ribs J, and the movable roof-plate T supported on the said walls at the top, whereby a plate *h* may be supported on said ribs and against said roof-plate to form a rack for pots and kettles, substantially as shown and described.

No. 20,189. Combined Reflector and Globe for Lamp and Lantern. (Reflecteur et Globe Combinés pour Lampe et Lanterne.)

Benjamin D. Stevens, Burlington, Vt., U. S., 16th September, 1884; 5 years.

Claim. 1st. In an organized lamp or lantern, the metal globe A provided with side reflectors B, *b* and the glass *b*, all adapted to be removably attached to the lamp or lantern frame, substantially as and for the purposes set forth. 2nd. As a new article of manufacture, a metallic reflecting globe consisting of the body A, provided with the reflectors B *b* and the glass *b*, all as described and adapted to be used with a lamp or lantern frame, substantially as and for the purposes set forth.

No. 20,190. Lubricator. (Graisseur.)

Allen W. Swift, Elmira, N. Y., U. S., 16th September, 1884; 5 years.

Claim.—1st. In combination with the lubricant cup F, condenser E, supporting-arm A provided with the cavity C, education channel *a*, trap *b* and glass *d*, the valve *v* applied to the upper part of the cavity C, substantially in the manner described and shown, for the purpose set forth. 2nd. In combination with a lubricant cup provided with a transparent section and water-inlet near said section, a nozzle applied adjustably to said inlet and adapted to be set at a greater or less distance from the transparent portion of the cup, substantially as and for the purpose specified.

No. 20,191. Butter Tub. (Tinette.)

George Garnett, Bethany, Ont., 16th September, 1884; 5 years.

Claim.—1st. A cylindrical tapering butter tub or package, composed of two separable parts resting together, the inner part A of sheet tin and the outer part B of wood, as set forth. 2nd. The tin cover C having an annular packing D, in combination with a tub composed of two separable parts A and B, as described.

No. 20,192. Friction Clamp. (Crampon à Friction.)

Hugh Sells and Charles Millar, Toronto, Ont., 17th September, 1884; 5 years.

Claim.—1st. In combination with a strap or its equivalent, a roller C eccentrically pivoted between the jaws of a bracket E having a curved projection *a*, arranged substantially as and for the purpose specified. 2nd. In combination with a strap or its equivalent, a roller C provided with a handle *b*, and eccentrically pivoted between the jaws of a bracket E having a curved projection *a*, substantially as and for the purpose specified.

No. 20,193. Buckboard Waggon.

(Voiture à Planche.)

Johiel Jackson and Jeremiah Mason, Fort Atkinson, Wis., U. S., 17th September, 1884; 5 years.

Claim.—The arch-plate C having the body A secured upon it, in combination with the board D, bolts *d* and the tapering parts *b*, *b* composing the springs, substantially as set forth.

No. 20,194. Bag and Twine Holder.

(Porte-Sac et Porte-Ficelle.)

James H. Hunter, Three Runs (assignee of Edward I. Gilliland), Salt Lick, Penn., U. S., 17th September, 1884; 5 years

Claim.—1st. The combination, in a bag and twine holder, of the ring A provided with the pendent posts B which are slotted angularly at *F*, the bag wires C held by their hinging and point ends at the slots, and a twine holder G suspended from the ring A by hangers L, and the said ring A being suspended from a collar P provided with a swivel hook R, substantially as shown and described. 2nd. The ring A, made with an interior flange *a*, in combination with the posts B of bag wires, and the hangers L of the twine holder, substantially as shown and described. 3rd. The combination, with the posts B, slotted angularly at *F*, of the bag-wires C having hinging ends *c* and pivoted ends *e*, substantially as shown and described. 4th. The combination, with the ring A, made with plane faces, and the bag wires C arranged below and about parallel with the said plane faces of the ring, of numerals on the ring above the wires to indicate the sizes of the bags held on the wires, substantially as shown and described.

No. 20,195. Offal Dryer.

(Dessicateur des Rebutts de Viande.)

Joseph Spratt, Victoria, B. C., 17th September, 1884; 5 years.

Claim.—1st. In combination with rock-shaft J carrying a series of stirrers or scrapers M *i*, the semi-cylindrical trough A, constructed of double walls and provided with a cover G having doors H, H, and flues I, I, as set forth for the purpose described. 2nd. In combination with the trough A, provided with inlet piped outlet D, and constructed of double walls, the shaft J carrying a series of quadrant plates K provided with spiral springs N, boxes *o* and arms M having stirrers M *i*, as set forth for the purpose described. 3rd. The combination of the semi-cylindrical trough A, constructed of double walls, cover G having flues H, H, and shaft J provided with a series of radial arms M having stirrers M *i*, the whole constructed and arranged to operate as set forth.

No. 20,196. Ventilation of Houses and other Buildings. (Ventilateur.)

Robert S. Knight, Orford, Que., 17th September, 1884; 5 years.

Claim.—The arrangement for ventilation herein described, of the smoke-pipe A, casings D *i* and D with perforated cap E and one or more ventilating pipes F entering the air chamber D *i*, whereby heat from the smoke-pipe rarifies the air in the air-chamber and induces a current in the air pipes, the heated and vitiated air escaping to the outer atmosphere through perforations or openings in the cap E at the top of the casing, as set forth.

No. 20,197. Valve. (Soupape.)

Alexander G. Alexander, Detroit, Mich., U. S., 17th September, 1884; 5 years.

Claim.—1st. In a valve, the combination of the shell A having shoulder H, the movable discharge-tube D, packing-ring F, disk C and spring I, constructed and operating substantially as described. 2nd. The combination of the shell A having shoulders H and L, the movable discharge-tube D, packing-ring F, disk C, spring I and screw-plug B, said screw-plug B serving to securely hold the disk to its seat on the shoulder L, substantially as described.

No. 20,198. Children's Table Tray.

(Plateau pour Table d'enfant.)

Nathaniel D. Swift, Petrolia, Ont., 17th September, 1884; 5 years.

Claim.—1st. In a child's table-tray, the combination of the clamping device *c*, *c* and the pin or tray proper having at its upper edge a surrounding rim or flange provided with enlargements or arm-rests arranged on opposite sides of a concavity in said flange, substantially as and for the purpose set forth. 2nd. The tray, herein shown and described, consisting of the metal portion A surrounding frame B, and clamping devices *c*, *c*, the tray being formed with the wide corners *d*, *d*, substantially as described.

No. 20,199. Car Seal.

(Fermeture Scellée des Chars.)

Frederick G. Hunter, Moncton, Ont., N. B., 17th September, 1884; 5 years.

Claim.—The combination of the keeper B, with the metallic strip A, substantially as described and for the purpose specified.

No. 20,200. Horse Hay Carriers (or Forks).

(Élévateur à Foin.)

James W. Provan, Oshawa, Ont., 17th September, 1884; 5 years.

Claim.—1st. The combination of the frame A, with the jointed or hinged axles *e*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the frame A with the three arm lever H, lug H *i*, catch G and projection I *i*, substantially as and for the purpose hereinbefore described. 3rd. The combination of the bar L, pawl O, double lever P, cross pin K and spring Q, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the stop block *y*, with lever ratchet Y and guide frame W, W *i*, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the bar *m*, with the lever *c*, the connecting rod *r*, and the loop *z* with the fork head frame *a*, substantially as hereinbefore set forth.

No. 20,201. Washing Machine. (Laveuse.)

Robert J. Shannon, Glenburnie, Ont., 17th September, 1884; 5 years.

Claim.—1st. The triangular vertical sided box A having an opening at the top, provided with a cover F and hung by gudgeons H on a suitable stand or frame A to oscillate, as set forth. 2nd. The triangular vertical sided box *a*, provided with interior bars I, gudgeons H and handles G, and rimmed opening at top having a cover F, in combination with a frame or stand A, as set forth and operating as described.

No. 20,202. Brushing Apparatus for Sieves.

(Bluterie à brosse pour Epurateur à Gruaux.)

Frederick A. Price, Gresford, Denbigh, Wales, 17th September, 1884; 5 years.

Claim.—1st. In combination with an agitated sieve, a brush having oblique bristles resting against the sieve, substantially as set forth, whereby the motion of the sieve causes the brush to travel. 2nd. In combination with a reciprocating sieve, a brush supported in guides, substantially as described and shown, so that which ever way it travels its bristles shall remain in contact with the sieve and point in backward direction. 3rd. The combination of an agitated sieve for granular or pulverulent material, a brush resting against the said

sieve and having oblique bristles, whereby it is caused to travel by the agitation of the sieve, and a stationary guide or frame for causing the brush to travel back and forth lengthwise of the sieve. 4th. The combination, with a reciprocating sieve for sorting granular or other material, of the stationary guide or frame C, and the travelling brush B having oblique bristles in contact with the sieve, substantially as and for the purpose described. 5th. The combination, with a reciprocating sieve A and stationary guide or frame C, of the travelling brush B, with the bristles *b* set obliquely to the surface of the sieve and the guide pins D and E, substantially as described. 6th. The combination, with the agitated sieve and the stationary guide or frame, of the travelling brush consisting of the arms *b*₁, *b*₂, bristles *b* and the guide pins E and D, substantially as and for the purpose described.

No. 20,203. Distributor for Seeding Machine. (*Distributeur de Semoire.*)

Thomas D. Galloway, Oshawa, Ont., 17th September, 1884; 5 years.

Claim.—1st. A distributor for seeding machines consisting of the grain cup A B, distributor wheel E, and a disk D secured upon the longitudinally adjustable distributor shaft E, said disk rotating the distributor wheel E, but having independent sliding movement therein, a winged gauge G provided with tubular neck or flanged rim *g* fitting rotatively in a circular groove *d* and secured to the disk D by a plate F, screwed or rivetted to said disk. 2nd. The gauge G, consisting of a curved blade, the lower part of which is concentric to the distributor wheel, its lower edge allowing the grain to pass, the upper portion curved outward in a contrary direction terminating near the inner surface of the distributor wheel and allowing an overflow, said blade provided with means of attachment to the disk of a grain distributor. 3rd. The gauge G consisting of a blade curved to somewhat resemble an ogee and having integrally attached to its concentric portion a circular rim or tubular neck *g*, provided with a flanged edge *g*, adapted to be rotatively secured in an annular groove in the disk D. 4th. The gauge of a distributor having a tubular neck provided with flanged edge adapted to fit rotatively into an annular groove, and held therein by a plate in the disk, having longitudinal movement within and rotating the distributor wheel in a grain distributor of a seeding machine, all substantially as described and shown and for the purpose set forth.

No. 20,204. Whiffletree for Working Three Horses Abreast. (*Palonnier à Trois Chevaux de Front.*)

William Buck, Otonabee, Ont., 17th September, 1884; 5 years.

Claim.—1st. The combination of the traces 2 and 3 through the pulleys *c*, *c* for equalization of the draft, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the pulleys *c*, *c* and the division of the single whiffletrees B, B, with the attachment to the double tree A by the clevises D, D, substantially as and for the purpose hereinbefore set forth.

No. 20,205. Shaft Support.

(*Support de Timon.*)

James F. Pace, Simsboro, Louisiana, U. S., 17th September, 1884; 5 years.

Claim.—1st. A shaft support, made substantially as herein shown and described, and consisting of a bar pivoted to the front of the vehicle body or box and pressed upward by a spring, as set forth. 2nd. In a shaft-support, the combination, with a plate adapted to be fastened to the front of the vehicle body or box, of a fork or plate pivoted to the plate on the wagon-box, a spring for pressing the fork upward and of a bar held adjustably in the said fork or plate, substantially as herein shown and described. 3rd. In a shaft-support, the combination, with a plate adapted to be fastened on the front of the wagon-box, of a fork pivoted to the said plate, a bar held adjustably in the fork, a spring for pressing the fork upward and a notched plate on the cross-bar uniting the shafts, substantially as herein shown and described. 4th. In a shaft-support, the combination, with the plate A, of the fork E pivoted to the same, the spring G for pressing the fork upward, the serrated plates J held in the fork, the serrated bar M and suitable devices for clamping said bar held between the plates J, substantially as herein shown and described. 5th. In a shaft-support, the combination, with the plate A, of the fork E, the spring C, the serrated clamp-plates J, the screw K and the longitudinally slotted serrated bar M, substantially as herein shown and described. 6th. In a shaft support, the combination, with the plate A having a standard B, of the fork E pivoted to the plate A, spiral spring G passed under the fork E and having its end recessed in the plate A, substantially as herein shown and described. 7th. In a shaft-support, the combination, with the plate A, of a fork or bar pivoted to the same, and of a spiral spring passed under the fork or bar to press or swing it upwards, which spring has its ends secured in the plate H, substantially as herein shown and described. 8th. In a shaft-support, the combination, with the plate A having a recess D, of the fork E, the bolt F, the spring C, the clamp-plates J, the bar M having a hook N and the screw K, substantially as herein shown and described. 9th. In a shaft-support, the combination, with the plate A, of the fork E pivoted to the same, which fork has a bend E in each shank, the clamp-plates J held within the bends E, the longitudinally-slotted bar M, and of the screw K, substantially as herein shown and described.

No. 20,206. Sulky Plough. (*Charrue à Siège.*)

Cyrus Russ, Beamsville, Ont., 18th September, 1884; 5 years.

Claim.—1st. The adjustable crank axle, consisting of the beam A having legs *a* and slides D bedded in blocks R, provided with studs for the wheels W and spur racks R₁, the frame F secured to the slides D and carrying at each side a quadrant with locking lever L and segment S, said quadrant gearing into the rack R₁, also the locking lever L with quadrant pulley Q having chain C attached to carry the

bail E by the clip E₁ and staple *e*, and having a front wheel P₁ carried on adjustable rack slide and controlled by the locking lever M by means of the pinion O secured upon the rod N journaled to the plough beam. 2nd. The combination of the beam A having legs *a* and dovetailed slides D secured thereto and bedded in the block R having the wheels W journaled thereon, and forming an adjustable upwardly arched crank axle carrying the frame F. 3rd. The combination of the frame F, and the side blocks R having racks R₁ meshing in spur quadrants Q, provided with locking levers L pivoted to said frame. 4th. The adjustable crank-axle portion A D, in combination with the bail E pivoted thereon and supported by a chain controlled by the lever device L and pulley Q, said bail supporting the plough. 5th. The front wheel adjusting device of rack slide P₂ bedded in block P₃, the shaft N carried on the plough beam and carrying pinion O and having locking lever M journaled in segment K, all substantially as shown and described and for the purpose set forth.

No. 20,207. Tray or Case for Heating Sad Irons. (*Etui à Réchauffer les Fers à Repasser.*)

James Cox, Brantford, Ont., 18th September, 1884; 5 years.

Claim.—The cover C attached to flange B by hinge D, substantially as and for the purpose set forth.

No. 20,208. Machine for Binding Grain. (*Lieuse à Grain.*)

John Forsyth, London, Ont., 18th September, 1884; 5 years.

Claim.—1st. Tying the knot without a tucker by the combination of the peculiar shape of the opening *c* in the stripper C, as shown in Figure 2, in connection with the diamond shaped point *c* of the stripper C, as shown in figures 2 and 3, and with cam F, as shown in figure 1 of the drawings. 2nd. The cam F for moving forward the stripper C and thereby covering the twine with point *c* of the stripper C after it is laid in position on the knotting jaw, as shown in figure 5, and before the hook has begun to revolve, making it impossible for the twine to slip off the point of the hook of knotting jaw. 3rd. The peculiar half circular shape of the opening *c* in the stripper C, as shown in figure 2. 4th. The diamond shaped point *c* of the stripper C, as shown in Figure 2, circling or inclining inwards from the extreme outside to the opening *c* in the stripper C, also the incline from the end of stripper C in the direction of fulcrum D to a point, as shown in figure 3, thus forming the diamond point hereinbefore referred to the inclines in figures 2 and 3 guiding the twine into the opening *c* and th's with the movement of the stripper C forward towards the point of knotting hook H bears the twine down on the knotting jaw holding it firm while the knotting hook H makes the first quarter turn. 5th. The cam *b*1 for closing the knotting j. w. as shown in Figures 7 and 9, instead of a spring with cam attachment. 6th. The cam *b*2 for holding the knotting jaw in proper position when the jaw roller *h* is not in the roadway of cam *b*1 as shown in figure 8. 7th. The circular shaped *u*-bedded point of the knotting jaw hook *h*, and also the recess *h*2 in the knotting hook H for the purpose of keeping the jaw closed down after the twine is stripped off the point of hook H, and still held by the point *h*1 until the end is drawn through and forming a round knot.

No. 20,209. Smoothing Iron.

(*Fer à Repasser.*)

Patrick F. Ratchford, Ross Township, Ont., 18th September, 1884; 5 years.

Claim.—The combination of a chambered or hollow base B, arranged to connect with a lamp burner, and provided with a neck portion *d* which protrudes into the chamber of the smoothing iron, substantially as and for the purpose set forth.

No. 20,210. Bandage to be used by surgeons and medical Practitioners. (*Bandage à l'usage des médecins.*)

Samuel Perrin, Lindsay, Ont., 18th September, 1884; 5 years.

Claim.—The use of the perforated bandages of suitable material, as and for the purposes hereinbefore set forth.

No. 20,211. Seeding Machine. (*Semoire.*)

Thomas D. Galloway, Oshawa, Ont., 18th September, 1884; 5 years.

Claim.—1st. The combination of a seeder frame formed of rolled sectional bar, with bracket consisting of the foot A adapted to be bolted or riveted to the web of the frame, and carrying a downwardly and transversely projecting hub I provided with an eye to receive the axle K and split at its lower extended side to form lugs *i* having the bolt holes transversely to the axle, and adapted to be drawn together and tightened upon the axle by a bolt or screw J. 2nd. A bracket consisting of a partially split hub J, provided with an eye to receive the axle K and having the portion on each side of the split extended to form lugs *i*, adapted to be tightened upon the axle by a bolt J to form lugs *i*, adapted to be tightened upon the axle, and provided with passing through the same transversely to the axle, and provided with a flat foot H adapted to be secured by bolts or rivets to and combined with main frame of a seeder, all substantially as described and shown and for the purpose set forth.

No. 20,212. Washing Machine. (*Laveuse.*)

Samuel L. Wagener, Billings Bridge, Ont., 18th September, 1884; 5 years.

Claim.—1st. The bars C, C₁ having bevelled or inclined sides and two half rounds, as set forth. 2nd. The bars C, C₁ set at graduated distances apart, as set forth. 3rd. The suds box A having a high end and board J, as set forth for the purpose described. 4th. The arms H, H, in combination with the rubber journal G and sides of the suds box, as set forth. 5th. The platform N, arranged as set forth, in combination with the legs of the machine, as set forth.

No. 20,213. Apparatus for Preventing accidents and Damage or wrecking of car from collisions of Trains.

(Appareil pour éviter les accidents sur les railroutes.)

James B. Stevenson, Montreal, Que., 18th September 1884; 5 years.

Claim.—1st. In a railway car, the use of an air chamber wherein the air is compressed by a plunger to form a cushion to receive the shock of a collision with other bodies, substantially as described. 2nd. The combination, with a railway car, of the cylinder B, piston E, rod F and spring H, constructed and arranged substantially as described. 3rd. The combination, with a railway car, of the cylinder B, valve I, piston E, rod F and spring H, constructed and arranged substantially as shown and described.

No. 20,214. Devices for keeping wrist Pins and Journals Cool. (Appareil pour tenir à froid les essieux et les tourillons.)

Theodore S. Wilkin, Milwaukee, Wis., U.S., 18th September, 1884; 5 years.

Claim.—1st. A crank pin provided with a continuous passage connected with a water inlet and outlet, whereby water is permitted to flow continuously through the passage to cool the crank pin while in action. 2nd. In a journal or crank pin, the combination of an inlet tube, an outlet passage surrounding and communicating with said tube, and supply and exhaust pipes communicating respectively with said inlet and outlet tubes. 3rd. In combination with a crank pin having a water chamber or passage in it, a supply and discharge pipe having a double waterway within it, one passage communicating with a water supply pipe and extending into the water chamber, the other connecting with the water chamber and with a discharge pipe, the compound supply and discharge pipe, being connected by swivel joints to the supply and discharge pipes concentrically with the axis of the crank. 4th. The combination, with a bent pipe having a centered end connected to the water supply, and a chambered wrist pin to which the other end of the pipe is attached, of a hollow journal having lateral passages communicating with passages of the crank arm and wrist pin, whereby a current of water is carried through the wrist pin and crank into the journal and discharged therefrom, substantially as specified. 5th. The combination, with the hollow journal, perforated crank, and chambered wrist pin, of the water pipes in the wrist pin around the supply pipe and in the hollow journal, substantially as specified.

No. 20,215. Hydraulic Lift Floating Docks, Pontons and other Floating Structures &c. (Monte-charge Hydraulique de bateaux, pontons &c.)

John Standfield, Westminster, Eng., 18th September, 1884; 5 years.

Claim.—1st. I claim controlling the horizontality of floating docks and other floating structures by means of cantilevers attached to the shore or to floating structures, substantially as and for the purpose hereinbefore set forth. 2nd. I claim indicating the strain on the cantilevers by means of weights, springs and dynamometers substantially as and for the purpose hereinbefore set forth. 3rd. I claim elevating the ends of the cantilevers by means of a series of screws, hydraulic rams, weights and pontoons, substantially as and for the purpose hereinbefore set forth. 4th. I claim the maintaining the horizontality of submerged or partially submerged structures by means of weights, and chains, substantially as and for the purpose hereinbefore set forth. 5th. I claim the automatic operation of the outlet and inlet valves by the oscillation of the dock itself, substantially as and for the purpose hereinbefore set forth. 6th. I claim the conjoint arrangements of bell crank, parallel booms and wrights, and lifting links for maintaining the horizontality of the dock, substantially as and for the purpose hereinbefore set forth. 7th. I claim the use of folding and sliding sides to floating docks, substantially as and for the purpose hereinbefore set forth. 8th. I claim an arrangement for pumping floating docks and pontoons from shore by means of pipes, substantially as and for the purpose hereinbefore set forth. 9th. I claim the maintaining horizontal or vertical position of floating structures, lifts ascending or descending, platforms or other structures by means of chains, ropes, cables and pulleys, substantially as and for the purpose hereinbefore set forth. 10th. I claim the use of centring such, and bilge carriages for centring and shoring vessels on docks, substantially as and for the purpose hereinbefore set forth.

No. 20,216. Spring Bed Bottom.

(Fond de Lit à Ressorts.)

Charles M. Burk, Colborne, Ont., 18th September, 1884; 5 years.

Claim.—1st. The combination of the bottom frame composed of crossed wooden slats A, B, spirally coiled springs C and rigid wooden frame D bordering around the springs collectively, and straining wires G connecting the springs, as set forth. 2nd. In combination with the crossed slat frame A B and springs C, the frame D having tubular elbows F at the corners, as set forth.

No. 20,217. Hay Tedder. (Faneuse.)

George A. Woodford, Detroit, Mich, U.S., 18th September, 1884; 5 years.

Claim.—1st. In a hay tedder and in combination with the multiple crank shaft thereof and with the arms which carry the fork, said arms being bifurcated at their upper ends, the guide rod E, substantially as and for the purpose specified. 2nd. In a hay tedder a solid revolving axle A, a spur wheel G secured thereon, the rock shaft H having the eccentric bearing J, a pinion H rotating on said bearing J, and adapted to engage with said wheel G, the spur wheel I, also

carried by said eccentric bearing J; and the crank shaft K provided with the pinion J engaging with said wheel I, substantially as and for the purposes specified. 3rd. In a hay tedder, the combination of the crank shaft K provided with a pinion, the driving axle A having a gear wheel, the eccentric J, the intermediate gearing carried by said eccentric, the lever N and connecting rod, substantially as and for the purposes described. 4th. In a hay tedder, the combination with the draft frame R, main frame D, fork arms and driving mechanism supported by said main frame, of the notched arm W, its lower end pivoted in a box W attached to the frame D and its upper end terminating in a hand-hole W₁, slotted guide-plate V secured to the frame R, bolt e passing through the rear end of said slot ed plate and a spring W₂ secured within said box and constructed to bear against said arm W, substantially as and for the purpose specified.

No. 20,218. Apparatus for Distributing and Elevating Grain and other Cereals and Granular and Pulverized Materials. (Distributeur et Elevateur des Grains, &c.)

Peter Evans, Liverpool, Eng., 19th September, 1884; 5 years.

Claim.—1st. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a mouth A and nozzle B, substantially as set forth. 2nd. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a mouth A and nozzle B, and mechanism provided for adjustment relatively to each other, whereby different sized grains may be distributed or elevated, substantially as set forth. 3rd. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a mouth A, nozzle B, pipe B, adjustable mechanism C and flexible pipe D, substantially as set forth. 4th. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a parallel mouth A, nozzle B, pipe B, adjustable mechanism C and flexible pipe D, substantially as set forth. 5th. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a bell-mouth A, nozzle B, pipe B, adjustable mechanism C and flexible pipe D, substantially as set forth. 6th. In apparatus for distributing and elevating grain and other granular and pulverized materials, the combination of a tapered mouth-piece A provided with openings d, nozzle B, adjustable mechanism C, pipe B and flexible tube D, substantially as set forth.

No. 20,219. Piston for Engine.

(Piston de Machine à Vapeur.)

George Dickmann, New York, U.S., 19th September, 1884; 5 years.

Claim.—1st. The combination of guide-piece a, with tightening-pieces b composed of overlapping sections and coupled to the guide-piece to constitute a piston, substantially as specified. 2nd. The combination of concave guide-piece a having lug c, with curved tightening-piece b having c' and composed of overlapping sections d, d', substantially as specified. 3rd. The combination of guide-pieces a, with the curved tightening-pieces b composed of sections d, d' coupled to said guide-piece and with piston-rod g coupled to section d, substantially as herein shown and described. 4th. The combination of guide-piece a, with curved sectional tightening-piece b, elastic bands e and piston-rod g, substantially as specified. 5th. The combination of guide-piece a, with curved tightening-pieces b composed of overlapping sections d, d' joined by elastic bands e and having cylindrical ends f, substantially as specified. 6th. As a new article of manufacture, a metallic piston having curved opposite faces and tapering edges whereby elasticity is imparted thereto, substantially as described. 7th. A metallic piston having curved opposite faces and tapering edges presenting flat or cylindrical surfaces, substantially as described.

No. 20,220. Art or Process and Composition for Making Artificial Stone, &c. (Procédé pour Fabriquer la Pierre Artificielle.)

James H. Trickey, Hamilton, Ont., 19th September, 1884; 5 years.

Claim.—1st. Artificial stone composed of plaster of Paris, glycerine and water, and after becoming set and dried being boiled in a solution of brimstone, substantially as specified. 2nd. A composition of artificial stone composed of plaster of Paris, marble or stone dust, glycerine and water, and after becoming set and dried being boiled in a solution of brimstone and boiled linseed oil, or equivalent oil, substantially as specified. 3rd. The art or process of hardening plaster of Paris, Portland cement, or similar composition, soft stone, &c., wood, by boiling them in a solution of brimstone and boiled linseed or equivalent oil, substantially as specified.

No. 20,221. Creamer. (Boite à Lait.)

William Howes, Sussex, N. B., 19th September, 1884; 5 years.

Claim.—1st. The can A having inverted conical bottom B, with uniform downward slope from the side towards the centre and terminating in an opening, and downward projecting nozzle b provided with india rubber stopper C. 2nd. The inverted conical bottom B having central opening with nozzle b and provided with stopper C, in combination with the can A having ventilated base A₁, glass panel gauge D, handle E, and provided with ventilated lid or cover F, all substantially as shown and described and for the purpose set forth.

No. 20,222. Device for Securing Fish Plates to the Joints of Railroad Rails. (Appareil aux Eclisses des Joints des Rails de Chemin de Fer.)

James M. Burke, Dublin, Ireland, 19th September, 1884; 5 years.

Claim.—In devices for securing fish plates to the joints of railroad rails, two or more wedges which are provided each with one or

more open mortises on the under edges thereof and half channels I horizontally on their inner sides, with two fish plates one of which is bevelled to form an incline against the wedges E and is provided with a half channel I or presents, by means of the wedge-clamp F, a like bevelled surface and half channel to the wedges E, in combination with the spring keys H whose opposite sides respectively have bearings in the respective half channels I, L, as and for the purpose hereinbefore specified.

No. 30,223. Churn. (*Baratte*.)

Asa L. Burke, Toronto, Ont., 19th September, 1884; 5 years.

Claim.—1st. The vertically-reciprocating cross-head E, m fixed to the dash-rod F and connected to the lever L by the vertical rods M, in combination with the stationary grooved blocks P, arranged substantially as and for the purpose specified. 2nd. The churn body C resting on the vertically-reciprocating base-plate D between the side cleats a, the said base being held to the standards B, as specified, in combination with the guide block P, substantially as and for the purpose specified. 3rd. In a churn, in which the body of the churn derives a reciprocating motion from the same power that operates the dash, the vertically reciprocating base-plate D held to the standards B, as specified, in combination with the vertical rods M working in the grooves in the blocks P, substantially as and for the purpose specified. 4th. In a churn, in which the body moves vertically between the standards B, and the dash is operated by the cross-head E attached to the dash-rods F, the combination of the springs Q located between the standards and cross-head, substantially as and for the purpose specified. 5th. In a churn, in which the body of the churn and dash both work reciprocally between the standards B secured to the main frame as specified, the combination of a platform R attached to the frame and arranged to support the operator, substantially as and for the purpose specified. 6th. In a churn, in which the body of the churn and dash both work reciprocally through the rocking motion of the levers G and L, which derive the motion from a motor common to both, a base-plate D arranged to carry the churn C and connected to the lever G, in combination with a device arranged to act on the lever L in order to hold the base-plate D down when the weight of the churn is removed.

No. 20,224. Converting Furnace.

(*Fourneau à Cémenter*.)

Pierre Manhe's, Lyon, France, 19th September, 1884; 5 years.

Claim.—A Bessemer converter or similar furnace provided with tuyeres or air passages arranged above the space to be occupied by the metal, and in combination with an air-belt provided with orifices opposite the tuyeres, substantially as and for the purposes specified.

No. 20,225. Sleigh Shoe.

(*Sabot de Traîneau*.)

Henry A. Morrell, Pittsfield, Mass., U. S., 19th September, 1884; 5 years.

Claim. 1st. As a new article of manufacture, a sled runner shoe provided with longitudinal ribs c along the lower side or bottom of the shoe, flat spaces being left on either side of said ridges, as set forth. 2nd. As a new article of manufacture, a sled runner shoe provided with longitudinal grooves b on its upper side, the convex sides of the grooves forming the ridges c on the underside of the shoe, flat spaces being left on either sides of said grooves and ridges, as set forth.

No. 20,226. Grate Bars. (*Barres des Grilles*.)

William Solt, Freeland, Penn., U. S., 19th September, 1884; 5 years.

Claim.—1st. The channeled and perforated grate bar A provided with end plates C which have seats D, and the mortises and laterally extending shoulders at their sides, in combination with the detachable finger sections having their transverse bars provided with tenons to enter the mortises, as set forth. 2nd. The combination, with the channeled and perforated grate bar A having the middle finger sections O cast therewith, of the sections carrying a section of the said middle finger, as set forth.

No. 20,227. Lantern. (*Lanterne*.)

Joseph B. Stetson, Lincoln, Maine, U. S., 19th September, 1884; 5 years.

Claim.—1st. In a lantern, the combination, with a lifting device, whereby the globe can be raised from the burner, of a globe supporting plate disk or ring attached to the lifting device and capable of being tilted or inclined, substantially as set forth. 2nd. In a lantern, the combination, with a globe lifting device having side wires H, of a globe supporting plate F detachably secured to the lower ends of said wires by means of swivelling connections, substantially as set forth. 3rd. In a lantern, the combination, with a globe lifting device having side wires H provided with hooks h, of the globe supporting plate F provided with ears k, substantially as set forth. 4th. In a lantern, the combination, with a globe supporting frame adapted to be raised from the burner and having side wires or rods, of a frictional locking device secured to the tubes and engaging with said wires, substantially as set forth. 5th. In a lantern, the combination, with a tubular frame, of a movable globe supporting frame composed of a plate or disk supporting the lower end of the globe, a bell and catch supporting the upper end of the globe side wires or rods connecting the devices, whereby the upper and lower ends of the globe are supported and loops secured to the tubular frame and bearing against the side wires or rods of the movable frame, substantially as set forth. 6th. The combination, with the tubular frame provided with the loop N having a stud n, of the movable bell D and slotted spring catch M secured thereto, substantially as set forth.

No. 20,228. Heel Finishing Machine.

(*Machine à Finir les Talons*.)

James L. Lord, Lynn, Mass., U. S., 19th September, 1884; 5 years.

Claim.—1st. The improved heel-seat finishing trimmer, consisting of the rotary cutter a having the moulded part 2 adapted to finish a portion of the heel-edge below the heel-seat, and the moulded part 3 adapted to co-operate with the part 2 in forming the heel-seat, the thin-edged guard f adapted to protect the upper and the guard g flush with and forming a continuation of the contour of the moulded portion 2 of the cutter and adapted to bear against the heel-edge between the heel-seat and top lift and prevent the adjoining portion 2 of the cutter from entering the edge of the heel, as set forth. 2nd. The combination of the rotary heel-seat trimmer composed of the moulded parts 2, 3, the guard g mounted loosely on the arbor of the trimmer forming a continuation of the contour of the moulded part 2 and adapted to bear against the edge of the wheel below the portion acted on by said part 2, and means, substantially as described, for preventing said guard from rotating with the cutter, whereby the operator is enabled to hold the heel against the movement of the rotating trimmer, as set forth. 3rd. The top-lift finishing device, consisting of the moulded circular body having teeth adapted to trim, the heel near the corner of the top lift, a narrow, uninterrupted burnishing portion at the inner ends of the teeth, and the guard-plate forming a rest for the face of the top-lift and operating in connection with said burnishing portion to finish the corner of the top-lift, as set forth. 4th. The improved heel-finishing device, consisting of the moulded trimmer a adapted to form the heel-seat, the guards, whereby the central portion of the heel-edge and the upper are protected and the body m and plate f, formed as described, to trim and burnish the top-lift, as set forth.

No. 20,229. Letter File. (*Liasse à Lettres*.)

W. H. Gilman, Boston, Mass., U. S., 19th September, 1884; 5 years.

Claim.—1st. A letter file composed of a series of superposed sheets or leaves, of substantially uniform width, secured at their inner edges to a common base and free at their outer edges, and arranged, as described, to form a series of partially overlapping pockets or receptacles, as set forth. 2nd. A letter file composed of a series of superposed sheets or leaves, of substantially uniform width, each secured at one edge to a common base, each leaf secured at a point farther from a given end of said base than the succeeding leaf, whereby the free ends of all the leaves are exposed, as set forth. 3rd. A box or case adapted to receive one or more letter files, and provided with a cover adapted to rest directly on the files in the box. 4th. A box or case adapted to receive one or more letter files, and provided with a cover adapted to rest directly on the files in the box, and connected to the box by adjustable devices, whereby the cover may be adjusted to the thickness of the contents of the box, as set forth. 5th. The box provided with a cover pivoted thereto by adjustable devices, and having a series of notches adapted to receive a catch on the free edge of the cover, as set forth. 6th. The file holding box or case hinged or pivoted to a wall or other support, combined with devices, substantially as described, for supporting said box or case in an operative position, and a holding device to retain said box against the wall. 7th. A letter file composed of superposed sheets and having on its cover one or more initial letters, and on the exposed edges of its sheets the letters of the alphabet arranged in regular order, as shown. 8th. The improved system of filing, consisting in providing each file with an initial letter or letters, and the leaves thereof with letters corresponding to a given selected letter of the name after the initial letter, as set forth.

No. 20,230. Means or Apparatus for Coupling and Uncoupling Railway and other Vehicles. (*Appareil aux Accoupleurs de Wagons*.)

Edmond Richmond, Leicester, Eng., 19th September, 1884; 5 years.

Claim.—1st. An automatic coupling apparatus for railway and other vehicles consisting of a hook and a link, the one fixed and the other arranged to slide over it and to fall into its place by gravity, the movable part being pivoted to a drawhead provided with means to hold the said part in the proper position for the engagement to take place, and to prevent it being raised too high during the coupling and uncoupling operations, substantially as described. 2nd. In an automatic coupling apparatus, a drawhead e provided with edges or projections i, j, or their equivalent, in combination with a pivot-link a or hook c, substantially as hereinbefore described for the purpose specified. 3rd. In an automatic coupling apparatus, the combination of a hook and a link, one of which is pivoted in a drawhead provided with means to hold the said part in the proper position for the engagement to take place and to prevent its being raised too high during the coupling and uncoupling operations, with means for raising the said pivoted part to effect the uncoupling, substantially as described. 4th. The combination of the pivot d hook a, drawhead e, rod k and handle n, substantially as hereinbefore described for the purpose set forth. 5th. In an automatic coupling apparatus, the combination, with a hook and link, of a guard to prevent accidental uncoupling, and means for throwing it out of action when required, substantially as described and illustrated. 6th. The combination with the link a and hook e, of the guard g, substantially as described for the purpose specified. 7th. The combination of link a, hook e, drawhead e, rod k, handle n and guard o, substantially as described for the purposes specified.

No. 20,231. Drag Saw. (*Chariot d'Une Scierie*.)

Francis A. Strong, Colebrook, Wisc., U. S., 19th September, 1884; 15 years.

Claim.—1st. In a drag-saw, the herein-described frame consisting of a base having a pair of uprights suitably braced to the said case and constructed of flattened tubes of sheet metal, a pair of levers pivoted to the upper ends of the said uprights and having teeth or

prongs at their front ends, and a brace connecting the said levers, substantially as set forth. 2nd. The combination, with a frame consisting of a base having a pair of uprights provided at their upper ends with levers having teeth or joints at their outer ends, of a operating lever pivoted adjustably between the said uprights and having at its lower end a pivoted saw weighted at its outer end, and having at its upper end a pivoted operating handle, substantially as set forth. 3rd. The combination, with the frame having the herein-described tubular uprights, of the operating lever provided on its sides with anti-friction discs perforated for the reception of the pivoting pin, substantially as set forth. 4th. The combination, with the herein-described drag saw, of the fire-wood attachment comprising a pair of uprights adapted to receive the teeth at the front ends of the securing levers, a saw-horse secured adjoining one of the said uprights, a lever, a chain having its ends secured respectively to the said lever and to a point at or near the fulcrum of the said lever, and a slotted guide for the free end of the latter, substantially as set forth.

No. 20,232. Washing Machine (*Laveuse*.)

Ella Goodwin, Chicago, Ill., U.S., 19th September, 1884; 5 years.

Claim.—1st. A washing machine consisting of a cylindrical vessel, as A, having rubbers B, C whose facing surfaces are made highest in the centre and gradually sloping to the circumference, and corrugated, said rubber C being connected to the lid E supporting the operating shaft and mechanism, all arranged substantially as and for the purpose specified. 2nd. In a washing machine, the circular rubbers B, C having their facing surfaces highest in the centre and gradually sloping to the circumference, in combination with a circular vessel and mechanism for operating the same, substantially as and for the purpose specified. 3rd. In a washing machine, circular rubbers B, C having an elevated centre and gradually sloping to the circumference, the facing surfaces being laid off in sectors having corrugations nearly or about parallel with one of the radii, substantially as and for the purpose specified.

No. 20,233. Harness Buckle. (*Boucle de Harnais*.)

James D. Robertson, Salisbury, Mass., U.S., 19th September, 1884; 5 years.

Claim.—1st. As an improvement on buckles formed with a plate *d*, a flange *g* formed upon the adjacent bar *c* and extending partly over said plate to produce a recess to receive and secure the end of strap *l*, substantially as specified. 2nd. As an improvement on buckles formed with plate *d* to receive strap *l*, the securing studs *f, f*, and side flanges *e, e* formed as an integral part of said plate and adapted and arranged to engage and secure the strap in position, substantially as specified. 3rd. In combination with a buckle formed with plate *d* adapted to receive strap *l*, a tongue or bar *h* pivoted to said plate and arranged to overlay and secure said strap in position on the plate, substantially as specified. 4th. In a buckle, the combination of bar or tongue *h* arranged to secure strap *l* in position, and tongue *j* arranged to secure strap *n* and to confine the free end of bar *h* when closed upon strap *l*, substantially as specified. 5th. The combination of the buckle frame or body formed with bars *a, b, b* and *c*, with plate *d* having ribs *e, e*, and studs *f, f*, and bar *h* pivoted to plate *d* and tongue *j* pivoted to bar *a*, all substantially as specified.

No. 20,234. Clothes Drying Apparatus.

(*Appareil à Sécher le Linge*.)

Peter Lockie, Rochester, N.Y., U.S., 19th September, 1884; 5 years.

Claim.—1st. As an apparatus for drying clothes, any number of reels, each pivoted on a spindle, such reels being fitted with radiating arms capable of retaining a clothes line, substantially as shown and for the purpose specified. 2nd. In combination with the reels or hubs and the posts aforesaid, any number of radiating arms, such arms being notched and rounded, as shown and for the purpose specified.

No. 20,235. Machine for Numbering Paper.

(*Machine à Paginer ou Numérotier le Papier*.)

John R. Carter, Niagara Falls, N.Y., U.S., 19th September, 1884; 5 years.

Claim.—1st. In a printing machine, in which the web or sheet of paper is carried between two wheels or disks, having embossed or otherwise marked on their peripheries numerals or other signs, mechanism for imparting to the said wheels an intermittent motion, in combination with the platens driven by mechanism arranged to bring the paper passing between the wheels against the peripheries of the said wheels, substantially as and for the purpose specified. 2nd. The wheels A, marked as specified, and fastened to the shaft C having keyed to it the spur-wheel E, the wheels B, also marked as specified and keyed to the shaft V on which the spur-wheel F is fastened, which spur-wheel gears with the spur-wheel E, in combination with the arm G loosely journaled on the shaft D and having the dog H attached to it with the rod I operated by the crank J, the whole being arranged and operated, substantially as and for the purpose specified. 3rd. The arm G loosely journaled on the shaft D which is connected to the shaft C, as specified, the dog H pivoted on the arm G and engaging with the wheel E, in combination with the spring-plate K and pawl or dog L, arranged substantially as and for the purpose specified. 4th. The platens M fastened respectively to the shafts N and O and located, substantially as specified, the arm P connected to the shaft N and driven by the rod Q, in combination with the toothed collar *g* fitting loosely on the shaft O and meshing with the toothed boss P fastened to the shaft N, the lug *r* extending from the collar *g* between the jaws *r*, substantially as and for the purpose specified. 5th. The rod Q driving a longitudinal reciprocating motion from some moving part of the machine and connected to the arm P by the jamb-nuts *u*, the toothed boss P arranged to mesh with a toothed collar *g* having a lug *t* extending between the jaws *r*, in combination with the set screws *s*, arranged substantially as and for the purpose specified. 6th. In a printing machine in which the web or sheet of paper is carried past the periphery of a wheel or disc having nume-

ral or other signs embossed or otherwise marked on it, the combination of a platen carried on the end of the arm, the fixed or pivoted end of which is located outside of the periphery of the wheel. 7th. In a printing machine, in which the web or sheet of paper is carried between two printing wheels not opposite to each other, the combination of platens one opposite to each other and located on the opposite side of the paper on which the respective wheel is situated and carried on the end of an arm, the pivoted end of which is located outside of the wheels. 8th. The spur-wheel F keyed to the shaft D and arranged to impart motion to the printing wheels A and B, in combination with the numerals or other signs on the face of the wheel F, arranged with the dog L to indicate the position of the numbers on the wheels A and B. 9th. The spur-wheels E and F meshing with each other and arranged to impart motion to the printing wheels A and B and their inking mechanism, in combination with the arm H through which motion is conveyed to the wheels E and F, but connected therewith in such a manner that the said wheels E and F may be moved independent of the arm and its connections, substantially as and for the purpose specified.

No. 20,236. Side Spring Carriage.

(*Voiture avec Ressorts de Côté*.)

Antipas P. Marshall, Lancaster, N. H., U.S., 19th September, 1884; 5 years.

Claim.—In a side spring vehicle, the combination, with the shackles C bolted to the cross-bars D of the frame and provided with eyes C₁ and link B provided with cross-bars *b, b* of the lower leaf A, of the side spring provided with the widened ends *a* of equal thickness throughout and bent to form a single continuous eye *a* at each end of the leaf, to receive the cross-bars *b* of the links, the eye of the shackle being of the same width as the eye of the leaf A, substantially as shown and described, whereby an increased bearing for the spring on the link and shackle is produced and the sidewise swing of the body of the vehicle is prevented, as set forth.

No. 20,237. Lock. (*Serrure*.)

Frank A. Guthrie, Gallipolis, Ohio, U.S., 21st September, 1884; 5 years.

Claim.—1st. The combination of the casing having stud T, the latch-bolt having slot S and flange W and the pivoted latch-lever U having post V, as set forth. 2nd. The combination of the casing, the shot-bolt having shoulders Q, the tumbler I and the guard lever P pivoted in the casing near the front end of the latter so as to be capable of engaging the shoulder Q of the shot-bolt, and having forked rear end and adapted to be engaged and operated by the bit of the key, substantially as herein set forth.

No. 20,238. Letter Box Connection.

(*Liaison de Boîte à Lettres*.)

James G. Cutter, Rochester, N. Y., U.S., 21st September, 1884; 5 years.

Claim.—1st. In combination with a building of two or more stories, a mail-receptacle consisting of a box or receptacle located in a lower story, and a conductor extending thence upward to a higher story and there provided with inlet opening. 2nd. In combination with a building of two or more stories, a box or receptacle located in a lower story and a tube or conductor extending thence upward to one or more upper stories, said conductor being provided on the respective floors with openings for the admission of letters. 3rd. In a building of two or more stories, an upright tube or letter conductor connecting two or more of said stories provided with inlet-openings of a size smaller than the sectional area of the tube, whereby the lodgment of letters and their interference with each other are avoided. 4th. In a building of two or more stories, a sealed box or receptacle located upon a lower story combined with a tube or conductor extending thence upward to the higher stories and there provided with inlet-openings, whereby letters may be delivered from the different stories into the receptacle below and there confined and protected. 5th. In an upright mail-conducting tube arranged and provided with inlet-openings, as described, the ventilating openings therein, as and for the purpose described. 6th. In a building a two or more stories, a series of letter-conductors extending to the different stories and terminating at a common delivery-point in a lower story said conductors being provided with inlet-openings in the respective stories, substantially as described. 7th. In a mail-conducting tube, substantially as described and shown, the combination of an inlet-opening and a glazed opening thereunder, as and for the purpose described. 8th. In combination with a mail-conducting tube or passage connecting two or more stories of a building and provided with inlet-openings in the respective stories, an internal guard G, substantially as described, located adjacent to the inlet-opening, whereby a person upon one floor is prevented from intercepting letters in their descent from a higher floor.

No. 20,239. Machine for Preparing Hoops.

(*Machine à Préparer les Cercles*.)

Henry F. Campbell, Concord, N. H., U.S., 21st September, 1884; 5 years.

Claim.—1st. In a machine for sawing poles, a band-saw and a throat having a slotted hub adapted to guide the band-saw near the table of the machine, combined with the roller *a* connected with the said throat and adapted to serve as a support for the band-saw, whereby pressure of the pole being sawed against the said roller moves the throat and turns the band-saw in the proper direction, substantially as described. 2nd. In a machine for sawing poles, the throat having two slotted hubs to receive one of the slotted hubs, of and sustain the said throat and act as a bearing for it in its oscillations, combined with an adjustable roller *a* connected with the said throat and adapted to operate, substantially as described. 3rd. In a machine for sawing poles, the throat having a slotted hub and a box to receive and sustain the said hub loosely, and the bracket and roller *a* at-

tached to said yoke, combined with the anti-friction plates in the said hub to bear against the back edge and sides of the band saw, substantially as described. 4th. In a machine for sawing poles, the throat having a slotted hub and a box to receive the said hub and permit it to oscillate, and a roller adjustably connected with the said throat combined with a spring and a stop to regulate the extent of oscillation or turning movement of the said throat, substantially as described. 5th. The bed standards box and adjustable arm and the throat H having a slotted hub to receive the band saw and supported loosely in the said box, combined with the roller adjustably connected with the said throat, substantially as described.

No. 20,240. Watch and Eye Glass Holder and Protector. (*Porte Montre et Porte Lunette.*)

William A. Nichols, Philadelphia, Penn., U. S., 21st September, 1884; 5 years.

Claim.—1st. The combination of a case A B, pivoted hook J and a spring-bolt, substantially as and for the purpose specified. 2nd. The combination of case A having slot C, hole C and lugs D, back B, pivoted hook J, spring-bolt H and springs I, substantially as and for the purpose specified. 3rd. The combination of case A having slot C, hole C and lugs E, pivoted hook J having bent end K provided with notch k, spring bolt H and springs I, substantially as and for the purpose specified. 4th. The combination of case A having slot C, hole C and lugs D, back B, pivoted hook J, spring J, spring-bolt H and spring I, substantially as and for the purpose specified. 5th. The combination of case A having slot C, hole C, clamping pieces E and lugs D, back B having notches F, pivoted hook J, spring-bolt H and spring I, substantially as and for the purposes specified.

No. 20,241. Horse Power Fire Engine.

(*Pompe à Incendie Force de Cheval.*)

Menzo D. Halsey, Detroit, Mich., U. S., 21st September, 1884; 5 years.

Claim.—1st. In a fire engine, the combination, with a crown wheel provided interiorly with a cam, of one or more pumps having piston rods, devices connecting said rods with the cam and a sweep for rotating the cam wheel, substantially as described. 2nd. In a fire engine, the combination, with a crown wheel provided interiorly with a cam, one or more pumps having piston rods, devices connecting said rods with the cam and an air chamber projecting into the crown and communicating with the pumps or pump, substantially as described. 3rd. In a fire engine, the combination, with a crown wheel provided interiorly with a cam, of one or more pumps having piston rods, devices connecting the said rods with the cam, and a top plate supported from the interior of the crown wheel and provided with guides for the piston rods, substantially as described. 4th. In a fire engine, the combination of a crown wheel provided interiorly with a cam, one or more pumps having piston rods, devices connecting the rods with the cam and friction wheels located beneath and within the crown wheel for sustaining the latter on its bearing, substantially as described. 5th. The combination of four adjacent pumps, having piston rods with an air chamber common to all the pumps, a chambered diaphragm located under and communicating with said pumps, a crown wheel provided interiorly with a cam and means connecting the pistons of the pumps with said cam, substantially as and for the purpose described. 6th. The combination of a series of pumps having piston rods, a crown wheel provided with an interior cam, a series of guide posts projecting vertically through the crown wheel and yokes connected with the piston rods and capable of sliding on the guide posts, said yokes connecting with the cam of the crown wheel, substantially as described. 7th. The combination, with the pumps having piston rods, the crown wheel having an interior cam, a screw connected with the end of each piston rod, collars adjustable towards and from each other by the screw and yokes located between the collars and connecting with the cam of the crown wheel, substantially as described. 8th. The combination, with the pumps having pistons, the crown wheel having an interior cam, and yokes connected with the pump pistons and the cam of collars located on opposite sides of the yoke, and mechanism for adjusting the collars to and from each other to vary the stroke of the pistons, substantially as described.

No. 20,242. Crimped Stove Pipe Elbow.

(*Coude Pissé de Tuyau de Poêle.*)

Thomas S. Evans and Edwin H. Bissett, Winnipeg, Man., 21st September, 1884; 5 years.

Claim. 1st. A pipe elbow made of sheet metal in one piece, having the surplus metal thrown into interior crimps B and flattened, as set forth. 2nd. A curved elbow pipe made of one piece of sheet metal when the curvature of the same is produced by forcing the surplus metal inwardly on the inner arc of the elbow and flattened, substantially as set forth.

No. 20,243. Insulated Rail Joints.

(*Joint de Rails Isolés.*)

Thomas A. B. Putnam, New York, N. Y., U. S., 21st September, 1884; 5 years.

Claim.—1st. A railway rail joint consisting of the combination, with the rails, of fish-plates or equivalent devices between which the rails are clamped, each of said fish-plates connected to one of the rails in such manner as to limit the longitudinal movement of the rail relatively to it, a sheathing of insulating material interposed between each fish-plate and the rail with which it is not so connected, and a plate of insulating material interposed between the abutting ends of the rails, whereby the two rails are insulated from each other, substantially as set forth. 2nd. A rail-joint consisting of the combination, with the rails, of fish-plate or equivalent devices between which the rails are clamped, pins or projections connecting each of said plates with one of the rails, a sheath of insulating material interposed between each of said plates and the rail with which it is not

connected, and a suitable insulating connection between said fish-plates or equivalents whereby they are prevented from moving longitudinally relatively to each other, substantially as set forth. 3rd. A rail-joint consisting of the combination, with the rails and ties, of fish-plates or equivalent devices between which the rails are clamped, pins projecting from each of said plates and engaging holes in the web of one of the rails, whereby said rail is connected to but one fish-plate, a sheath of insulating material interposed between each rail and the fish-plate with which it is not connected, and suitable fastenings for connecting said fish-plates or equivalents rigidly to the ties and so prevent their longitudinal movement relatively to each other, substantially as set forth. 4th. The combination of rails A, A, ties B, B, fish-plates D, D, pins c, C, re-inforce bars E, E connected to the fish-plates by abutting shoulders limiting their relative longitudinal motion, and insulating sheaths a, a, substantially as set forth. 5th. The combination, with rails A, A, ties B, B and guard stringers C, C, of fish-plates D, D, insulating sheaths a, a, pins c, c, re-inforce bars E, E, wedges F, F and bolts, screws or spikes f, f, substantially as set forth. 6th. A fish-plate for an insulated railway rail-joint provided with a pin or pins fastened in it, and projecting from it in the side, which is designed to fit against the web of the rail, in combination with an insulating sheathing adapted to fit against it and insulate it from the rail, substantially as set forth.

No. 20,244. Vice. (*Etau.*)

James O. Barrett, Erin, Penn., U. S., 21st September, 1884; 5 years.

Claim.—1st. In a vise, one of the jaws of which is pivoted, the combination, substantially as shown, with said jaw, of a pivot block forming the joint of said jaw which is slotted to receive the beam of the travelling jaw, substantially as shown. 2nd. In a vise, the combination, substantially as shown, of the fixed or bench jaw and its body or base A x containing the pivot-block A₂, and the travelling jaw and its beam B B₁, and the screw C, and the nut C₁ contained in the said pivot-block, as shown. 3rd. In a vise, the combination, substantially as shown, of the following elements: The standard A₂ adapted, as shown, to serve as a pivot for the jaw A, and having a slot for the passage of the beam B₁ of the travelling jaw B, and containing therein the nut C₁ of the screw C, the fixed or bench jaw A having a cylindrical-formed body or base A, adapted, as shown, to receive the standard or pivot-block A₂, and having a slot or opening through it to receive said bar or beam B₁, and having also bearing projection A₄ and A₅, as shown, and, finally, the movable jaw B with bar B₁ containing the screw C.

No. 20,245. Machine for Planing, Tonguing and Grooving Boards. (*Machine à Raboter les Planches et les Assembler à Rainures et Languettes.*)

Henry C. Tunis, Baltimore, Md., U. S., 21st September, 1881; 5 years.

Claim.—1st. In a machine for planing, tonguing and grooving boards, the combination, with the frame thereof and suitable feed rollers, of the shafts carrying respectively the planing, the flat tonguing and V-shaped parting blades, the said shafts being located in consecutive order and on opposite sides of the passage of the stock. 2nd. In a machine for planing, tonguing and grooving boards, the combination, with a suitable frame, of the shafts carrying planing, tonguing and parting blades, the shafts being located in consecutive order and on opposite sides of the passage of the stock, the grooving blades and a device to separate the boards so that one of said grooving cutters can act upon an intermediate edge of the stock or of a board. 3rd. In a machine for planing, tonguing and grooving boards, the combination, with a suitable frame, of the shafts carrying planing, tonguing and parting blades, the said shafts being located in consecutive order and on opposite sides of the passage of the stock, the grooving blades and the inclined plane adapted to act on the stock so as to separate the boards and allow access to the intermediate edge thereof by said grooving blades. 4th. In a machine for planing, tonguing and grooving boards, the combination, with the grooving knives or blades of a device constructed to separate the boards, whereby access to an intermediate edge may be had by said grooving blades. 5th. In a machine for planing, tonguing and grooving boards, the combination, with the intermediate revolving grooving blades of the inclined plane located in advance of said blades to elevate one of the boards, whereby access to the intermediate edge of the adjacent board may be had by said grooving blades. 6th. In a machine for planing, tonguing and grooving boards, the combination, with the intermediate grooving blades and the inclined plane located in the presence of said blades for elevating one of the boards, the foot or shoe, whereby the board being grooved may be firmly held. 7th. In a machine for planing, tonguing and grooving boards, the combination, with the frame thereof and shafts for carrying planing, tonguing and parting blades, of the revolving blades located at each side thereof, the grooving blades located intermediate the sides, the inclined plane for varying the plane of the boards located in advance of said grooving blades, and shoe for holding the intermediate board down to its place while being grooved. 8th. In a machine for planing, tonguing, and grooving boards, the shaft provided with planing, tonguing and parting blades, the tonguing and parting blades having flat and V-shaped cutting edges respectively. 9th. In a machine for planing, tonguing and grooving boards, the shaft having the adjustable flat-edge tonguing blades and the adjustable V-shaped parting blades, the said tonguing and parting blades being on diametrical sides of the shaft. 10th. In a machine, for planing, tonguing and grooving boards, the combination with the shafts having respectively planing blades, a set of flat-edge tonguing blades equal in width to two tongues, a set of V-shaped parting blades and a set of grooving blades equal in width to one tongue and a set of parting blades having straight and tapering sides, each shaft being placed on opposite sides of the passage of the stock. 11th. In a machine for planing, tonguing and grooving boards, the parting blades having straight and tapering sides to their cutting edges. 12th. In a machine for planing and grooving boards, the parting blades having V-shaped cutting edges. 13th. In a machine for planing, tonguing and grooving boards, the combination, with the inclined plane for separating the boards of the

adjustable presser-foot for firmly holding the board while being grooved. 14th. In a machine for grooving boards, the combination therewith of a board separator constructed and located to separate the boards as they pass through the machine, whereby access may be had to an intermediate board by a grooving blade.

No. 20,246. Reduction Machine.

(Machine à Moudre.)

The Case Mfg Co., (assignee), John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. In a grain reduction machine, the combination, with a pair of crushing rolls adapted to be rotated, of a stationary grinding member interposed between them and extending above and below the horizontal plane of their axis, as and for the purpose set forth. 2nd. In a reduction machine, the combination of three horizontal rolls, the middle roll being stationary and the two outside rolls adapted to work against it, as set forth. 3rd. In a reduction machine, the combination of three rolls, the middle roll being provided with differently dressed surfaces, as set forth. 4th. In a reduction machine, the combination of three rolls, the middle stationary roll being formed with smooth portions on opposite sides thereof, as set forth. 5th. In a reduction machine, the combination of three rolls, the middle stationary roll being formed with coarse blunt corrugations on opposite sides of the roll, as set forth. 6th. In a reduction machine, the combination of three rolls, the middle stationary roll being formed with fine sharp corrugations on opposite sides of the roll, as set forth. 7th. In a reduction machine, the combination of three rolls, the middle stationary roll having a series of duplicate differently-dressed surfaces on opposite sides of the roll, as set forth. 8th. A middle roll having series of teeth pointing in opposite directions on opposite sides of the roll, in combination, with two outside rolls with teeth in opposite directions to work against the teeth of the said middle roll, as set forth.

No. 20,247. Casing for Roller Mill.

(Chemise de Moulin à Cylindres.)

The Case Mfg Co., (assignee) John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. In a roller mill, the combination, with a frame constructed of duplicated end and side plates, of a cap or cover similarly constructed, the meeting edges of said parts being formed complementary to each other, as set forth. 2nd. The combination of the end plates 2 and 7, constructed as herein described and shown, and adapted for use at either end of the machine, with the side plates 1, as set forth. 3rd. The cap or cover comprising the duplicated plates 15 and 19 and top plate 8, arranged in the manner and for the purpose herein shown and described. 4th. The combination of the lower portion 1, 1, 2, 2 of the frame or casing and the cap or cover 15, 18, 19 constructed and adapted for use substantially as herein set forth. 5th. The combination, with the duplicate side plates 1 having the journal boxes for the stationary rolls cast therewith, of the duplicate plates 17 cast with housings for said journals and adapted for use on either side of the machine, as set forth.

No. 20,248. Feed Box for Roller Mill.

(Trémie de Moulin à Moudre.)

The Case Mfg Co., (assignee) John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. A vibrating feed-box suspended by elastic or spring straps, as and for the purpose set forth. 2nd. A vibrating feed-box suspended on each side by flexible springs coiled in opposite directions, in combination with means for imparting motion to said box, as set forth. 3rd. A double vibrating feed-box having shallow end bridges over which the material sifts, as set forth. 4th. The combination, with one hopper-spout and a double vibrating feed-box, of two pairs of rolls and two delivery spouts, as set forth.

No. 20,249. Feed Box for Roller Mill.

(Trémie de Moulin à Moudre.)

The Case Mfg Co., (assignee), John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. A double vibrating feed-box provided with a central partition, in combination with two hopper-spouts, whereby a different class of material may be fed to each of two sets of rolls, as set forth. 2nd. A double vibrating feed-box provided with a central partition and one common means, whereby both are vibrated in combination with two hopper-spouts and two sets of rolls, as and for the purpose set forth. 3rd. In a roller mill, a duplex shaking box and elastic hangers for supporting the same from above, in combination with two sets of rolls, substantially as shown and described. 4th. In a feed apparatus for roller mills, a suspended box divided into two compartments and a common eccentric shaft, in combination with suitable driving mechanism, as set forth. 5th. In a roller mill, the combination of two sets of rolls and a duplex feed-box, with an eccentric cam shaft passed through the case of the machine parallel with the said rolls, as and for the purpose set forth. 6th. In a feed apparatus for roller mills, the combination of the pulley on the shaft, of the roll 4, the pulley 7, the eccentric shaft 8 and duplex feed-box 1, 2, substantially as and for the purpose set forth. 7th. In a feed apparatus for roller mills, the combination of the box 1, 2, the spring 10 and eccentric 8. 8th. The combination, with two pairs of rolls, of a vibrating feed-box adapted to supply each pair of rolls from its respective sides, with an equal and uniform quantity of material, as set forth. 9th. A vibrating feed box having shallow bridges over which the material sifts, in combination with means for imparting a lateral vibratory motion thereto, substantially as set forth. 10th. A vibratory feed-box having adjustable bridges over which the material sifts, in combination with suitable means for imparting motion to said box, as set forth. 11th. A duplex feed-box, in combination with two pairs of rolls and one common means, whereby a lateral vibratory motion is imparted to said box, as set forth. 12. In a roller mill,

the combination of a feed-box, elastic hangers for supporting the same and means for imparting a vibratory motion to said box, as set forth. 13th. In a roller mill, the combination of two sets of rolls and a duplex feed-box, with an eccentric for imparting motion to said box in one direction and a spring for returning it, substantially as set forth. 14th. In a roller mill, the combination, with a vibrating feed-box, of an eccentric shaft, a pulley on said shaft, a belt and a pulley on one of the road shafts, as and for the purpose set forth. 15th. In a roller mill, the combination, with a feed-box, of an eccentric for imparting a horizontally reciprocating motion thereto and means for driving said eccentric from one of the crushing rolls.

No. 20,250. System of Apparatus for Elevating and Purifying Milling Products.

(Appareil d'Ascension et d'Epuracion des Produits de Meunerie.)

The Case Mfg Co. (Assignee) John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. The combination of a series of rolls or breaking machines, a series of pneumatic elevating pipes of small area, a series of settling chambers, an exhaust pipe of larger area, a dust-catcher and a fan, all arranged substantially in the manner and for the purposes set forth. 2nd. The combination, with a series of pneumatic elevating tubes of small area, a series of settling chambers and an exhaust pipe of larger area, of a second pneumatic elevating tube of small area, a second settling chamber, a second exhaust pipe of larger area and an air trunk and fan common to all arranged substantially in the manner and for the purpose set forth. 3rd. The combination, with a rotary flour bolt, of a pneumatic elevating pipe, a settling chamber or bolt hopper of much larger area, into which said pipe delivers, a suction fan for exhausting the air and dust from said settling chamber, and a feed spout conducting from said chamber to the bolt, whereby the dust and impurities are carried off before the material reaches the bolt, as set forth. 4th. The combination of the rotary bolt 56, elevating pipe 53, suction fan settling chamber 55, valve 71 and automatic valve 57, substantially as and for the purposes set forth. 5th. The combination of a series of rotary bolts, pneumatic elevating pipes, settling chambers and a suction fan common to all, substantially as shown and described. 6th. The combination of a bolting reel, a fan and elevating tube and a practically air-tight settling chamber or hopper into which a current of air is drawn, and the material to be bolted thereto elevated and purified by one common fan before it reaches the bolt, as set forth.

No. 20,251. Adjusting and Levelling Device for Roller Mill.

(Appareil à ajuster et à Nivelier pour Moulin à Moudre.)

The Case Mfg Co. (assignee), John M. Case, Columbus, Ohio, U. S., 21st September, 1884; 5 years.

Claim.—1st. In a levelling device for roller mills, the combination, with arm 3, journal box and the casing having lug 7 and a guiding slot in its flange, of block 5, clamp bolt 8 and adjusting screw 6 bearing in said lug, as and for the purpose set forth. 2nd. In a roller mill, the links 9, hand-screws 12, followers 11, shaft 14 provided with eccentric ends 13 and lever 22, in combination with suitable means for holding the rolls in grinding position with a yielding pressure, as and for the purpose set forth. 3rd. The combination, with links 9, adjustable followers 11 and shaft 14 provided with eccentric ends 13, of the adjustable springs 20, as and for the purpose set forth.

No. 20,252. Locomotive Boiler.

(Chaudière de Locomotive.)

Charles B. Coventry, Chicago, Ill., U. S., 22nd September, 1884; 5 years.

Claim.—1st. A locomotive boiler provided with heating flues lying in the water, and through which the products of combustion are drawn to convert the water into wet steam, and superheating flues above the water line and surrounded by the wet steam and through which the products of combustion are returned after passing through the water or heating flues to convert the wet into dry or superheated steam, and which open directly and from substantially but one direction into a smoke chamber, all arranged in one boiler or shell, substantially as described. 2nd. A locomotive boiler provided with a series of heating flues, a series of superheating flues and a drum or projecting piece placed above and projecting beyond the ends of the heating flues, whereby the heat shall be deflected out and around such drum before entering the superheating flues, in combination with a door provided with a deflecting plate, substantially as described. 3rd. A door for the front end of a locomotive boiler provided with a deflecting plate, substantially as described. 4th. A locomotive boiler provided with heating flues, return superheating flues, smoke chamber into which the superheating flues open and pipe leading from the superheating portion of the boiler into the furnace or fire-box to convey superheated steam into the same, whereby the draft is facilitated and increased, substantially as described. 5th. A locomotive boiler in which the walls of the furnace are corrugated or provided with depressions, in combination with a pipe leading from the steam space and lying in such corrugations or depressions, substantially as described and for the purpose set forth.

No. 20,253. Manufacture of Imitation Stained Glass.

(Fabrication de l'Imitation de Peinture sur Verre.)

Eugene E. Oudin, Chicago, Ill., U. S., 22nd September, 1884; 5 years.

Claim.—1st. The described process of manufacturing imitation stained glass, consisting in dissolving dextrine in water, hot or cold, and with or without colouring matter, and applying the same to the glass and allowing it to harden therein, and applying thereto a coat of protecting and binding material. 2nd. As a new article of manufacture, imitation stained glass in which dextrine, with or without colouring matter, is caused to adhere to the glass, substantially as and for the purposes set forth. 3rd. The described process of manu-

facturing imitation stained glass, consisting in dissolving dextrine in water, hot or cold, and with or without colouring matter, then mixing with the dextrine foreign substances, and then applying the resulting compound to the surface of the glass, allowing the same to harden thereon, and then applying thereto a coat of protecting and binding material. 4th. The described process of manufacturing imitation stained glass, consisting in dissolving dextrine in water, hot or cold, and with or without colouring matter, then applying the dextrine thus prepared to the surface of the glass, and adding to it before it hardens foreign substances, then allowing the dextrine to harden and then applying to the dextrine a coat of protecting and binding material. 5th. As a new article of manufacture, imitation stained glass, to the surface of which the colour-bearing material is applied, which has embedded in its particles of foreign substances, as and for the purposes set forth. 6th. The described process of manufacturing stained glass, consisting in dissolving dextrine in water, hot or cold, and with or without colouring matter, combining glycerine with the dextrine, substantially as described, and applying the resulting compound to the glass and allowing it to adhere thereto. 7th. As a new article of manufacture, dissolved dextrine, mixed with colouring substances, substantially as and for the purposes set forth. 8th. The described process of ornamenting surfaces, consisting in causing dissolved dextrine, with or without colouring matter, to adhere thereto, substantially as set forth.

No. 20,254. Lamp. (*Lampe*.)

Henry E. Shaffer, Rochester, N. Y., U. S., 22nd September, 1884; 5 years.

Claim.—1st. The combination in a drop light, of a disc attached to the hanger and a lamp provided with a base which fits the disk provided with suitable locking attachments by which the base can be fastened to the disk, as set forth. 2nd. The combination of the disk K attached to the hanger I and provided with notches *b, b* and the lamp base A adapted to fit the disk and provided with tongues *c, c* which enter the notches to attach the lamp to the hanger, as herein shown and described. 3rd. In a lamp which is adjustable to different positions on its standard, the combination of the axis E provided with the fixed tooth wheel P, the cap F provided with the tooth *a* and the spring R which presses the wheel into engagement with the tooth, as herein set forth.

No. 20,255. Wire Band for Boxes, &c.

(*Cercle en fil de fer pour Boîtes, &c.*)

Henian Frank, Alexander Elkan and Barnard Lande, New York, N. Y., U. S., 22nd September, 1884; 5 years.

Claim.—1st. A band for binding boxes, etc., composed of twisted wires with eyes or openings formed therein between the strands, the twists in the alternate sets of sections being in opposite directions, substantially as set forth. 2nd. A band composed of wire strands, having a right-hand twist for a short distance, then an eye formed by outward bends of the strands, then a left-hand twist for a short distance, then another eye formed by outward bends of the strands, and so on substantially as set forth. 3rd. In a band for binding boxes, the combination of the wires *a* and *b* twisted together in a right-hand direction bent outwardly to form the eye *c*, and then twisted together in a left-hand direction, bent outwardly in the same plane as before to form the eye *c'*, and then again twisted together in a right-hand direction, and so on, substantially as set forth.

No. 20,256. Harvester Binder.

(*Moissonneuse Lieuse*.)

A. Harris, Son & Co., (Limited) (assignee), John Harris and Josiah Lucas, Brantford, Ont., 22nd September, 1884; 5 years.

Claim.—1st. The combination, with a harvester having packing and binding apparatus, of a roller located and operated between the top of the elevating canvas and binding table, for the purpose specified. 2nd. The roller A located and operated between the top of the elevating canvas and binding table, in combination with the lugs *a* and straps *b*, substantially as and for the purpose specified. 3rd. In a harvester having a packing and binding apparatus, a roller A, in combination with lugs or projections *a*, straps *b* and the fixed slanting deck B, arranged substantially as and for the purpose specified. 4th. Bearings arranged to support the frame-work of the packing and binding apparatus, so that it may be rolled on a pivot whose centre shall correspond with that of the packer-shaft. 5th. Pillars arranged to support and form pivot bearings for the frame carrying the packing and binding apparatus, in combination with a bearing formed on the cross-sill, in such a manner that the pillars may be moved laterally with the binder table without disconnecting them from the cross-sill substantially as and for the purpose specified. 6th. The hanger O having a looped end *q* through which the pipe J passes, and a toe or enlargement at its other end, in combination with a guide arranged to hold the hanger *o* to the sill *u* while permitting it to have sufficient longitudinal movement to allow of the rolling of the table. 7th. The hanger *o* having a looped end *q* and a toe *q* at its other end, in combination with the bearing or castings *r* and *s* and the pipe *t*, the whole being arranged, substantially as and for the purpose specified.

No. 20,257. Ship Windlass. (*Guindeau*.)

Ambrose Amiro and Byron Hines, Pubrico, N. S., 24th September, 1884; 5 years.

Claim.—1st. The drum of a windlass geared by a train of wheels to an axle carrying two ratchet wheels, each having groove-like teeth to receive the lips of a clip embracing the rim and having a pawl pivoted therein engaging the ratchet teeth and the outer end thereof connected by a pitman to a double hand lever pivoted above. 2nd. The drum A carrying spur wheels E, E gearing by means of carriers E', E' into the pinions D, D secured upon the axle of a pair of ratchet wheels C, C which are journaled in a central standard B, a double hand lever H pivoted upon the latter and having pivotally suspended at each side of the central pivot, a pitman G the lower end of which

is pivoted to the projecting end of a clip F embracing the rim of the ratchet wheel and radially guided thereon by lips *f* running in grooves *c* and provided with a pawl *f'*. 3rd. The combination of the hand lever H pivoted upon a central standard, the pitmans G pivotally suspended from the said lever one at each side of the central pivot and each carrying at its lower end a clip F embracing the rim of a ratchet wheel C and radially guided thereon by lips *f* running in grooves *c* and carrying a pawl *f'* pivoted in said clips to engage the teeth of the ratchet wheels. 4th. The combination of the ratchet wheel C and the clip F embracing the rim thereof and radially guided thereon by lips *f* running in grooves *c* and having a pawl *f'* pivoted therein to engage the teeth of said ratchet, all substantially as described and for the purpose set forth.

No. 20,258. Combined Backing, Plowing and Gilding Press. (*Pressé Combinée à Tranche-Filer, à Boweler et à Endosser*.)

Thomas Freeman and John F. Ellis, Toronto, Ont., 24th September, 1884; 5 years.

Claim.—1st. A rectangular frame A provided with a detachable table G having one of the cheek blocks H fixed to its inner edge, in combination with the cross-head D also having a cheek-block H fixed to it and operated by the screw E, substantially as and for the purpose specified. 2nd. A rectangular frame A carried in the standards B and having the table G fixed to it, with guide-bars I fixed to the said table, in combination with the cross-head D operated by the screw E, substantially as and for the purpose specified. 3rd. A rectangular frame A suitably journaled in the standards B, in combination with the adjustable cross-head D carried in the frame A and operated by the screw E, substantially as and for the purpose specified.

No. 20,259. Nut Forging Machinery.

(*Machine à Forger les Ecrous*.)

The Patent Nut & Bolt Co., Limited, London Works, Eng. (assignee of Friedrich A. Hasenclever, Dusseldorf, Germany), 24th September, 1884; 5 years.

Claim.—1st. A nut forging machine, constructed and arranged substantially as herein described and represented by the accompanying drawings. 2nd. The combination of the duplicate cams *b, b'*, the central cam *b* and the cam *b'* having double protuberance *b, b'*, with the slide *s, c, c'*, the spring sliding bar *f*, the lever *h* and sliding bolt *g* and the die box, the compressing punch *m* and round punches *l* and *l'*, substantially as described. 3rd. The cutting punch *m* and its slide *g*, in combination with the screw *p*, the cross-head *r*, the tie bolts *s, s'*, spring *u* and bar *v*, substantially as and for the purposes set forth.

No. 20,260. Whip and Line Holder.

(*Porte-Fouet et Porte-Guide*.)

Henry B. Pitner and Keim K. Brooke, Plymouth, Ind., U. S., 24th September, 1884; 5 years.

Claim.—1st. The combined whip and line holder, consisting of rigid section A, rigid section B secured thereto and movable section C secured to section B by rivets passing through slots in one of said sections and spring D, said sections A and C having their edges or sides cut out or gored so as to admit the lines between the pivoted section and the whip, substantially as specified. 2nd. The combination of section A provided with ear or lug *a*, and section B provided with ears or lugs *b* and *b'* and rivetted to said section A, movable section C secured to said section B by rivets passing through slots in one of said sections, and spring D rivetted to said sections B and C, substantially as specified.

No. 20,261. Fire Escape. (*Sauveteur d'Incendie*.)

Eward L. Byron, Mos's River, Charles E. Kennedy and Joseph R. Ball, Sherbrooke, Que., 24th September, 1884; 5 years.

Claim.—The iron frame A, with the bars B, B and the rope as coiled C, in combination with the hole D at the top, and the holes E, E at the ends with the hooks F and G, all in combination as and for the purposes set forth and hereinbefore described.

No. 20,262. Heating Apparatus.

(*Appareil de Chauffage*.)

Edwin H. Bissett, Winnipeg, Man. (assignee of Robert Crawford, Indian Head, North-West Territory, Canada), 24th September, 1884; 5 years.

Claim.—1st. The combination, with a stove or furnace, of a false bottom forming a chamber B and a cold air pipe C extending from said chamber to the exterior of the building, substantially as specified. 2nd. The combination, with a stove or furnace, of the heating chamber B, cold air tube C, indicator or register D, as and for the purpose set forth. 3rd. The combination of the stove A, chamber B, cold air tube C having flange C, indicator D and damper C₂, substantially as and for the purpose specified. 4th. The indicator D composed of dial D₂, spindle *d*, pointer D₃ and fan D₁, in combination with tube C, as and for the purposes set forth.

No. 20,263. Barrel. (*Baril*.)

Joseph H. Roy and Joseph St. Germain, Montreal, Que., 24th September, 1884; 5 years.

Claim.—1st. A barrel, having the staves A made parallel in outline, and having the slits *a* made in their ends, substantially as and for the purpose set forth. 2nd. The combination of the parallel-shaped staves A having the slits *a*, with the end hoops *b*, middle hoops *c* and heads B, substantially as and for the purpose herein shown and described.

No. 20,264. Roller Dies for Making Auger and Bit Blanks. (*Eclamps à Cylindres pour faire les Taridères et les Mèches de Vitebrequins.*)

Charles O. Tinker, Ashtabula, Ohio, U. S., 24th September, 1884; 5 years.

Claim.—1st. The combination, with the die-block *f*, of the plate *o* carrying the guide-plate *m*, and secured under the block to the die-roll, as described. 2nd. The roller dies having the pair of die-grooves *a* made angular from the bottom to the top roller-surface, the pair of succeeding grooves *b* made flatter and shallower, with edges *j* squared to the roller surface, the pair of edge-rolling grooves *c* and the pair of shaping and finishing grooves *d*, whereby the bar *h* may be first formed into blank *i*, then reduced, then made with edges *k* and finally finished in shape, as described. 3rd. The combination, with the rolls *p*, of the loose pinion *s* having inclined seats *e*, the taper keys *t* having reversely-inclined side-edges *u* and notched heads *v*, and the screws connecting with said notched heads, as and for the purpose specified.

No. 20,265. Beer Cooling Apparatus. (*Refrigerateur à Bière*)

Leonard Schlather, Cleveland, Ohio, U. S., 26th September, 1884; 5 years.

Claim.—An apparatus for cooling beer, consisting essentially of a system of pipes located above the fermenting-tub, and a bent or coiled pipe in communication with the system of pipes, the ends of said coiled or bent pipe being journaled, whereby the coil can be turned on its axis the arc of a circle, all of the above parts being combined substantially as set forth.

No. 20,266. Steam Whistle. (*Sifflet à Vapeur.*)

John Einig, Jacksonville, Florida, U. S., 26th September, 1884; 5 years.

Claim.—1st. The combination, with the bell *a* having its lower end screw-threaded and provided with longitudinal chambers having different lengths, of the screw-threaded ring *c* and means, substantially as described, for locking said ring in position, as set forth. 2nd. A steam whistle, having the lower end of the bell fitted to screw up and down on the upper part, and provided with a check ring to set the adjustable part in a fixed position, substantially as described.

No. 20,267. Miter Boxes. (*Boîte de Mitre.*)

William J. Powell, Marshfield, Mass., U. S., 26th September, 1884; 5 years.

Claim.—1st. The above-described improved miter box, consisting of a bed-plate *a* having beneath it a pinion-gear *b*, the side-pieces *c* having on each a rack *b* and brackets *a*, in combination, with yokes *a*, the guide-rods *c* and the saw-guides *a* having the screws and thumb-nuts *a*, all substantially as described for the purpose set forth. 2nd. In a miter-box, in combination with a bed-plate and side pieces, constructed as described, the saw-guide *a*, the supporting yokes *a*, the guide-rods *c* and the securing-screws and thumb-nuts *a* and *a*, all substantially as described.

No. 20,268. Process of Roasting and Disintegrating Gold, Silver and Copper Ores. (*Procédé de Rotissage et de Désagrégation des Minerais d'Or, d'Argent et de Cuivre.*)

David W. Birmingham, Clifton, New York, U. S., 26th September, 1884; 5 years.

Claim.—1st. In the separation of gold and silver from their ores, the process, herein described, of preparing said ores for amalgamation, consisting in combining therewith lime and charcoal and roasting the mixture in a suitable furnace, and subsequently plunging the hot ore into a suitable bath, substantially as described. 2nd. The process described of preparing gold and silver ores for amalgamation, said process consisting in combining lime and charcoal, or their equivalents, with said ores, roasting them in conjunction with said substances, and plunging the hot ore, after roasting, into a bath composed of an aqueous solution of common salt, cyanide of potassium, and sulphate of copper, or their equivalents, substantially as described. 3rd. The process, herein described, of preparing refractory ores for amalgamation, consisting in combining therewith lime carbon and common salt, or equivalents, roasting the mixture and then subjecting the same to a suitable bath, substantially as described.

No. 20,269. Straight Way Valve Case. (*Chemise de Tiroir à Action directe.*)

Adolph Weber, Detroit, Mich., U. S., 26th September, 1884; 5 years.

Claim.—1st. A straight-way valve case, wherein the case proper is cast in iron, with brass valve seats secured therein, substantially as and for the purpose described. 2nd. The process, herein described, of manufacturing a composite straight-way valve case, consisting of casting the case proper in iron around brass flattened rings which form the valve seats, substantially as specified. 3rd. A brass ring provided upon its outer edge face with a groove, and upon its outer flat face with another groove, standing at right angles or nearly so to the first named groove, in combination with a cast-iron valve case, substantially as set forth.

No. 20,270. Supporting Horse. (*Chevalet.*)

Henry C. Sargent, Machias, Maine, U. S., 26th September, 1884; 5 years.

Claim.—1st. In a supporting horse for furniture and the like, the

combination, with the body, of the horse mounted upon suitable supporting legs and composed of two clamps having grooves in their upper faces, of the cushion strip constructed to fit the united grooves of the clamps and project above the upper face of the body, as set forth. 2nd. The herein-described supporting horse comprising the body, the head blocks, provided with vertical flanges and downwardly and outwardly inclined arms, the legs secured to the said arms, clamps having grooves in their upper faces and fitted between the vertical flanges of the head blocks and the cushion strip constructed to fit the grooves of the clamps when the latter are united together, as set forth. 3rd. In a supporting horse, the combination, with the clamps having half-dovetailed grooves in their upper inner faces, of the cushion strip fitted in the said half grooves, the flanged head blocks secured to the clamps by bolts and the legs attached to the head block, as set forth. 4th. In a supporting horse, the combination, with the body thereof, of the head blocks provided with vertical perforated flanges and downwardly and outwardly inclined arms having mortises at the lower ends, the legs secured in the mortises by bolts and a brace rod secured to the legs by castings, as set forth.

No. 20,271. Process and Device for Imprinting on Steel or other Metals, Names, Devices and Ornamentations. (*Procédé et Appareil pour Graver sur Acier et autres Métaux des Noms, &c.*)

George J. B. Rowell, Toronto, and R. H. and L. R. Smith, St. Catharines, Ont., 26th September, 1884; 5 years.

Claim.—1st. A roller covered with rubber or other elastic material having letters, numerals or fancy designs sunk below its surface, which surface is covered with printer's ink, prepared substantially as described. 2nd. A roller covered with rubber or other elastic material having letters, numerals, or fancy designs sunk below its surface, which surface is covered with printer's ink, prepared substantially as described, the said roller being journaled in a frame provided with a handle and having a receptacle to receive a weight, substantially as and for the purpose specified. 3rd. A roller covered with rubber or other elastic material having letters, numerals, or fancy designs sunk below its surface, which surface is covered with printer's ink, prepared substantially as described, the said roller being journaled in a frame provided with a handle and having a receptacle to receive a weight, in combination with an adjustable friction roller *G*, arranged substantially as and for the purpose specified. 4th. As an improved process for imprinting on steel or other metal letters, numerals or fancy designs, the imprinting on the surface of the metal by transferring prepared ink on the surface of the metal, substantially in the manner specified, and sprinkling on the said inked surface powdered resin preparatory to covering the said surface with acid, substantially as and for the purpose specified. 5th. A roller covered with rubber or other elastic material having letters, numerals or fancy designs sunk below its surface and having one side loaded or weighted, substantially as and for the purpose specified. 6th. A roller covered with rubber or other elastic material having letters, numerals or fancy designs sunk below its surface, in combination with a track or guide, substantially as and for the purpose specified.

No. 20,272. Straw Stacker.

(*Appareil à mettre la Paille en Meule.*)

William Decker and Joseph Glaze, Darlington, Ind., U. S., 26th September, 1884; 5 years.

Claim.—In a straw-stacker, the combination, with the frame *a*, of the arms *n, n*, pulleys *g, g* at their upper ends, the arms *s, s*, the shaft *v*, pulleys *r, r*, the carrier *u*, hinged between the upper ends of the arms *s, s*, the arms *n, n* hinged at their lower ends to the arms *n, n*, the friction rollers *o, o* near their upper ends and the ropes *p, p* connecting the arms *m, m* and the pulleys *r, r*, substantially as specified.

No. 20,273. Mechanism for Knotting Grain Bands in the Automatic Grain Binders. (*Mécanisme pour Nouer les Liens dans les Lieuses Automatiques à Grains.*)

The Massey Mfg Co., (Limited) Toronto, Ont., (assignee of William N. Whitely, William Bayley and Samuel Dyer, Springfield, Ohio, U. S.), 26th September, 1884; 5 years.

Claim.—1st. The stripper *j* made in two parts capable of adjustment as to each other, whereby the position of the free or stripping end of said lever may be adjusted, substantially as set forth. 2nd. The stripper *j* made in two parts both pivoted upon the bolt *e*, and provided with intersecting slots *f, h* and the connecting bolt *i*. 3rd. The lever *E*, whereby the pawl *D* is actuated, provided with the slotted connection and the sleeve *l* combined with said sleeve *l* fitted upon the plunger-rod *F* with a screw-thread, and said plunger-rod provided with a nick *m* at its outer end or equivalent means, whereby a tool may be applied to revolve said rod and thereby change the position thereon of the sleeve *l*, for the purpose set forth. 4th. The lever *E* pivoted at *k* to the frame and jointed at its front end, of the pawl *D* and pivoted at its rear end with a sliding pivotal connection with the sleeve *l*, combined with said sleeve provided with the set-screw *g*, and the screw-threaded plunger-shaft provided with the groove *p* to receive the set screw *p*, as set forth, whereby the lever *E* may be adjusted by rotating the plunger-rod and the correct position for pause determined, as set forth. 5th. The disk *B* with the notches *z*, combined with an elastic V-shaped holder *C* which encloses the edge of said disk, as and for the purpose set forth. 6th. The folded V-shaped holder *C*, constructed from a single piece of sheet metal, as and for the purpose set forth. 7th. The elastic V-shaped holder *C*, constructed from a single piece of sheet-metal, pivoted to the frame by pin *r*, combined with the spring *i* and the disk *B*. 8th. The revolving knotting-hook *h* and its hinged jaw *d*, combined with an elastic closing cam, whereby said jaw is closed with a yielding pressure so that it may accommodate itself to varying thickness of cords, as set forth. 9th. The revolving knotting hook *h* and its hinged jaw *d* provided

with the roller *n*, combined with an arm *I* pivoted at its upper end, fashioned to act as closing cam for the jaw *d* and the adjustable tension-spring, substantially as set forth.

No. 20,274. Bundle Carrier for Harvester.

(*Porte Gerbe de Moissonneuse.*)

The Massey Mfg Co., (Limited), Toronto, Ont., (assignees), William N. Whiteley, Springfield, Ohio, U. S., 26th September, 1884; 5 years.

Claim.—1st. In a bundle-carrier, a series of curved teeth 6 attached at their upper ends to shaft 1 (having an angular cross-section) by means of clips or coupling plates formed to fit the angular surface of the said shaft, so that the said teeth can neither shear off or turn on the said shaft. 2nd. The shaft 1 having an angular cross-section, and the tooth 5 provided with a screw at one end, combined with the clip 9 having an angular seat fitted to the angular surface of the shaft and provided with openings for the passage of the tooth, whereby, when applied to the shaft, the clip 9 occupies one side while the tooth passes on the other side and the screw-nut firmly clamps the angular shaft between the clip and tooth. 3rd. A bundle carrier with curved depending fingers fastened to a rock-shaft having an angular cross-section, and having a crank on the rear end attached to a lever or hand-piece, for the purpose of controlling the bundle-carrier at the will of the attendant. 4th. A bundle-carrier provided with curved depending teeth 5 and with a horizontal shaft 1 resting in boxes supported above the operating parts of the machine, and provided with a crank 2 and hand-rod 3, arranged to permit the carrier to be turned over on its back on top of the binder, as and for the purpose set forth. 5th. The shaft 1 having an angular cross-section, the depending teeth 5 secured thereon by clamping clip-plates fitted to the angular surface of said shaft, combined with a flanged cylinder bearings 7 having axial perforations fitted to the said shaft, whereby the shaft is adapted to turn in the seats provided for said cylinders, as set forth.

No. 20,275. Combined Drill and Cultivator Hoe. (*Houe d'un Cultivateur et d'un Semoir Mécanique combinés.*)

James Garrow, jr., (assignee of Thomas D. Galloway,) Oshawa, Ont., 26th September, 1884; 5 years.

Claim.—1st. In a combined drill and broad-cast seed sower and cultivator, a combined drill and hoe having the cultivator tooth situated at the rear of the hoe in a seat provided for it, without the aid of bolts passing through it and being held there by friction, substantially as shown and for the purpose specified. 2nd. In a combined drill and broad-cast seed sower and cultivator, a drill hoe having its lower section held in its seat by friction and without the aid of bolts passing through it, substantially as shown and for the purpose specified.

No. 20,276. Crank Pin Oiler.

(*Graisneur de Tourillon.*)

Adolph Weber, Detroit, Mich., U. S., 26th September, 1884; 5 years.

Claim.—1st. As a means for rotating the plug of an oiler, said plug having a pocket to receive the oil which has been delivered at a certain point in regulated quantities, the ratchet pawl and lever, in combination with a stop by means of which an arbitrary and unavoidable motion is given to said lever, substantially as and for the purpose described. 2nd. In combination with a lubricator, constructed substantially as described, the pin or stop *B* eccentrically secured to the crank pin and adapted in the revolution of such crank pin to arbitrarily and forcibly actuate the lever, substantially as specified. 3rd. In a lubricator, constructed substantially as described, the combination of the ratchet wheel, the lever carrying the dog or pawl, the spring which holds said pawl in engagement with the ratchet wheel, and the spring which retracts the lever when the latter is released from its engagement with the pin or stop upon the crank pin, substantially as set forth. 4th. As a means for limiting and controlling the throw of the lever which carries the dog or pawl which actuates the plug of a lubricator, constructed substantially as described, the set screw passing through a bracket with the free end of said set screw terminating at a point near such lever when the latter is in a vertical position, substantially as described.

No. 20,277. Displacement Lubricator.

(*Graisneur à Déplacement.*)

Adolph Weber and Henry W. Rood, Detroit, Mich., U. S., 26th September, 1884; 5 years.

Claim.—1st. In a displacement lubricator, the combination of an adjustable inverted condensing chamber and a delivery tube, with a gravity plug designed to close or disclose the upper end of such tube, substantially as and for the purpose specified. 2nd. In a displacement lubricator, a hollow screw stem carrying upon its lower end an inverted condensing chamber, and provided with a plug fitting into said stem and constructed to close by its own gravity the out-flow of oil from the oil chamber, substantially as and for the purpose described. 3rd. In a displacement lubricator, the combination, with the cap *E* internally threaded, of the adjustable screw-stem *G* externally threaded to engage with the thread on the said cap, and the inverted condensing chamber *F* secured to the lower end of said stem, substantially as specified. 4th. In a displacement lubricator, the combination of the cap *E*, hollow screw-stem *G* adjustably held in place by said cap, the inverted condensing chamber *F* secured to the lower end of said stem, and the plug *K* fitting loosely in said hollow stem and constructed to stop by its own gravity the flow of oil from the oil chamber, substantially as and for the purposes set forth. 5th. The vessel *A* having inlet aperture *N*, the plug *B* having channel connecting with the pipe *D* and valve seat, the valve *C*, the condensing chamber *F* having the hollow adjustable screw stem *G* and the gravity plug *K* fitting loosely in said hollow stem, the parts being combined, substantially as and for the purposes described.

No. 20,278. Chuck for Holding Gate Valves.

(*Mandrin pour Saisir les Soupapes à Clé.*)

Adolph Weber, Detroit, Mich., U. S., 26th September, 1884; 5 years.

Claim.—A chuck, for the purpose described, consisting of a body provided with the means, substantially as described for securing said body to a lathe head, an adjustable face-plate pivotally secured to said body, screws for adjusting the inclination of said face plate, holding points projecting through said face-plate and the means, substantially as described, for radially adjusting said points, substantially as specified.

No. 20,279. Car-Coupler. (*Accouplage de Wagons*)

Michael C. Crowell, Springfield, Thomas J. Watkins and Nelson Lingle, Jonesboro, Ill., U. S., 29th September, 1884; 5 years.

Claim.—1st. The draw-head *A* having lugs *B*, the rod *C* having levers *C*, the coupling pin *E* and the link *F*, in combination with the adjustable jaw *G*, rod *H*, the levers *H* and double eccentric *H*, as described and for the purposes set forth. 2nd. In a car-coupler, the draw-head *A* having a removable box *I* and rod *H* having levers *H* and eccentric *H*, in combination with the removable box *I*, as described and for the purposes set forth.

No. 20,280. Ejector. (*Ejecteur.*)

Israel P. Wickersham (assignee) William Huston, Wilmington, Delaware, U. S., 29th September, 1884; 5 years.

Claim.—1st. The mode, herein described, of increasing the deficiency of ejectors, the said mode consisting in causing the fluid under pressure or part thereof to deviate from a direct course laterally as it passes inward through the annular communication between an outer steam chamber and the discharge passage, substantially as set forth. 2nd. The combination, in an ejector, of the outer chest or casing *A*, the tube *B* forming the discharge-chamber, the rib *d* forming the termination of the suction-passage with inclined grooves in the end of the said tube, or in the rib where the annular tapering passage forms a communication between the said chest and discharge-tube, substantially as specified.

No. 20,281. Apple Parer.

(*Machine à Peler les Pommés.*)

Henry H. Hebbard, Brookford, (assignee) Frank R. Williams Syracuse, N. Y., U. S., 29th September, 1884; 5 years.

Claim.—1st. The combination, in an apple-parer, of the screw shaft *D* having fork *J*, sliding rod *E* and *H*, cam *J*, paring-knife *K* and knife-head *F* and guideway *R*, substantially as and for the purposes set forth. 2nd. The combination, of the screw-shaft *D* having fork *I*, the sliding rod *E* carrying suitable paring mechanism, driving arm *H*, reciprocating doffer *O* and bent lever *U*, substantially as and for the purposes set forth. 3rd. The combination of the hollow screw-shaft *D* having fork *I*, sliding rod *E* carrying suitable paring mechanism, driving-arm *H*, reciprocating core-discharger *T* and lever *V*, substantially as and for the purposes set forth. 4th. The combination, of the hollow screw-shaft *D* having fork *I*, sliding rod *E*, carrying suitable paring mechanism, driving arm *H*, reciprocating core-discharger *T*, lever *V*, doffer *O* and bent lever *U*, arranged to operate substantially as and for the purposes set forth. 5th. The combination, with the fork and screw-shaft, of an apple-parer, of the reciprocating doffer *O* and bent lever *U* provided with cam *H*, and arranged to be operated from the movement of the paring mechanism, substantially as described. 6th. The combination, with the fork and screw shaft of an apple-parer, of the reciprocating doffer *O* curved rod *m* passing through guide *g* and lever *U*, substantially as and for the purposes set forth. 7th. The combination, with the screw-shaft *D* having fork *I*, of the sliding rod *E*, knife-head *F* and paring knife *K*, arm *H*, nut *a* and cam *J*, the weight *S* and cord *b* passing around the pulley *b* located so as to cause the return movement of the arm, substantially as and for the purposes set forth. 8th. The combination with the screw-shaft and fork of an apple-parer, of suitable reciprocating paring mechanism operated from the screw-shaft pulleys *g*, *g*, and belt snifters *d*, *d*, brake *P*, trip *W* and lever *N*, substantially as and for the purposes set forth. 9th. The combination, with the screw-shaft of an apple-parer, of the pulleys *g*, *g*, sliding rod *C*, belt-shifters *d*, *d*, brake *P*, pin *p*, slotted trip *W*, hand lever *N* and suitable connections between the hand-lever and the rod, substantially as and for the purposes set forth. 10th. The combination, with the screw-shaft of an apple-parer, of the pulleys *g*, *g*, sliding rod *C*, belt shifters *d*, *d*, brake *P*, pin *p*, slotted trip *W* having cam *Cl*, surface *g*, hand lever *N*, arm *D*, slotted connection *E* and pin *cl*, substantially as and for the purposes set forth. 11th. In combination with an apple-parer provided with suitably reciprocating paring mechanism and constructed to be driven by power, the movable trip *W* arranged to operate in connection with the hand lever and spring or weight pulley during the paring operation, substantially as and for the purposes set forth. 12th. The combination, with the screw-shaft and fork of an apple-parer, of the sliding rod *E* carrying suitable paring mechanism, arm *H* and catch *e*, substantially as and for the purposes set forth. 13th. The combination, with the screw-shaft and fork of an apple-parer, constructed to be operated by power, of the sliding rod *E*, carrying suitable paring mechanism, arm *H*, cam *J*, catch *e*, hand lever *N* and trip *W*, substantially as and for the purposes set forth.

No. 20,282. Harvester Frame.

(*Charpente de Moissonneuse.*)

The Massey Mfg Co., (Limited) Toronto, Ont., (assignee of William N. Whiteley, Springfield, Ohio, U. S.,) 29th September, 1884; 5 years.

Claim.—1st. In a harvester-binder, a main frame adapted to receive the bearing for the main waeel and the counter-shafts, and gearing driven thereby detachably connected to the frame carrying the cutting apparatus, elevator and binding mechanism, substantially

as and for the purpose specified. 2nd. The combination of the main frame, the main driving and supporting wheel mounted upon a stationary axle rigidly connected at its ends to the opposite sides of said main frame, and the angle plate 7 which comprises a bearing box for the main wheel pinion-shaft and a clamp 8, whereby the driving wheel is rigidly clamped and held for the purpose of holding the master wheel and its pinion firmly in gear. 3rd. The main frame provided with the boxes 8, 9, in combination with the stationary axle 6, the main driving wheel rigidly connected at each of its ends to the said boxes and the main frame on each side of the main driving wheel for the purpose of giving rigidity to the main frame as well as a support for the main wheel. 4th. The combination of the box 7 provided with the clamp-box 8 and the pinion shaft box with removable cap 12, to support the main axle 6 of the main wheel 3 and the counter-shaft 13 for the purpose of strengthening the frame and renewing side bearings when worn. 5th. The combination of the stationary axle 6 of the main driving-wheel provided with a screw-nut at its extremity, the face-gear 4 upon the main wheel, and the adjustable box 9 upon the opposite end of the axle 6 for the purpose of setting the face gear and keeping the same in proper adjustment against the pinion. 6th. The combination, of the main wheel 3 provided with the driving gear 4 upon the main wheel 3, and the pinion shaft 13 provided with the pinion 5, gear and sprocket-wheel for giving motion direct to the elevating and binding apparatus by the single gear only, substantially as and for the purpose shown. 7th. The main driving and supporting wheel, with the face or bevel gear, combined with a single counter-shaft driven by the said bevel gear, whereby motion is communicated directly from the main driving wheel to the elevating and binding apparatus and cutters, substantially in the manner shown. 8th. The combination, of the main driving and supporting wheel carrying the bevel or face gear, the bevel pinion shaft 13 extending rearward and the secondary pinion or counter shaft extending forward for the purpose of giving motion direct to the knives at the front and motion direct to the elevating and binding apparatus from the rear, as shown and described. 9th. The combination of the angle box plate 16 fitted to the angle of the frame and provided with boxes 17 and 18 for retaining the said boxes in place relatively and to stiffen and hold the main frame square. 10th. The shaft provided with a tapered or conical end, combined with a key 29, the wheel being fitted to the said tapered end and to the key for the purpose of holding the wheel firmly in its seat and yet render it easy to be removed, as set forth. 11th. The tubular box 17 provided with the lug 24, combined with the bushing or thimble bearing 11 fitted to the said box and to the shaft, the notch 23 interlocking with a stud to prevent the rotation of the bushing, as set forth. 12th. A clutch made to turn freely on the shaft 13 and attached to the pinion, a clutch collar 14 longitudinally movable on the shaft 13 but prevented rotating thereon, and the clutch spring 35 combined with the clutch-fork 31 pivoted to the frame the connecting-rod 34 and the crank clutch rod 32, all arranged in such a manner that during no time of the operation of the machine whether said pinion shaft is at work or idle will the shift mechanism receive wear from the running parts of the machine.

No. 20,283. Car-Coupler.

(Accouplage de Wagon.)

William Davis and John J. Cooper, Abilene, Kansas, U.S., 29th September, 1884; 5 years.

Claim.—The combination, with the draw head having a cavity provided with a central slot and a vertical slot at the rear of the cavity, of the lifting plate adapted to receive the ball at one end of the draw bar and provided with a downwardly extending pin and stop and an upwardly extending projection, whereby the cars may be uncoupled when desired, substantially as specified.

No. 20,284. Lubricator for Shafts.

(Graisseur pour Arbres de couche.)

Charles Page, Louis Gouillard and Thomas F. G. Foisy, Montreal, Que., 29th September, 1884; 5 years

Claim.—The lubricating device, herein described, consisting of the chain E, oil dish D and hook or guide F, arranged in said dish, in combination with a shaft and journal box, substantially as and for the purpose specified.

No. 20,285. Safety Railway Car and Rail.

(Wagon et Rail de Sûreté.)

Jeanty Dénéchaud Sr., San Francisco, Cal., U.S., 29th September, 1884; 5 years.

Claim.—1st. In a safety railway car, an arched arm or arms suspended under the car and carrying in their ends rollers in combination with a mechanism for projecting or inserting said rollers, within the grooves of the rails and with drawing them therefrom, substantially as and for the purpose herein described. 2nd. In a safety railway car, the bent arms E, carrying rollers G and the piece C to which their inner ends are pivoted, in combination with the toggle F bearing a spindle D and means for raising and lowering said spindle, substantially as and for the purpose herein described. 3rd. In a safety railway car, the frame J having the slotted guides H, the bent arms E passing through said guides and having rollers G and the piece A to which said arms are pivoted, in combination with the toggle F passing through slotted guides H bearing a spindle D, and means for raising and lowering said spindle, substantially as and for the purpose herein described. 4th. In a safety railway car, the arched rigid arm L carrying rollers G and the spindle D, in combination with a mechanism for turning, raising and lowering said spindle, substantially as and for the purpose herein described. 5th. In a safety railway car D, in combination with the means for turning, raising and lowering said spindle consisting of the arm K on the spindle cam J, on the frame crank-arm E1 on the top of the spindle, bent rod G1, elbow lever I and inclined plane F1 on the car, substantially as and for the purpose herein described. 6th. In a safety railway car, the arched rigid

arm L carrying rollers G and the spindle D having crank-arm W, in combination with the lever I connecting bar r between said lever and crank elbow-lever W having a forked end embracing the spindle under the crank and a stud y at its angle, and the bar V slotted on said stud and pivoted to lever I, all arranged and operating substantially as herein described. 7th. The rail C having side grooves, in combination with the L shaped clamp or brace C1, the body of which is adapted to fit the groove of the rail and to be bolted thereto and its base to be imbedded in and secured to the cross-tie, substantially as herein described. 8th. The rail C having a flange d, the base of said rail and its flange being imbedded in the cross-tie of the road-bed, in combination with the L shaped brace or clamp C1 having a curvilinear or bulging face of fitting the outer groove of the rail, said clamp being bolted to the rail and having its base imbedded in the cross-tie and spiked thereto, substantially as and for the purpose herein described. 9th. The rail C having the upwardly and downwardly extending lateral flanges d, d1 and side grooves, in combination with the L shaped clamp or brace C1 having a curvilinear or bulging lug or face c1 fitting the outer groove of the rail, and a means for securing the clamp to the rail and the rail and clamp to the cross-tie, substantially as and for the purpose herein described.

No. 20,286. Physician's Buggy Case.

(Trousse de Médecin pour Voiture.)

The firm of A. A. Millier (assignee of James B. Vaughan.) St. Louis, Miss., U.S., 29th September, 1884; 5 years.

Claim.—1st. In a physician's buggy-case, the combination of the two receptacles a, the leather or like cover secured to and extending over both receptacles, and having a small flexible portion h to form a hinge between them and the handle k secured to said flexible portion h, substantially as and for the purposes set forth. 2nd. In a physician's buggy-case, the combination of the two receptacles a having extensions e, the leather or like cover f common to and extending over both, said cover being secured to said extensions and having a small flexible portion h between said joints and the handle k secured to said cover at said portion h, substantially as and for the purposes set forth. 3rd. In a physician's buggy-case, the combination of two receptacles a, the leather or like cover f common to and extending over both, and the handle k having its ends n extending through the portion h of said cover and spread out on the under surface thereof and riveted thereto, substantially as and for the purposes set forth.

No. 20,287. Fire Extinguisher.

(Extincteur d'Incendie.)

John W. Bishop, New Haven, Conn., U. S., 29th September, 1884; 5 years.

Claim.—1st. The combination of the cylinder A, differential pistons C, D, connected together and movable in said cylinder between said pistons a chamber H, below the piston C, with a limited passage opening from said chamber C to the reverse side of both pistons, substantially as described. 2nd. The combination of the cylinder A, differential pistons C, D, connected together and movable in said cylinder, the inflow passage E opening into said cylinder between said pistons chamber H, below the piston C, a valve opening into the cylinder between said pistons and held in suspension, and a communication out of said valve to the chamber H, below the piston C, substantially as described. 3rd. The combination of the cylinder A, differential pistons C, D, connected together and movable in said cylinder, the inflow passage E opening to said cylinder between said pistons, chamber H below the piston C, a valve opening to said cylinder between the pistons and held in suspension a communication opening from outside said valve to the chamber below the piston C and also to the system of tubes above the piston D substantially as described. 4th. The combination of the cylinder A, differential piston C, D, connected together and movable in said cylinder, the inflow passage E, opening to said cylinder between the said pistons a chamber H, below the piston C, communication to admit water to said chamber H, and an alarm lever connected with said piston, substantially as described. 5th. The combination, of the cylinder, A differential pistons or valves C, D, connected together and movable in said cylinder, the inflow passage opening to said cylinder between said pistons, a chamber B below the pistons H, a passage b, from the chamber between the pistons into the chamber or space beyond the piston or valve of smaller diameter and a valve in said passage, substantially as described. 6th. In a fire extinguisher, a nozzle at which the water is held in suspension by a plug or valve secured by a material fusible at a low degree of heat, a device, substantially such as described, movable under the pressure of the water when liberated to increase the flow opening, combined with a spring acting upon said device and against the pressure of the water, whereby said device will be automatically forced to reduce the flow opening as the pressure of the water upon the device is reduced after having been liberated through the opening of said fusible material, substantially as described. 7th. In a fire extinguisher, a nozzle provided with a seal against the flow of water, fusible at a low degree of heat, a distributor arranged with relation to the nozzle to receive the flow of water when liberated and movable to open a passage for the escape of the water when it is liberated, combined with a spring arranged to bear the distributor against the pressure of water when liberated and so as to act automatically upon the distributor, to reduce the outlet as the pressure from the flowing water is reduced, substantially as described. 8th. The combination of the tube B, sealed with a connection fusible at a low degree of heat, the disk E1 arranged over the end of the tube, a collar E1, around the tube and connected with the disk, the spring M1, around the tube between the collar, and a flange on the tube, the tendency of this said spring being to hold the disk upon the end of the tube, but yield under pressure of water when liberated, substantially as described. 9th. The combination, of the tube B, the plug C1, secured in the tube by a connection fusible at a low degree of heat, the disk E1, constructed with the chamber G1, into which the plug C1 will pass when liberated, the collar K1, around the tube, and connected to the disk E1, the spring M1, between the collar K1, and a corresponding flange on the tube, substantially as described. 10th.

In a fire extinguisher, the tube B, the plug C, secured therein by a connection fusible at a low degree of heat, the disk D of flexible non-fusible material and of larger diameter than the internal diameter of the tube in the tube against the plug, substantially as and for the purpose described.

No. 20,288. Water Wheel. (*Roue Hydraulique.*)

Aaron O. Wheeler, Dundalk, Ont., 30th September, 1884; 5 years.

Claim.—A water-wheel, or wind-wheel, composed of swinging boards or plates C, pivoted between the discs A, in combination with projecting ledges a, arranged, substantially as and for the purpose specified.

No. 20,289. Whip. (*Fouet.*)

Samuel Baker, Buffalo, New York, U. S., 30th September, 1884; 5 years.

Claim.—As an improved article of manufacture, a whip A, consisting of two semicircular strips B, B, and a central strip of prepared buckskin C, the parts being united together, substantially in the manner as and for the object specified.

No. 20,290. Fire-Proof Paint.

(*Peinture Réfractaire.*)

Edward A. Smyth, St. Catharines, Ont., 30th September, 1884; 5 years.

Claim.—As an improved fire-proof paint, a composition composed of bog-iron, ore, and red sand-stone, crushed, ground and otherwise prepared as described and mixed together, substantially in the proportions herein specified.

No. 20,291. Machine for Preparing Hoops.

(*Machine à Préparer les Cercles*)

Henry F. Campbell, Concord, N. H., U. S., 30th September, 1884; 5 years.

Claim.—1st. In mechanism for bending hoop, stock rounded on one side e, having bark thereon. The crimping roller to act upon the planed side of the said hoop, stock and an endless travelling yielding belt to operate, substantially as described. 2nd. The yielding belt or bed and crimping or fulcrum roller combined with a hoop lifting roller to effect the bending of the hoop over the said crimping or fulcrum roller, substantially as described. 3rd. The yielding belt or bed crimping, or fulcrum roller above it and the hoop lifting roller combined with a hoop discharging device, substantially as shown and described. 4th. The endless travelling belt and rollers G, F, d, to support it, combined with the positively rotated hoop lifting roller made adjustable, substantially as and for the purpose described. 5th. The endless belt, its supporting rollers G, F, d, and positively rotated roller c, and rollers d² b², combined with the presser O, and rotating cutter B, and bed roll D to operate, substantially as described. 6th. In a machine for preparing hoops, a feed roller having its surface composed of disks of material of different density, the more flexible disks first coming in contact with the bark on the hoop, substantially as described. 7th. The combination, substantially as shown and described, in a barrel hoop machine of the rotary cutters, a table to support the hoop while being pointed, a block fast to the framing and supporting such table, and a V-shaped gage beneath said table, and adjustably held in said block to make a variable V-shaped pocket between said block and one of the cutters to bevel the hoop, as set forth. 8th. The block, provided with a rest for one edge of the hoop to be bevelled, a table to support the hoop while being pointed, and a cutter combined with the pivoted and adjustable wedge shaped gage 14, substantially as shown and described and for the purpose specified. 9th. The block provided with a rest for one edge of the hoop to be bevelled, a table and a cutter combined with an adjustable gage to enable the pocket between the said rest and table to be made more or less tapering from edge to edge, substantially as described. 10th. The combination substantially as shown and described, of a block provided with a rest for one edge of the hoop to be bevelled, a table to support the hoop while being pointed, cutters, a pivoted and adjustable wedge-shaped gage and guide rollers to direct the stuff while being rounded and bevelled, as set forth.

No. 20,292. Composition of Matter for House Decorating and Ornamental Graining. (*Composition pour Décoration des Edifices et Peinture d'Ornement.*)

Thomas Head, Capetown, Ont., 30th September, 1884; 5 years.

Claim.—A compound, composed of tincture of arnica, acetic acid, white glue, common vinegar and oil of turpentine, in the proportions for the purpose specified.

No. 20,293. Loom for Weaving.

(*Métier de Tisserand.*)

George Keighley, Burnley, Eng., 30th September, 1884; 5 years.

Claim.—1st. The use of a clutch box and levers for operating the same, in combination, with positive letting off and taking up mechanism, such as shown and described. 2nd. The employment of a double set of delivery rollers B, and C, geared together, as shown and described, so that warps of unequal lengths may be woven and used up at the same time. 3rd. The method of operating the vibrating rod D, by cams or eccentrics, as herein shown and described. 4th. The construction of crank arms, in manner, substantially as shown and described.

No. 20,294. Improvements in Horse Shoes and in the Fastening of Shoes to the Feet of Horses or other Animals. (*Perfectionnements aux fers à Cheval et à la Manière de Ferrer les chevaux et autres Animaux.*)

Arthur L. Willson, Eglinton, Ont., 30th September, 1884; 5 years.

Claim.—The combination of a sectional horse shoe A, A, with the clips a a a and the rods B, B, substantially as and for the purposes hereinbefore set forth.

No. 20,295. Waggon. (*Voiture.*)

Norman J. Warner, Bracebridge, Ont., 30th September, 1884; 5 years.

Claim.—1st. In an improved waggon arm and stake, the combination of the rest H, bolt K, clip J, tennon L and lug P, substantially as and for the purpose hereinbefore set forth. 2nd. In an improved waggon arm and stake, the combination with the rest H, bolt K, clip J, of the hook G, and truss rod D, substantially as and for the purpose hereinbefore set forth.

No. 20,296. Twine Cutter. (*Coupe-Ficelle.*)

John Darling, Glasgow, Scotland, 30th September, 1884; 5 years.

Claim.—1st. Twine or spring cutters, constructed substantially as hereinbefore described and shown upon the accompanying drawings, wherein the screw p is provided for the purpose of adjusting the blades a and b, cons quent on the wearing thereof. 2nd Twine or string cutters, constructed substantially as hereinbefore described and shown upon the accompanying drawings, wherein the upper surface of the blades a and b are ground to an angle descending towards the cutting edges for the purpose of directing the twine or string to the cutting edges thereof. 3rd. The mode of attaching twine or string cutters, constructed as hereinbefore described, to string boxes or counters or other places by means of wire rings g, and slots e and f, substantially as hereinbefore set forth and shown upon the accompanying drawings. 4th. The modified arrangement of twine or string cutter, wherein the spring u is attached to the underside of the blades or cutters, substantially as hereinbefore set forth, with reference to figure 6 of the accompanying drawings.

No. 20,297. Boxe for Shipping Eggs.

(*Boîte à Transporter les Oeufs.*)

Emery P. Auger, Sr., Jaffrey, N. H., U. S., 30th September, 1884; 5 years.

Claim.—1st. In an egg-carrier, the combination, with a series of trays arranged one above the other, and provided with egg-openings, of a series of rem-ovable retaining clothes placed one on each tray and capable of being depressed into the egg openings, the cloth covering each tray being held in place b, the next upper tray, substantially as set forth. 2nd. The combination, with the trays having egg-openings and depending edge cleats, of the retaining cloths placed on the trays and depressed within the egg-openings and having their edges extended under and held by the edge cleats of the next tray above, substantially as set forth.

No. 20,298. Brick, &c., Elevator.

(*Elevateur pour Briques, &c.*)

James Tomlin, Otterville, Ont., 30th September, 1884; 5 years.

Claim.—As an elevator for brick, stone, or other material, the combination of the reels or drums over the pulleys F, and wotting on the platform G, with the ropes E passing D, the whole being attached to a frame A, B, as shown and for the purpose specified.

No. 20,299. Production of Metallic Solutions. (*Production de Solutions Métalliques.*)

Charles R. A. Wright, Maida Vale, Eng., 30th September, 1884; 5 years.

Claim.—1st. The conversion of metallic copper, either in the form of precipitated metal, or in lumps, filings, borings, cuttings, or other fragments of ordinary metallic copper or copper-heat, into solutions of cuprammonium hydrate by immersing the copper in watery solutions of ammonia, and blowing a stream of air, or of air mixed with ammonia gas through the whole, substantially as described. 2nd. The conversion of fragments of metallic copper into solution of cuprammonium hydrate by allowing water or a watery solution of ammonia, or a weak solution of cuprammonium hydrate to trickle over the fragments loosely piled up in a convenient vessel through which a stream of air mixed with ammonia gas is caused to pass substantially as described. 3rd. The conversion of fragments of metallic copper into solution of cuprammonium hydrate by passing a stream of air through a watery solution of ammoni or solution of cuprammonium hydrate containing ammonia in which copper is immersed, and afterwards leading off such streams of air into and through a tower or towers filled with fragments of copper ore, which water or a watery solution of ammonia is allowed to trickle, and subsequently utilizing the weak solution of cuprammonium hydrate thereby obtained, substantially as described. 4th. The conversion of fragments of brass or other similar zinc, copper alloys, or of a mixture of fragments of copper and brass into solutions containing both zinc ammonium and cuprammonium hydrates by treating them substantially in any of the ways by which copper alone is hereinbefore directed to be treated in order to convert it into solution of cuprammonium hydrate.

No. 20,300. Attaching Buttons to Fabrics and other Materials. (*Manière d'attacher les Boutons aux Tissus et autres Matériaux.*)

Thomas F. Atwood, Boston, Mass., U. S., 30th September, 1884; 5 years.

Claim.—1st. The herein-described method of attaching buttons by means of a wire fastening to fabrics or other materials composed of two or more thicknesses, consisting in first passing the said fastening device through one or more of said thicknesses, and through a portion of the next thickness, and then leaving united ends of said fastening device between two of said thicknesses, substantially as and for the purpose set forth. 2nd. The herein-described method of attaching buttons by means of a wire fastening to fabrics or other materials composed of two or more thicknesses, consisting in first passing the fastening through one or more of said thicknesses, then twisting the two ends of the fastening together, and leaving them between two of said thicknesses, substantially as and for the purpose described. 3rd. The herein-described method of attaching buttons by means of a wire fastening to fabrics or other materials composed of two or more thicknesses, consisting in first passing the fastening through one or more of said thicknesses twisting the two ends of the fastening together, and doubling back the twisted portion as shown, substantially as and for the purpose set forth. 4th. As an improved article of manufacture, the herein-described device for applying buttons to fabrics or other materials consisting of a wire bent into the form of a staple having two downwardly-projecting arms of unequal length and terminating in hooks, whereby the said arms may be drawn into the said fabric or material for the purposes of securing the button thereto, substantially as set forth.

No. 20,301. Spring Seat for Vehicles. (*Siège à Ressort pour Voitures.*)

George W. Hearley, Toledo, Ohio, U. S., 30th September, 1884; 5 years.

Claim.—1st. In a spring-seat for vehicles, clamps for securing the springs in position, consisting of grooves *e, e*, and *et, et*, formed by projecting lugs *E, E*, and *Et, Et*, together with correspondingly grooved blocks placed on the opposite edges of the springs *S, S*, and secured firmly together, and about the spring by means of bolts *I, I*, in combination, with suitable means and parts for securing the same to both the seat and the vehicle body, substantially as described. 2nd. In a spring seat for vehicles, the combination of the spring *S, S*, and clamps formed by grooves *et, et*, and by lugs *Et, Et*, fitting on the edges of the spring *S, S*, and held in position by the bolts *I, I*, with the standard *D*, adjustably secured to a bracket resting upon or secured to the vehicle body, whereby the seat may be secured at any desired height, as described and specified. 3rd. In a vehicle spring-seat, the bracket *C, C*, and standard *D*, supporting the spring and adjustably secured to said bracket, in combination with the slotted plate *H*, secured to the upper portion of the spring and the plate *K*, secured to the seat whereby the seat can be reversed independently of the spring and bracket, substantially as described. 4th. In a vehicle spring-seat, the elliptic spring secured to the seat and to the standard *D*, having indented edges adapted to engage with an indented block *V*, said standard and block adjustably secured by means of a bolt to a bracket resting upon the vehicle-body, substantially as shown and described.

No. 20,302. Carriage Top Joint. (*Charnière de Soufflet de Voiture.*)

Thomas F. Van Loven, Kingston, Ont., 30th September, 1884; 5 years.

Claim.—The combination of a socket post *E*, having an annular recess at the top *a*, sleeved part fitting thereon, headed bolt *F*, fitting into post *E*, and pin *G*, passing through the sleeve into the post and bolt to permit the sleeve to pivot on the post and keep the pin in position, as set forth.

No. 20,303. Washing Machine. (*Laveuse.*)

Hiram Pickard, Robert McDonald, Ingersoll, Ont., 30th September, 1884; 5 years.

Claim.—1st. In the above described washing machine, the combination of an oval-shaped tin vessel *A*, with a pair of tubes *B, B*, substantially as shown as specified. 2nd. In combination with the tubes *B, B*, the short tubes *c, c*, with valves *a* controlled by springs *b*, substantially as shown and specified.

No. 20,304. Two-Wheeled Vehicle. (*Voiture à deux Roues.*)

Oswald B. Fysh, Montreal, N. W. T., Canada, 30th September, 1884; 5 years.

Claim.—The combination with the seat or body *a*, and axle *I*, of the bars *B, B*, spring *E*, whiffletree *F*, shafts *C, C*, bars *G, G*, and springs *J*, to operate as described for the purpose set forth.

No. 20,305. Bath. (*Baignoire.*)

Myrtilla C. Booth and John O. Parker, (assignee) George Booth, Toronto, Ont., 30th September, 1884; 5 years.

Claim.—1st. A four-way cock *C*, placed in the junction pipe between the hot and cold water cocks *B*, and provided with seats, as specified, in combination, with the pipes *D* and *E*, arranged, substantially as and for the purpose specified. 2nd. The drain-pipe *H*, connecting with the interior of the bath through the plug-hole *I*, the pipe *D*, arranged to discharge into the bath through the said plug-hole *I*, in combination with a plug *J* seated in the plug-hole *I*, below the point where the pipe *D* connects with the said hole. 3rd. The waste-pipe *K*, connected to the basin *F*, in combination with the elbow socket *L*, arranged to support the pipe *K*, and connected to the interior of the basin *E*, with the overflow pipe *G*. 4th. A drain-pipe *H* attached to the bottom of the bath and provided with a trap *N*, substantially as and for the purpose specified. 5th. A wash-basin, suspended over a bath, substantially as and for the purpose specified.

No. 20,306. Staples for Fences. (*Crampes pour Clôtures.*)

Curtis A. Brainard, Joliet, Ill., U. S., 30th September, 1884; 5 years.

Claim.—The staple described, having its head re-enforced and strengthened by means of the integral additional metal *R*, formed of a portion of the rib *R*, of the strip *S*, by means of shearing the staple from the diagonal end of said strip, and having its points bevelled in opposite directions, substantially as and for the purpose set forth.

No. 20,307. Car-Coupling. (*Accouplage de Wagons.*)

Datus L. Hays, Movers Forks, N. Y., U. S., 30th September, 1884; 5 years.

Claim.—1st. In a car-coupling, the combination, with the lower stationary jaw of the pivoted upper jaw having an encircling bail and closing spring, as set forth. 2nd. In a car-coupling, the combination with the lower stationary jaw of the pivoted upper jaw having a bail and closing-spring and levers connected to the upper jaw, and to the car-body to uncouple the cars, as set forth. 3rd. In a car-coupling, the combination, with the lower jaw of the draw-head having vertical sides in rear of its face-flange of the pivoted upper jaw the bail and flat spring connected to the bail and to the stem guide of the draw head and levers connected to the car-body, and to the pivoted jaw of the draw-head, as set forth.

No. 20,308. Ironing Board. (*Planche à Repasser.*)

Peter F. Weber, Columbus, Ind., U. S., 30th September, 1884; 5 years.

Claim.—1st. The combination, with an ironing board having a groove in its upper face around the same near the outer edge and the spring clamp adapted to spring into said groove for the purpose set forth. 2nd. The combination, with the ironing board having a groove *M*, inclining outward and downward of the clamp hinged to said board provided with a handle and adapted to enter said groove, as set forth. 3rd. The combination with the ironing board, having an expandible neck ring secured to its upper face, of a removable yielding covering for the said ring, as set forth. 4th. The combination, with the ironing board, of the herein-described neck-ring having its ends overlapping each other, one of the ends being provided with a series of openings to receive a pin on the other end, as set forth. 5th. The combination, with the ironing board having an expandible neck-ring attached to its upper face of the herein-described yielding covering provided with a hole at one end, a hook at the other end and a series of holes near the hook, as set forth. 6th. The combination, with the ironing board of the expandible neck-ring fitted to the upper face thereof, and provided with means for increasing or decreasing the circumference thereof, and a headed stud attached to a block, and passing through the ring, said block being held at any suitable point, as set forth. 7th. The combination, with an ironing board, of the expandible neck-ring, a sliding block connected to the same and means for securing said block in different position, for the purpose set forth.

No. 20,309. Sulky Plow. (*Charrue à Siège.*)

Jacob H. Barr, (assignee) Samuel W. Barr, Mansfield, Ohio, U. S., 30th September, 1884; 5 years.

Claim.—1st. The combination, in a plow, of a rear wheel having a hollow axle or journal, and a spindle or bolt passing through the axle, and secured at one end to the landside, and at the other end to a vertical arm depending from the standard, said spindle serving as a journal for the wheel and a brace or spreader between the landside and standard, substantially as shown and described. 2nd. The combination, with the beam *A*, and tongue *B*, of the curved bar *C*, forming one side of the vertical hinge between the beam and tongue block *Y*, pivot block *W*, and lever connection *J, M*, substantially as shown and described. 3rd. The combination, with the tongue and plow-beam of the block *Y*, socket *Q*, springs *S*, bolt *R*, and hinge-plates, substantially as described and for the purpose set forth. 4th. The combination, with a plow of a standard *D*, the shank, bolted to the standard and of a wheel *H*, substantially as herein shown and described.

**CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO
THE FOLLOWING PATENTS.**

268. J. D. BURBANK and J. W. ATKINS, 2nd 5 years of No. 10,419, from the 3rd day of September, 1884. Improvements on Machines for Working Butter, 2nd September, 1884.
269. The Consolidated Middlings Purifier Co., (assignee), 2nd 5 years, of No. 10,421, from the 3rd day of September 1884. Improvements in the Means for Cleaning the meshes of Bolting Screws, 3rd September, 1884.
270. W. L. STRONG, 2nd 5 years of No. 10,507, from the 4th day of October, 1884. Improvements on Processes and Apparatus for Preserving Flesh for Food, 9th September, 1884.
271. M. COVEL, 2nd 5 years of No. 10,443, from the 12th day of September, 1884. Improvements in Machines for Sharpening Saws, 11th September, 1884.
272. W. G. BUDLON, 2nd 5 years of No. 10,461, from the 18th day of September, 1884. Improvements in Boot and Shoe Pegging Machines, 18th September, 1883.
273. J. P. PERKINS, C. C. JONES, 2nd 5 years of No. 11,902, from the 26th day of October, 1885. Improvements on Spikes for Railway and other purposes, 22nd September, 1884.
274. M. BRAY, (assignee) 2nd and 3rd 5 years of No. 10,502, from the 2nd day of October, 1884. Improvements on Tubular Rivets, 22nd September, 1884.
275. The Suspension Car Truck Co., (assignee) 2nd 5 years of No. 10,481, from the 24th day of September, 1884. Improvements on Car Trucks, 23rd September, 1884.
276. A. E. McDONALD and O. G. BRADY, 2nd 5 years of No. 10,480, from the 23rd day of September, 1884. Improvements on or applicable to Switches for Railways, 23rd September, 1884.

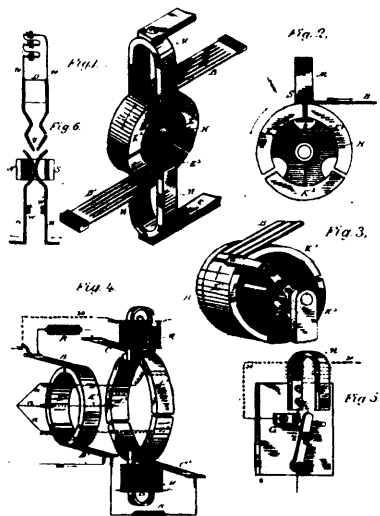
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

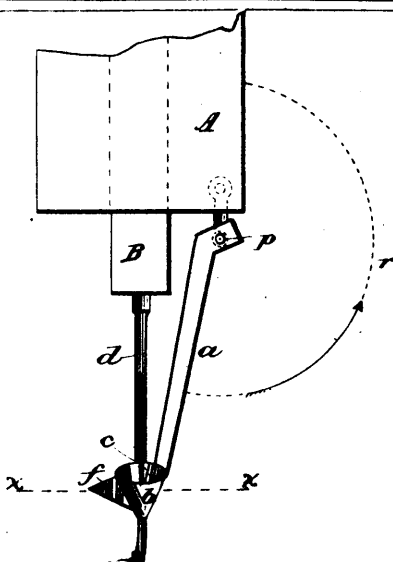
Vol. XII.

OCTOBER, 1884.

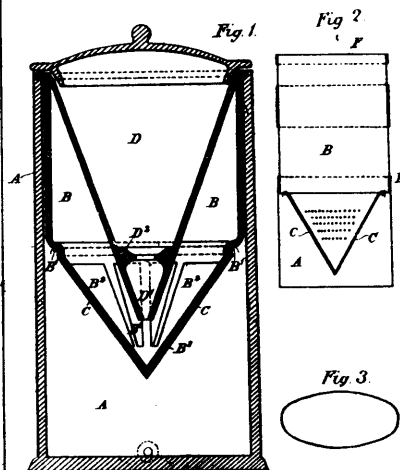
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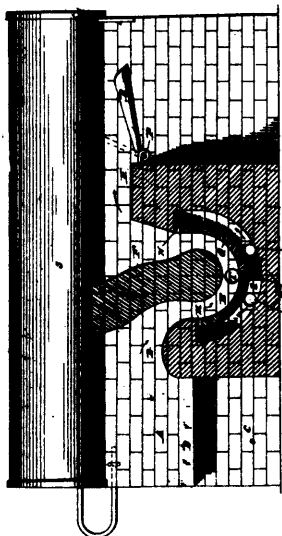
20089 Thomson's Electric Commutator.



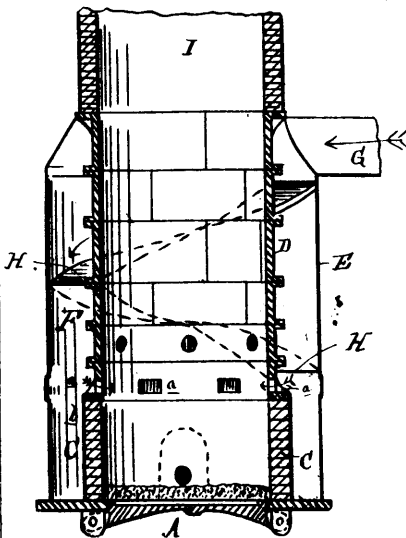
20080 McPherson's Needle Threader for Sewing Machines.



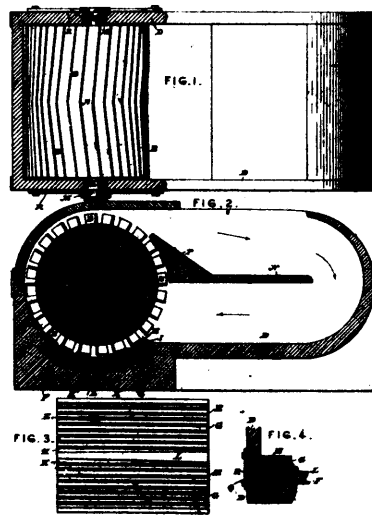
20081 Jackson's Appliance for Filtering Water, &c.



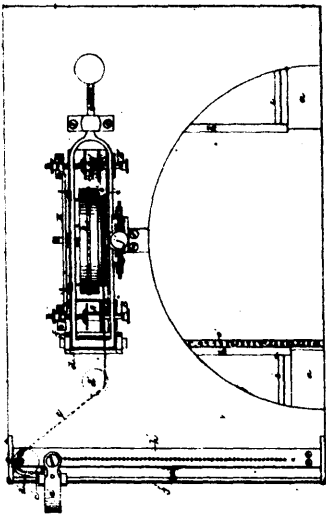
20092 Hall's Boiler Furnace.



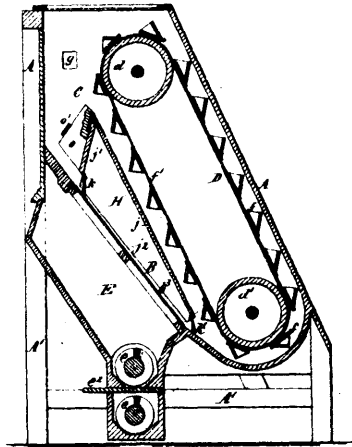
20083 Collian's Furnace.



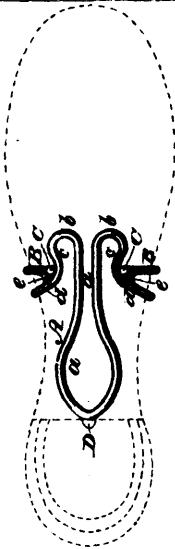
20094 Hoyt's Rag Engine for Paper Making.



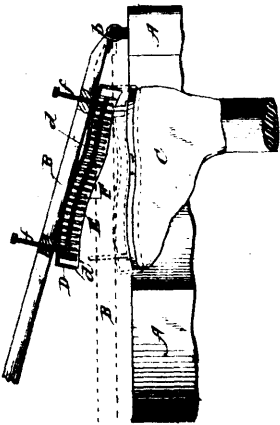
20095 Gilman's Type Writer.



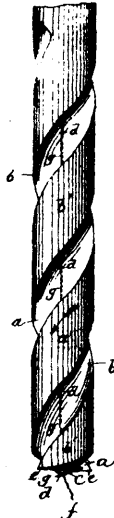
20096 Morse's Bolting Apparatus.



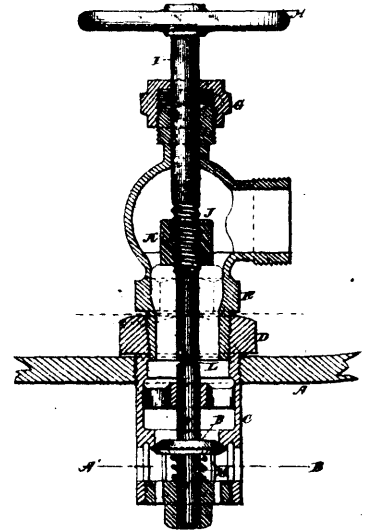
20097 West's Ice Creeper.



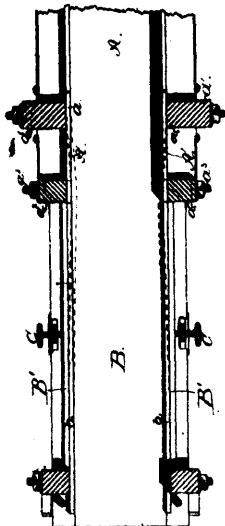
20098 Welsh's Device for Trimming the Soles of Boots and Shoes.



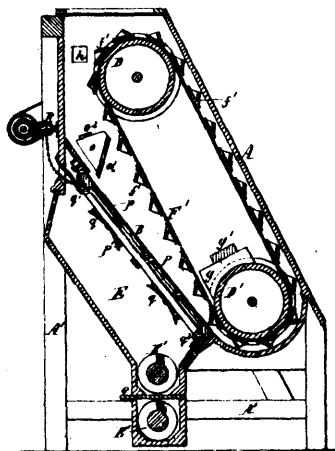
20099 Burroughs' Twist Drill.



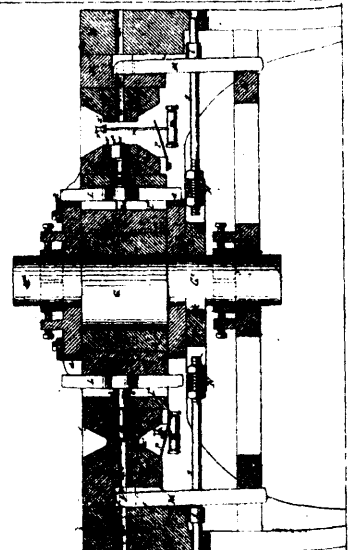
20100 Jerrold & Burgermeister's Valve for Engines and Vessels.



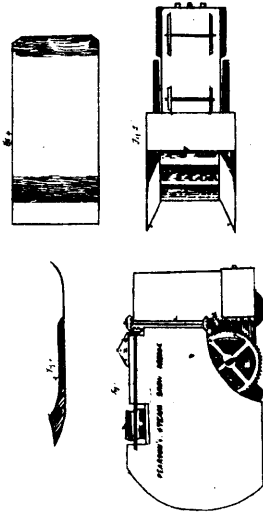
20101 Buckman's Baling Press.



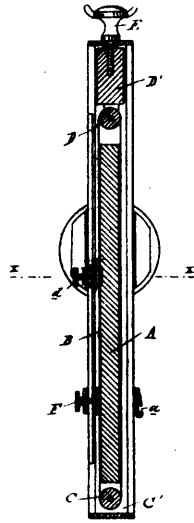
20102 Morse's Flour Bolt.



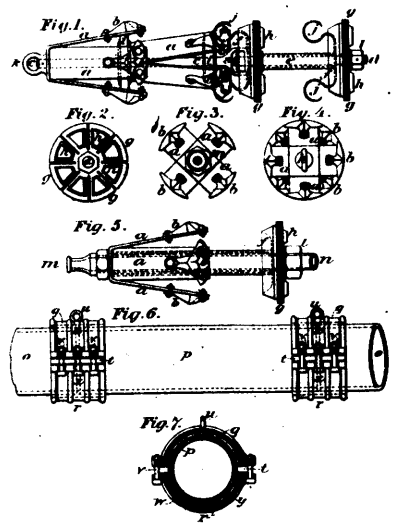
20103 Ashton's Machine for the Manufacture of Nuts and Washers.



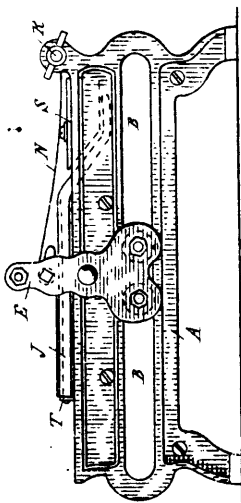
20104 Pearson's Machine for Removing Snow from Railway Tracks and Roads.



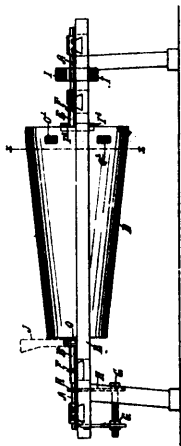
20105 Bean's Levelling Rod and Out Tape.



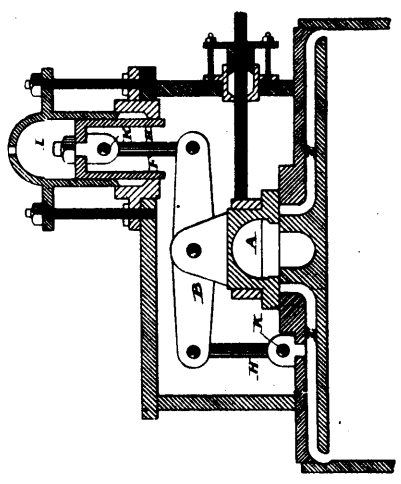
20108 Keating's Apparatus for Removing Incrustations, etc., from Water Pipes.



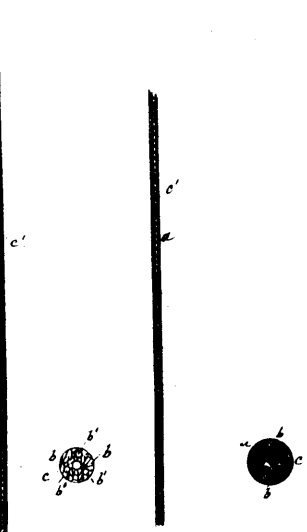
20107 Roberts' Cigar Bunching Machine.



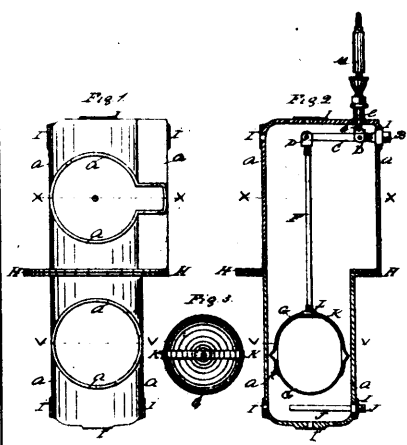
20108 Malcolm's Grain Granulator.



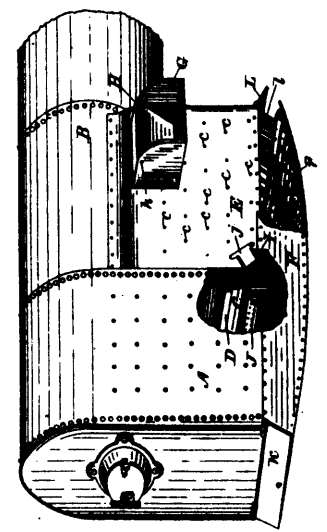
20109 Bewcher's Balanced Slide Valve.



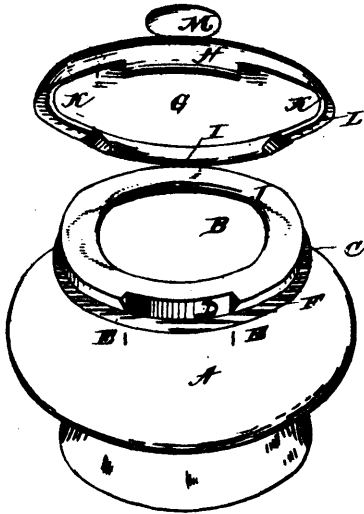
20110 Warren's Featherbone.



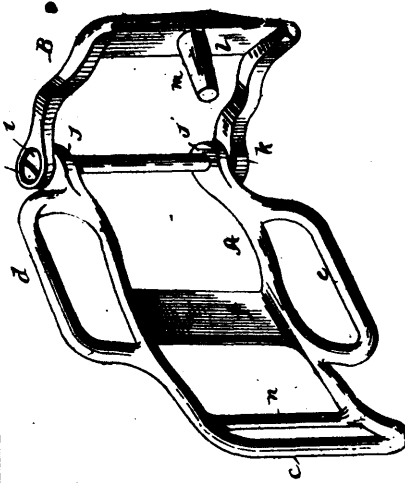
20111 Weldon's Low Water Alarm Gauge.



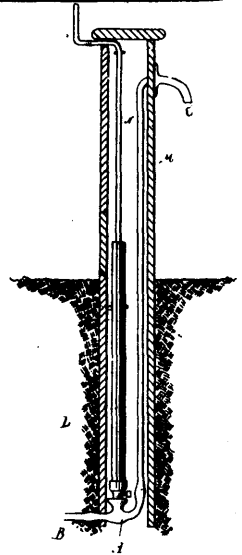
20112 Abell's Straw-Burning Furnace.



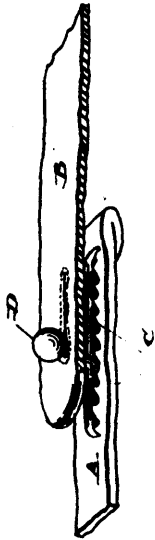
20113 Russell's Dish and other Vessels.



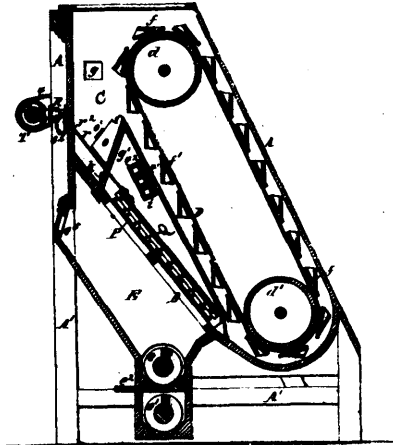
20114 Roles' Buckle.



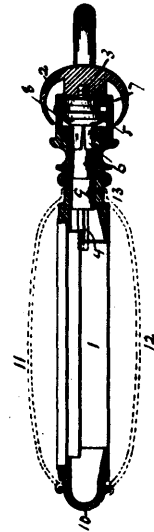
20115 Orbita & Willet's Faucet.



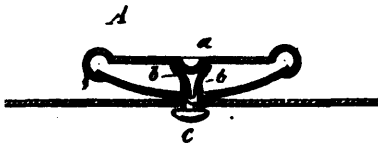
20116 Johnston's Fastening for Boots, Gloves, &c.



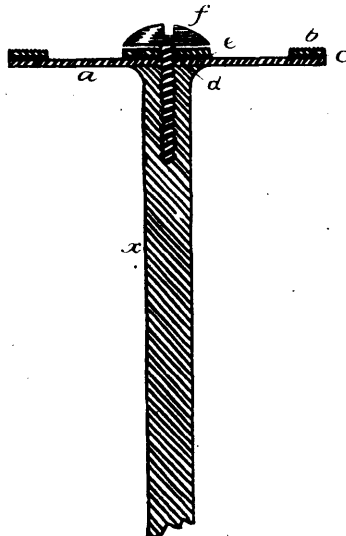
20117 Morse's Middlings Purifier.



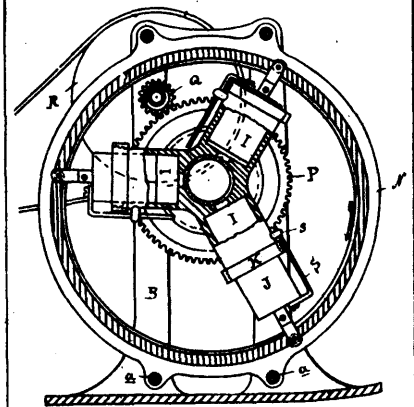
20118 Wood's Winding Stem for Watches.



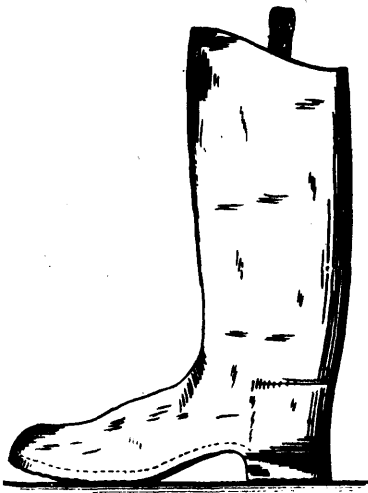
20119 Porter's Button-Fastener.



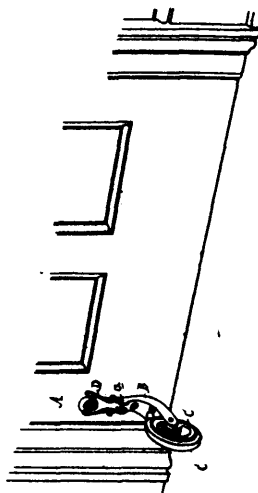
20120 Smith's Flexible Abrasive and Polishing Disks.



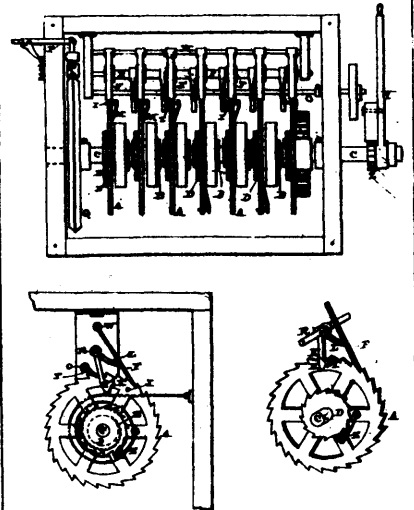
20121 Lenhardt's Rotary Motor and Pump.



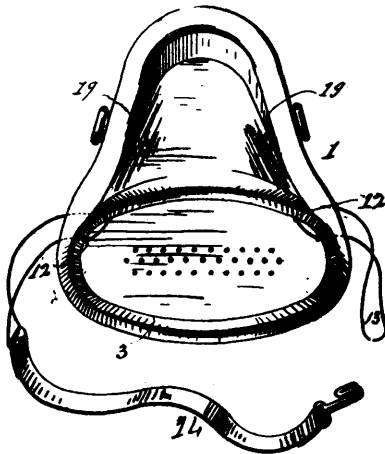
20123 Stout's Boots and Shoes.



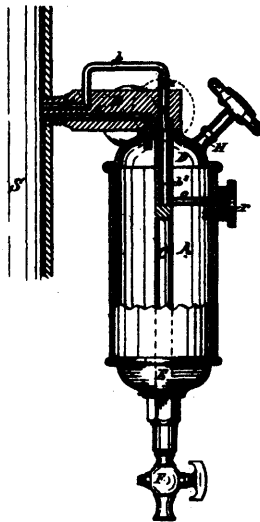
20124 Runyan's Door Stop.



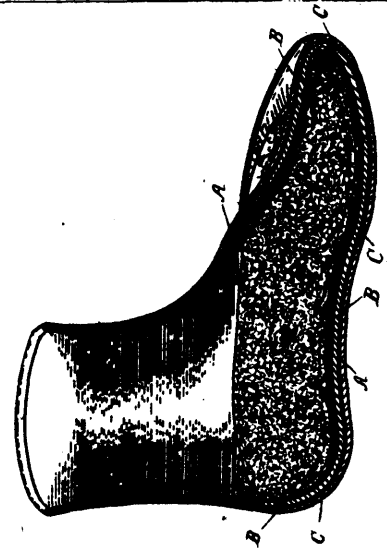
20125 Austin's Spring Motor.



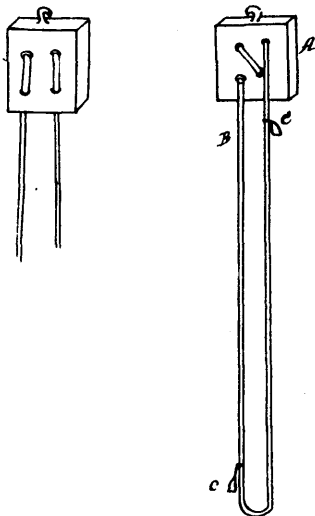
20126 Genese's Respirator.



20127 Swift's Lubricator.



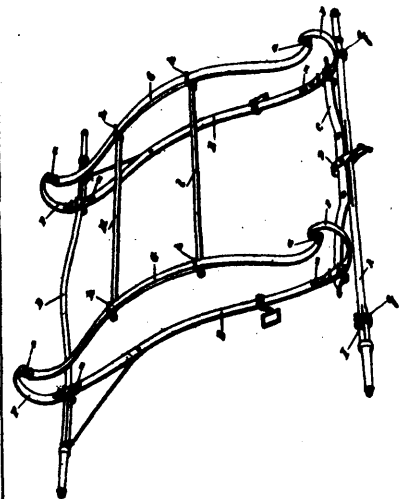
20128 Durocher's Moccasin.



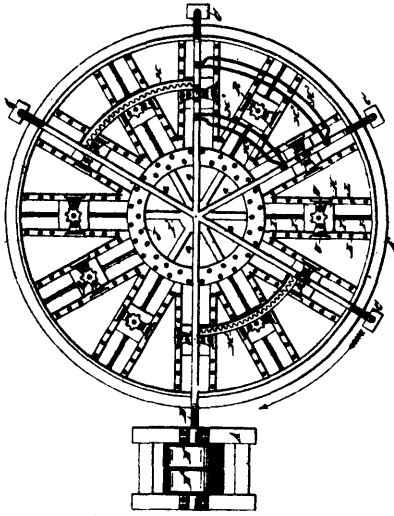
20129 De Bock's Fire Escape.



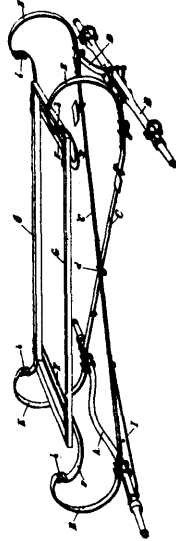
20130 Armstrong's Buggy or Carriage Gear.



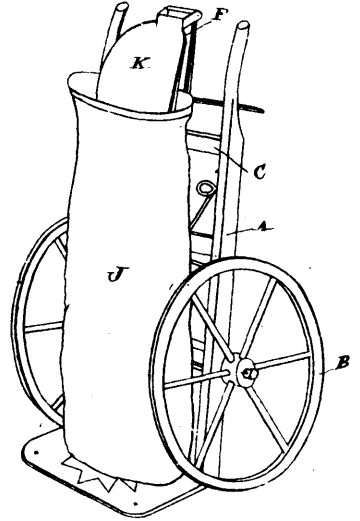
20131 Armstrong's Buggy or Carriage Gear.



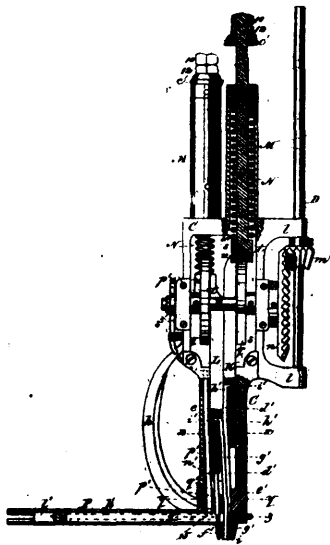
20132 Krell's Machine for Making Glassware.



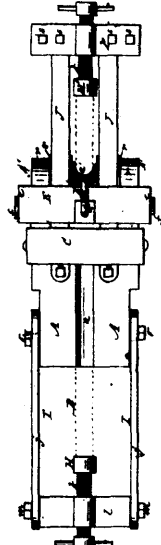
20133 Armstrong's Running Gear for Vehicles.



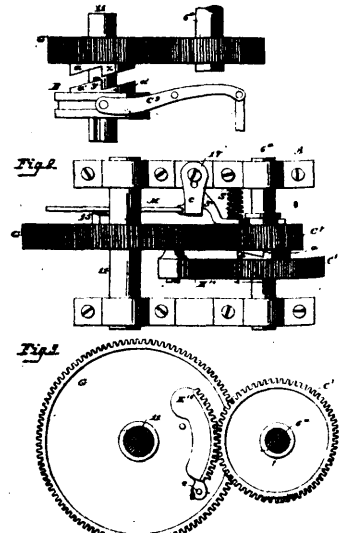
20134 James' Bag-Holder and Truck.



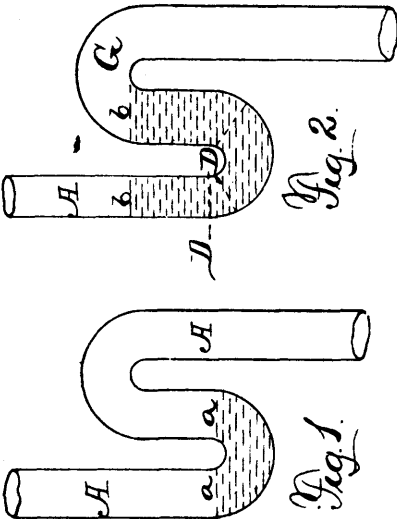
20135 Aldrich's Machine for Lasting Boots and Shoes.



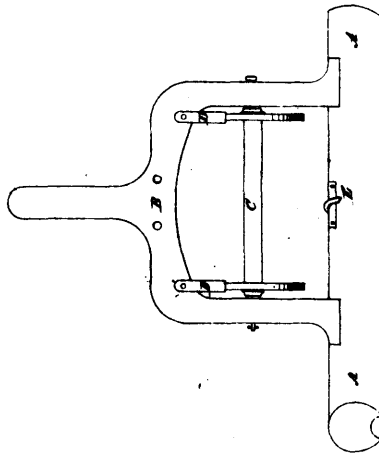
20136 Follett's Apparatus for Bending Tubes and Pipes.



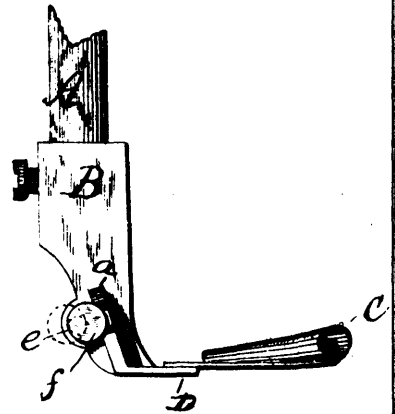
20137 Tetrault's Clutch Device.



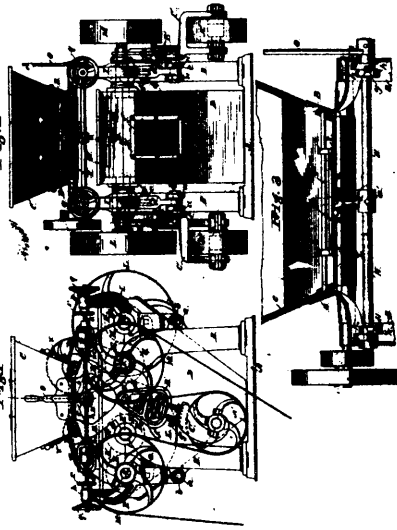
20138 Dark's Plumbers' Trap.



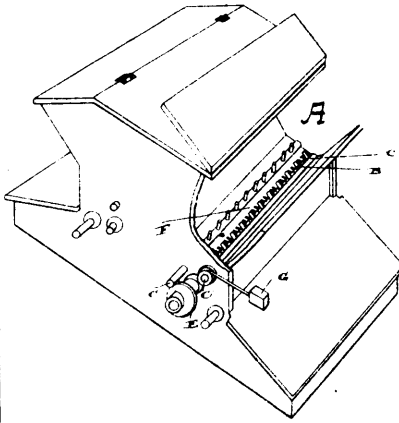
20139 Cotton's Serving Mallet.



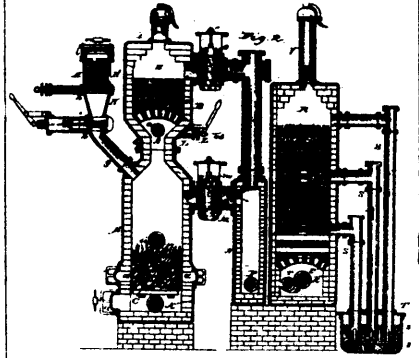
20140 Sackett's Sewing-Machine Attachment.



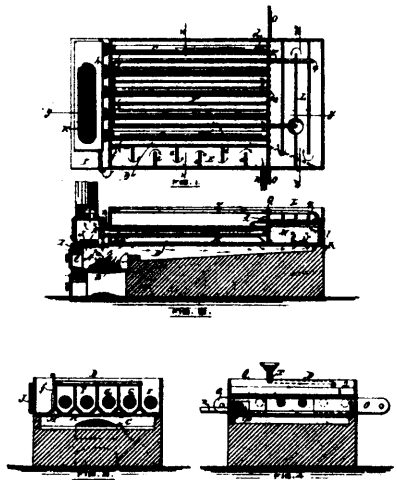
20141 Livingstone's Roller Mill.



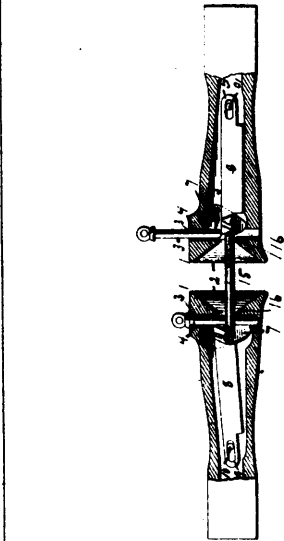
20142 Wilson's Roller Mill.



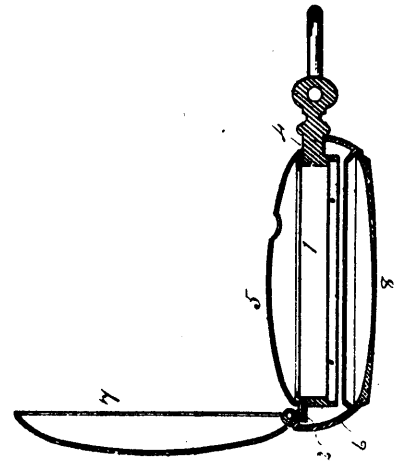
20143 Hanlon's Manufacture of Gas.



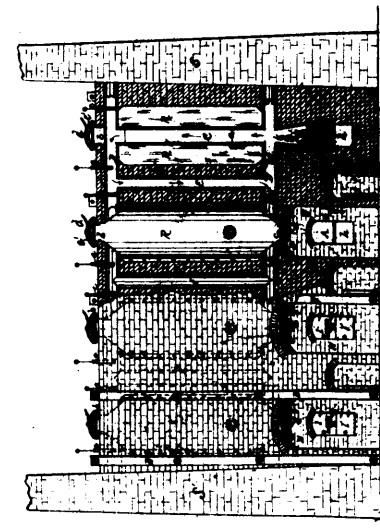
20144 Ewins' Sorghum Evaporator.



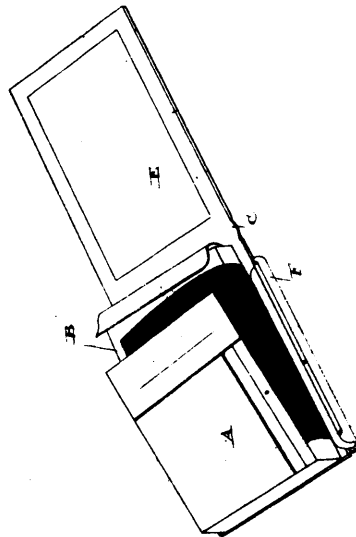
20145 Skinner's Car-Coupling,



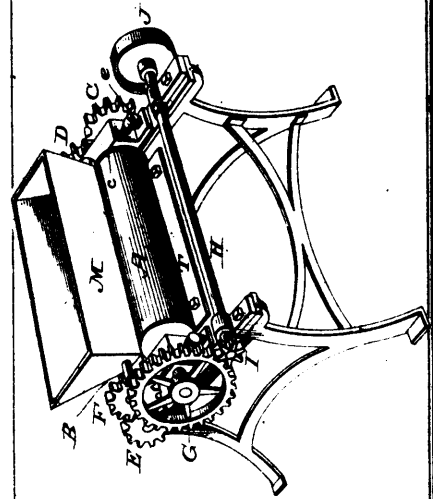
20146 Fahy's Watch Case.



20147 Nellie's Apparatus for Distilling Wood.



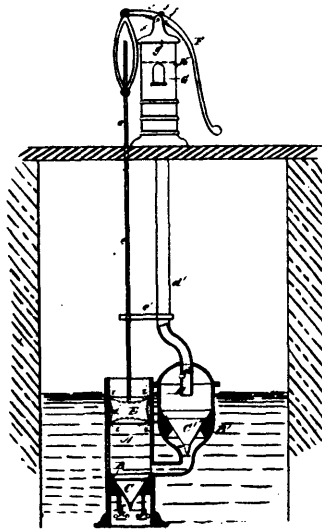
20148 Cooper's Black-Leaf Check-Book.



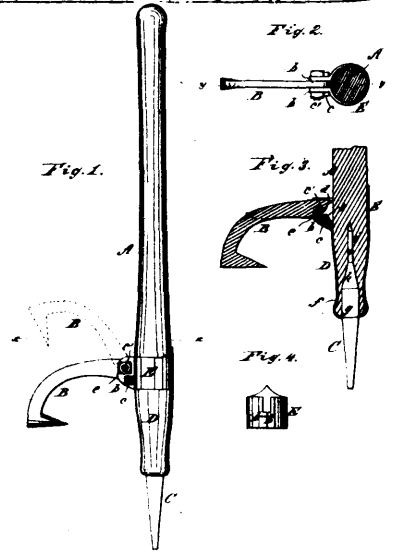
20149 Holbrook's Process of preparing Tan Bark.



20159 Atkinson's Carriage Spring.



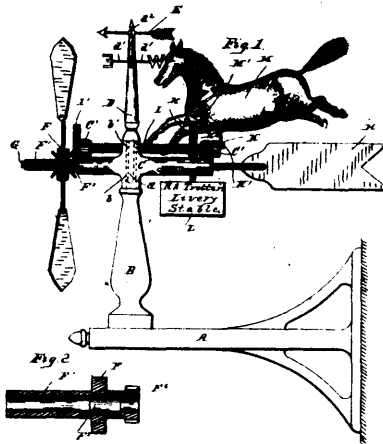
20160 Patterson's Force Pump.



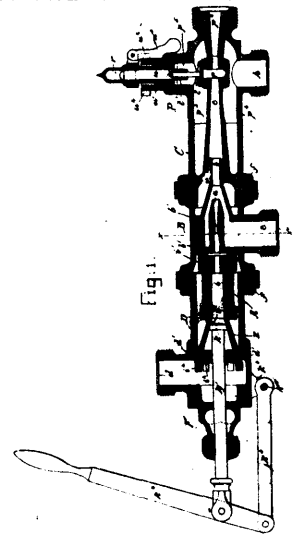
20161 Lord's Cant Hook.



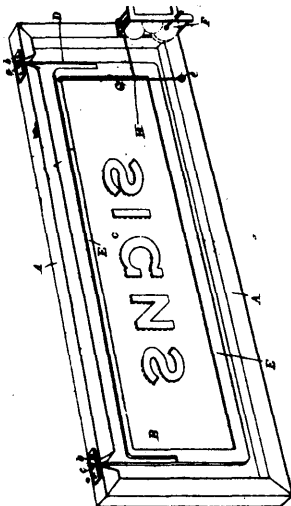
20162 Messinger's Injectors.



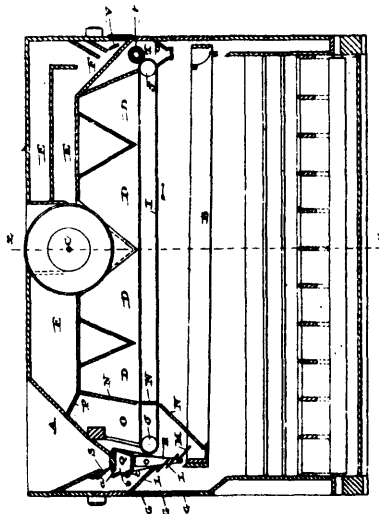
20163 Spencer & Stratton's Advertising Wind Mills.



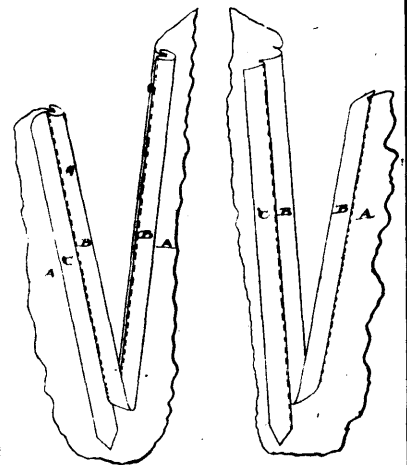
20164 Messinger's Injectors.



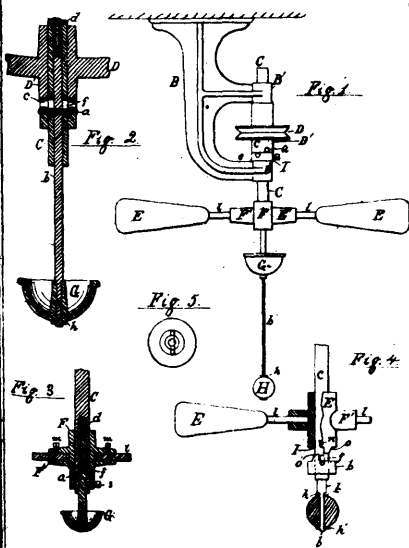
20165 Scales & Davis' Signs.



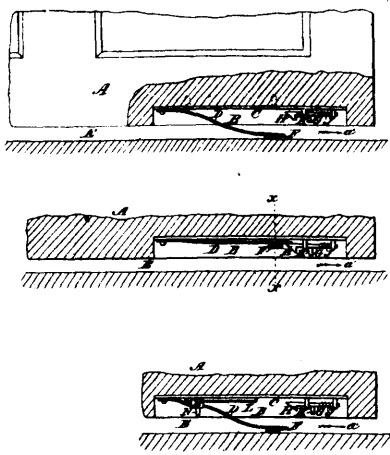
20166 Wilson's Middlings Purifier.



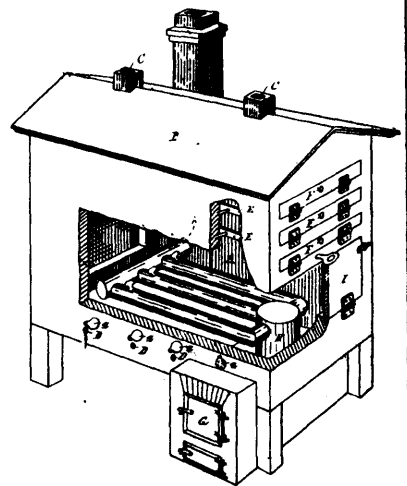
20167 Greene's Shirts.



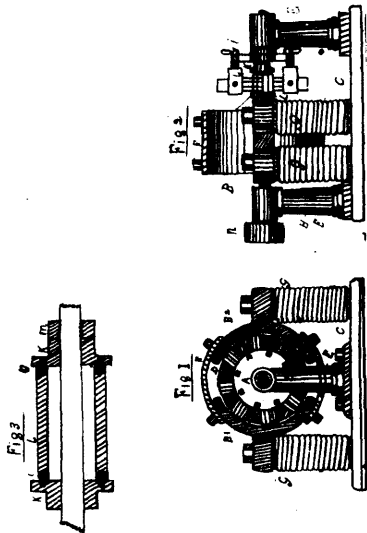
20150 Semour's Rotary Fan.



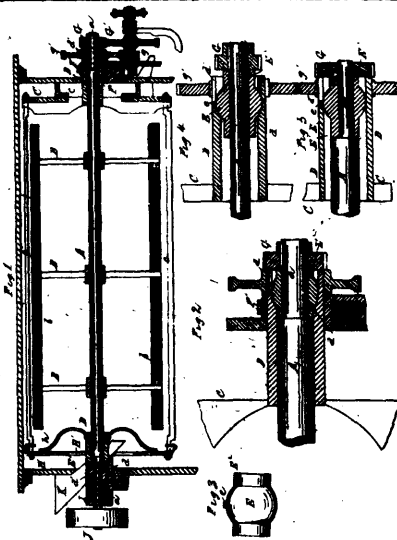
20151 Herriek's Door-Holder.



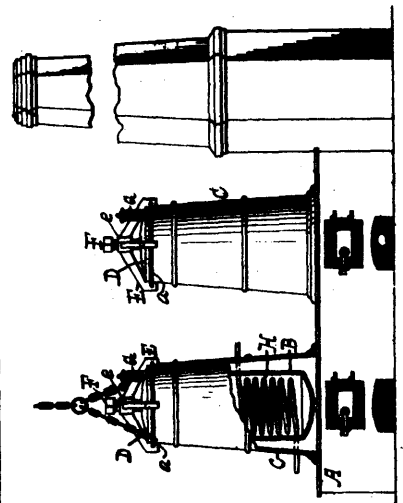
20152 Miller's Fruit Dryer.



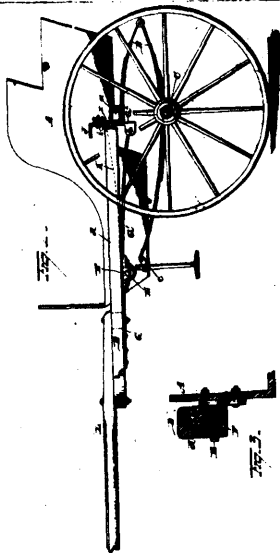
20153 Kay's Dynamo-Electric Machine.



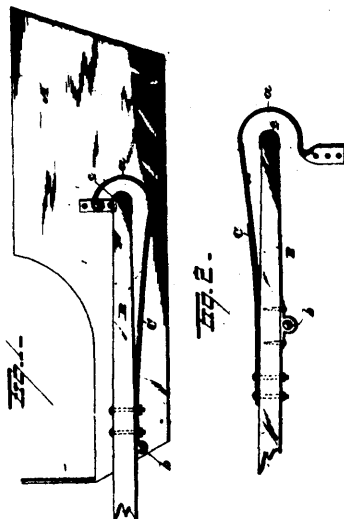
20154 Dickey's Centrifugal Reel.



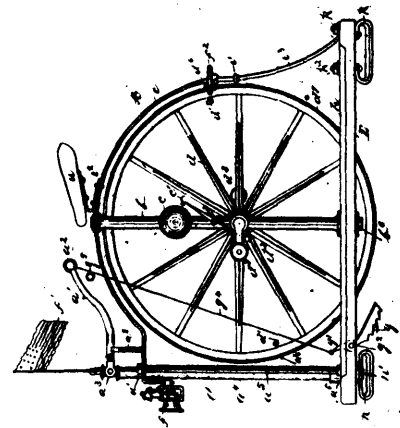
20155 Harris' Manufacture of Fertilizing Materials.



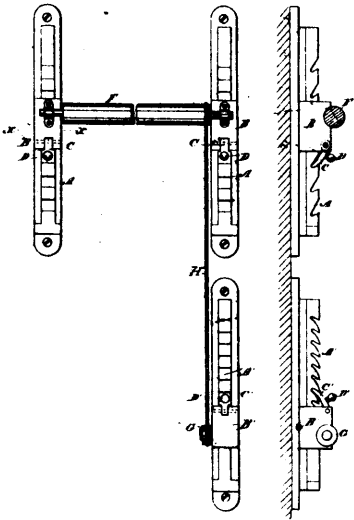
20156 Perry's Two-Wheeled Vehicle.



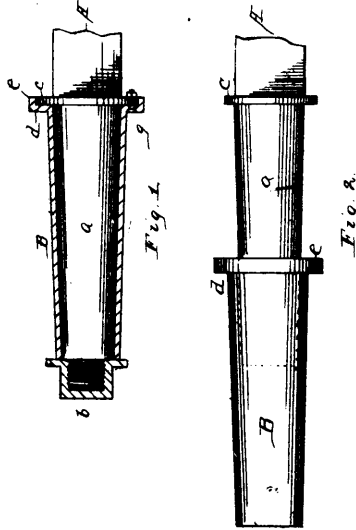
20157 Perry's Two-Wheeled Vehicle.



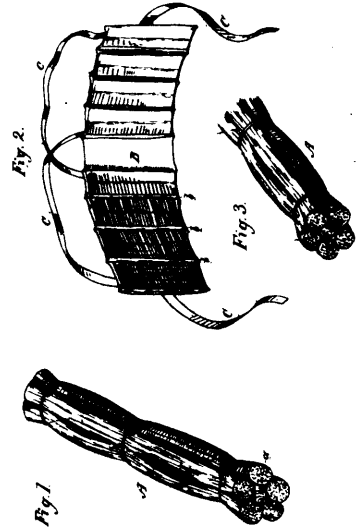
20158 Sanford's Ice Velocipede.



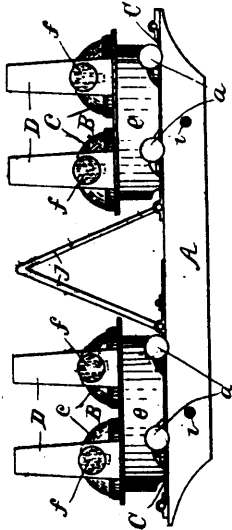
20168 Wagner's Shade Hangers.



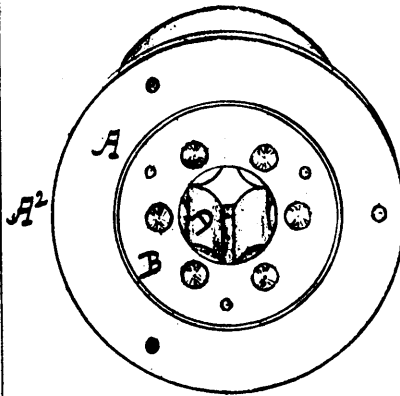
20169 Devine's Axle for Vehicles.



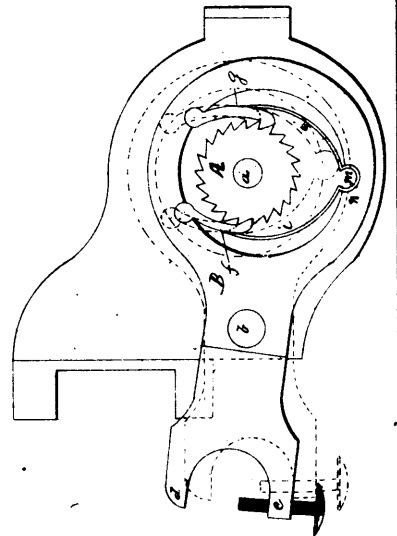
20171 Leduc's Life Preserver.



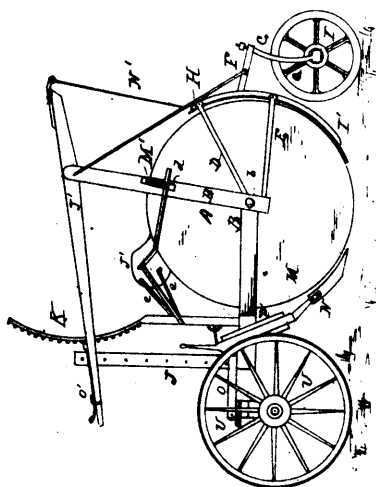
20172 Landon's Coal Oil Heaters.



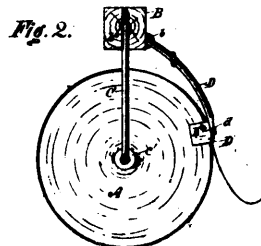
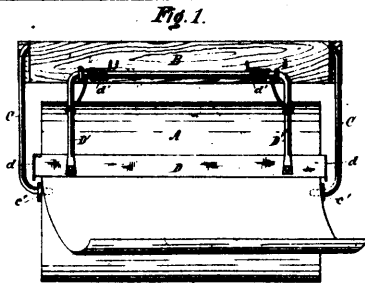
20173 Nichol's Roller Bush.



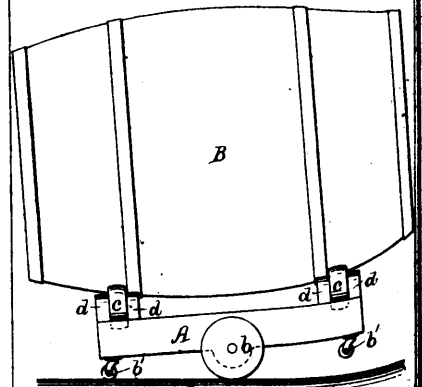
20174 Sackett's Mechanical Movement.



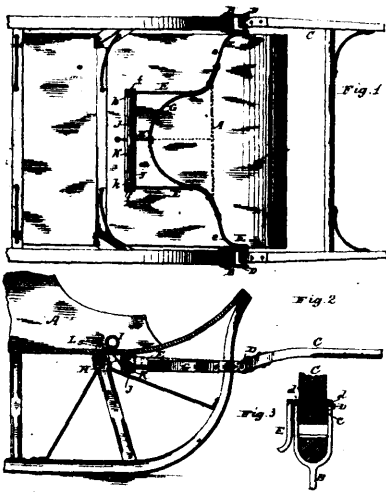
20175 Milner's Ditching Machine.



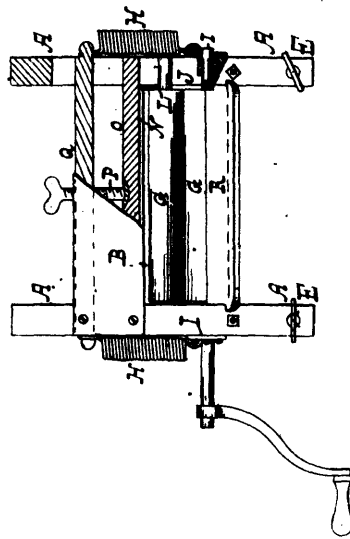
20176 Hopkin's Machine for Holding and Cutting Roller Paper.



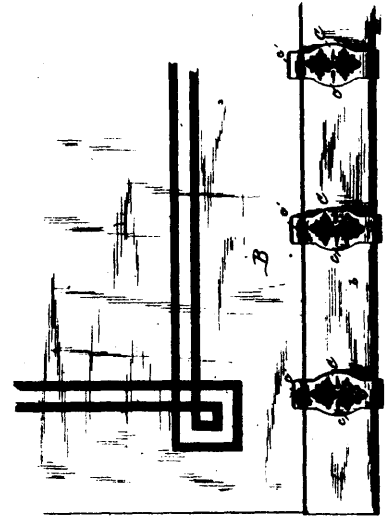
20177 Holden's Barrel Truck.



20178 Buesch's Horse Detaching Device for Vehicles.



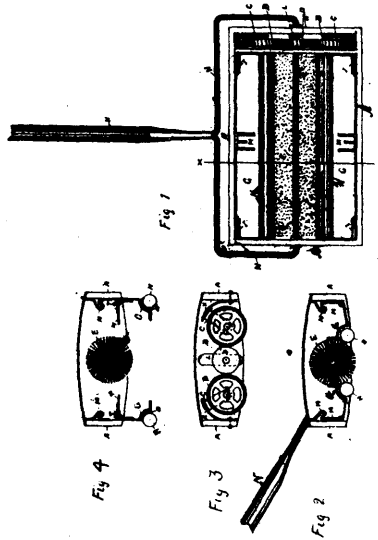
20179 Gould's Wringing Machine.



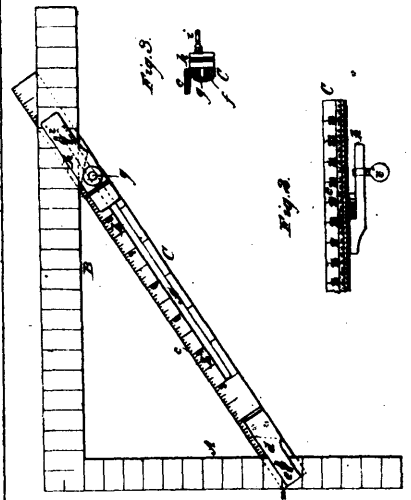
20180 Swan's Curtain Fixture.



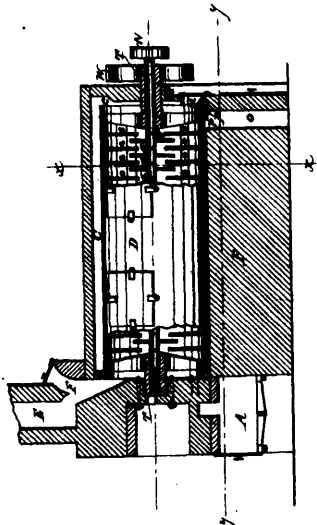
20181 Magee's Snow Shovel.



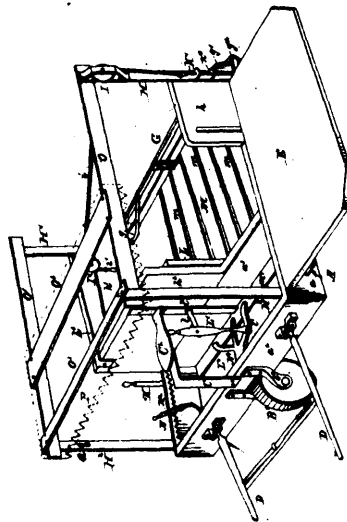
20182 Wood's Carpet Sweeper.



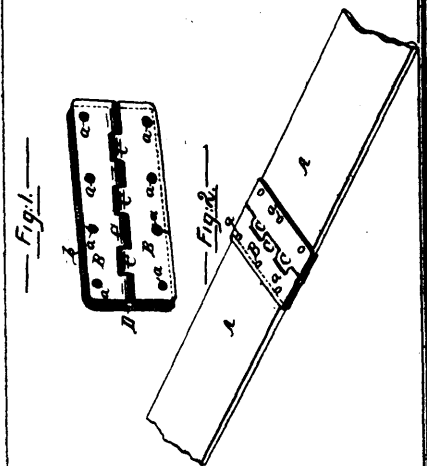
20183 Olsen & McFarlane's Square.



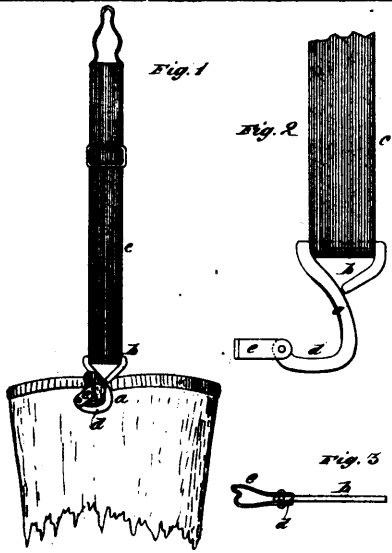
20184 Brur's Desiccating Apparatus.



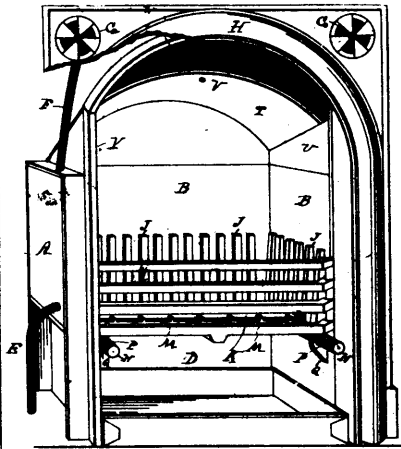
20185 McMillan's Machine for Shocking Grain.



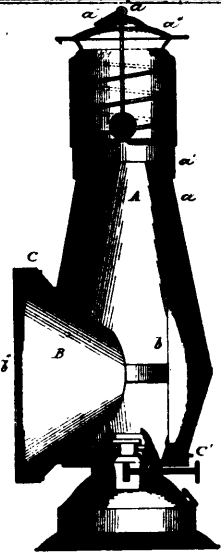
20186 Smith's Belt Fastener.



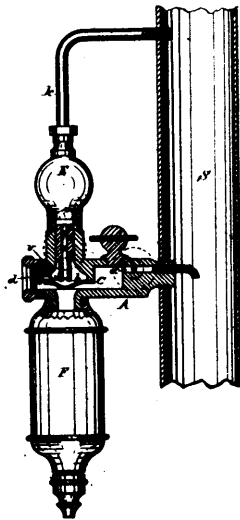
20187 Binley's Clasp.



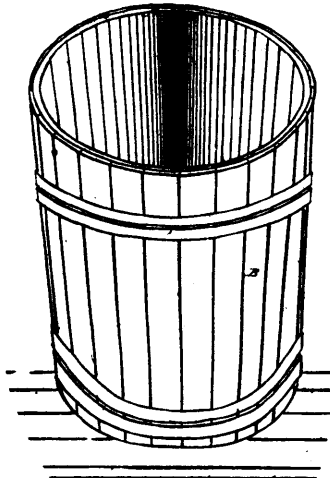
20188 Richards' Fire Place Stove.



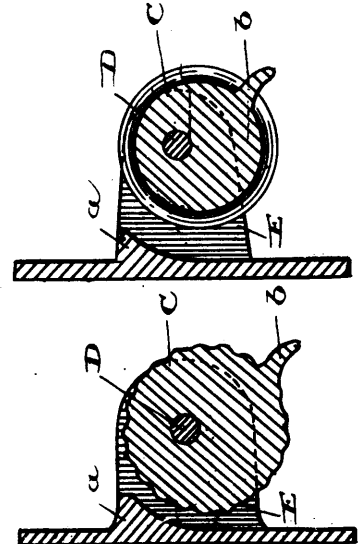
20189 Stevens' Combined Reflectors and Globes for Lamps.



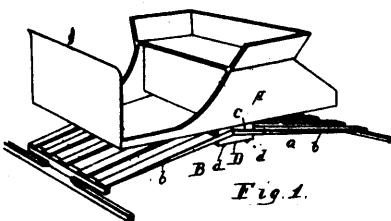
20190 Swift's Lubricator.



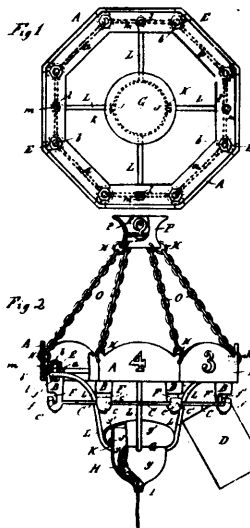
20191 Garnett's Butter Tub.



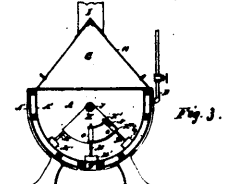
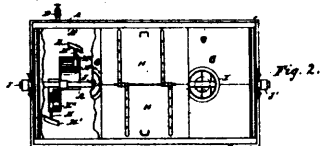
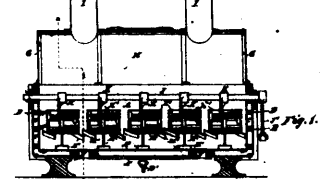
20192 Sells & Millar's Friction Clamp.



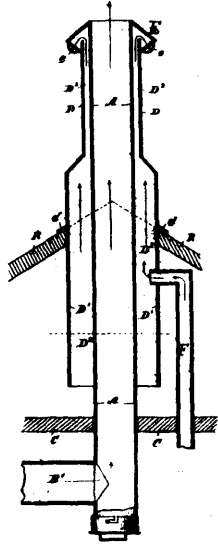
20193 Jackson & Mason's Buckboard Waggon.



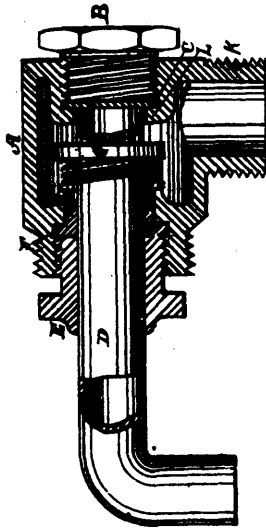
20194 Gilliland's Bag and Twine Holders.



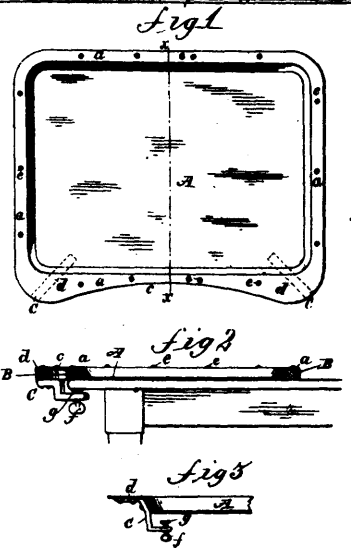
20195 Spratt's Offal Dryers.



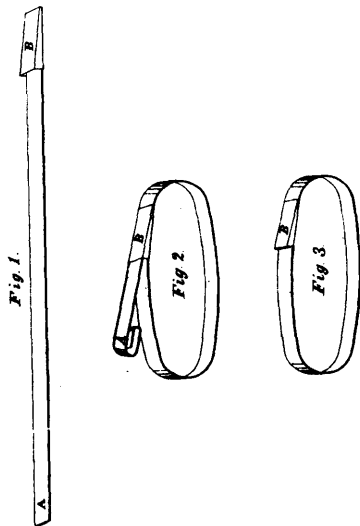
20196 Knight's Ventilation of Houses, &c.



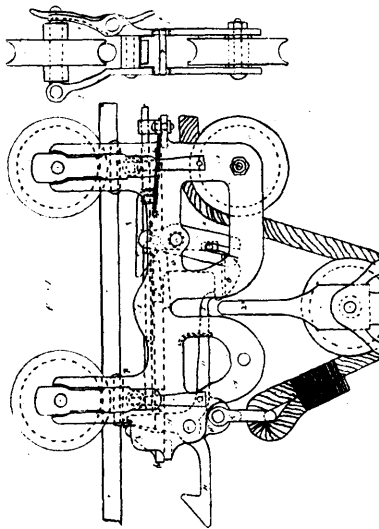
20197 Alexander's Valve.



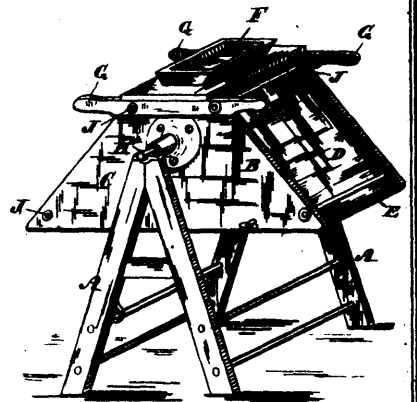
20198 Swift's Children's Table Trays.



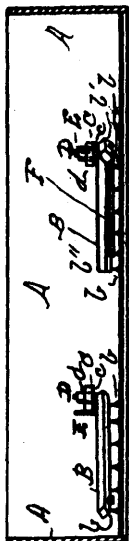
20199 Hunter's Car Seal.



20200 Procan's Horse Hay Carrier.



20201 Shannon's Washing Machine.



20202 Price's Brushing Apparatus for Sieves.

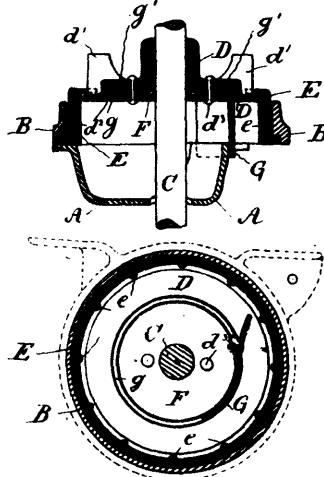
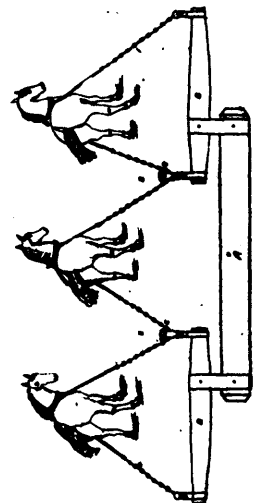
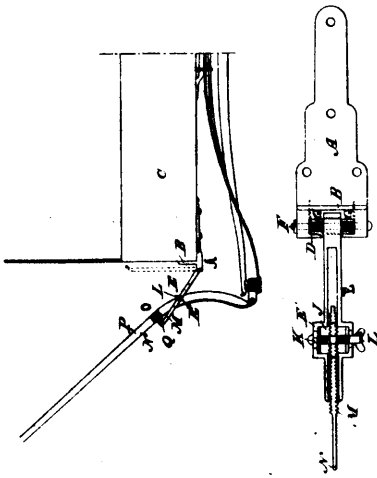


Fig. 5.

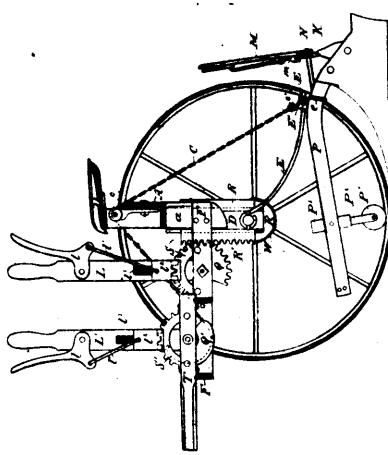
20203 Galloway's Distributors for Seeding Machines.



20204 Buck's Whiffletree for Working Three Horses Abreast.



20205 Face's Shaft Support.



20206 Russ' Sulky Plough.

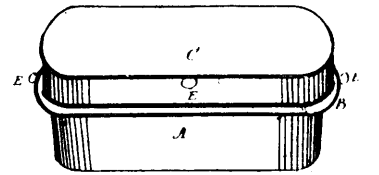


Fig 1

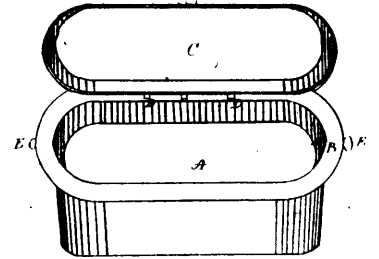
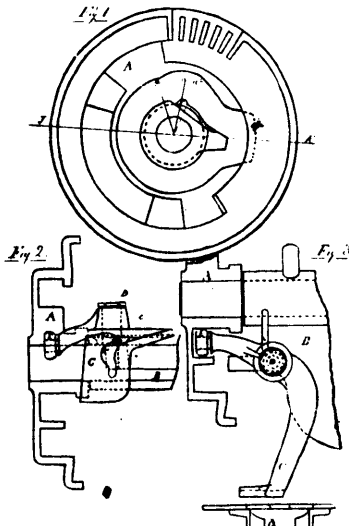
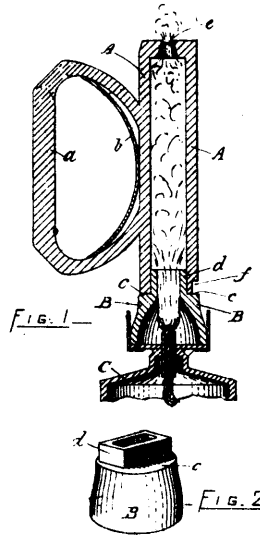


Fig 2

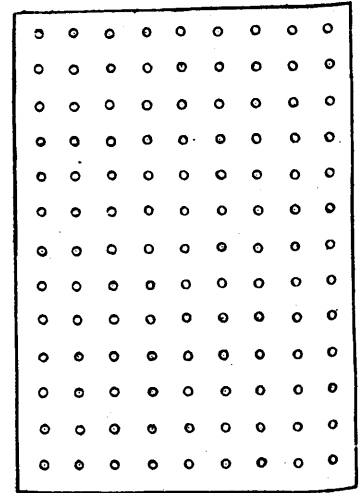
20207 Cox's Cases for Heating Sad Irons.



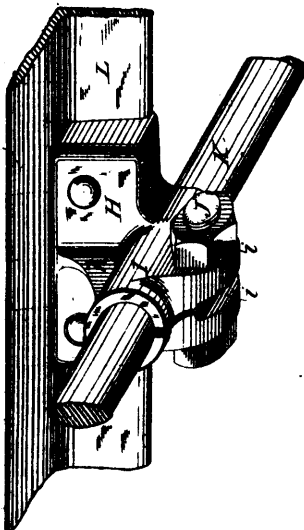
20208 Forsyth's Machine for Binding Grain.



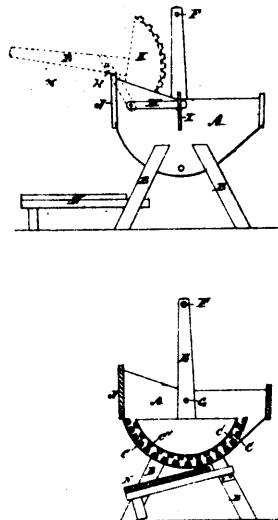
20209 Ratchford's Smoothing Iron.



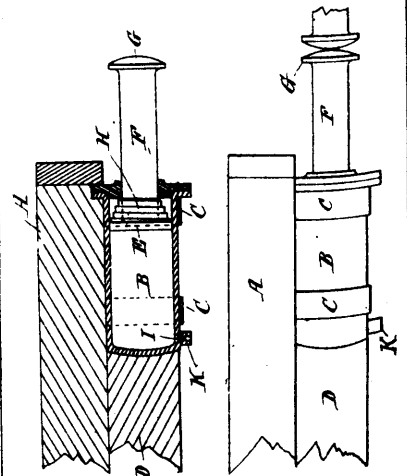
20210 Perrin's Bandage.



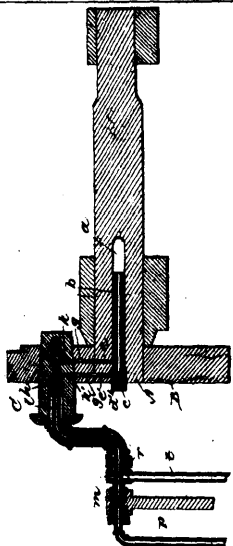
20211 Galloway's Seeding Machine.



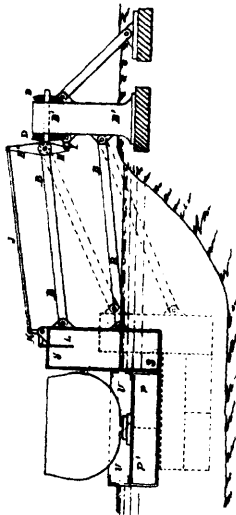
20212 Wagener's Washing Machine.



20213 Stevenson's Apparatus for Preventing Accidents and Damage, or Wrecking of Cars from Collisions of Trains



20214 Wilkin's Devices for Keeping Wrist Pins and Journal Cool.



20215 Stanfield's Hydraulic Lifts, Floating Docks, Pontoons and other Floating Structures.

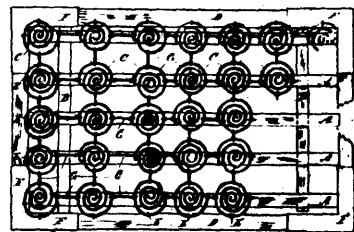


Fig. 1.

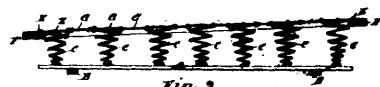
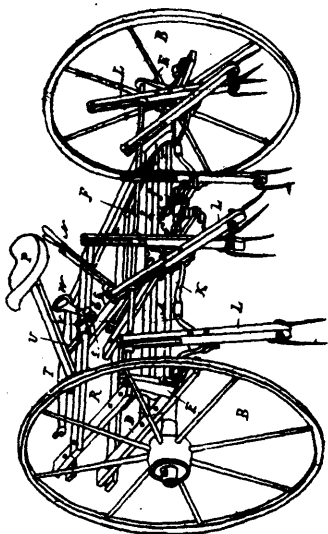
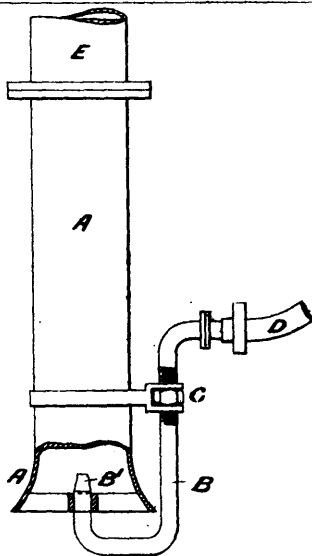


Fig. 2.

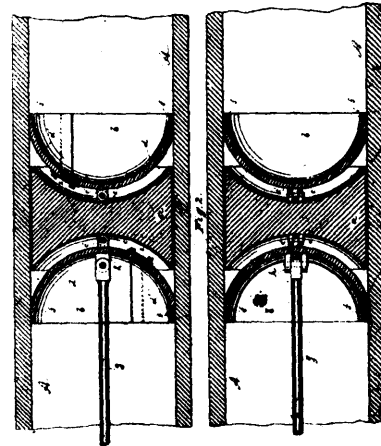
20216 Burk's Spring Bed Bottoms.



20217 Woodford's Hay Tedders.



20218 Evan's Apparatus for Distributing and Elevating Grain and other Cereals and Granular and Pulverized Materials.



20219 Dickmann's Piston for Engine.

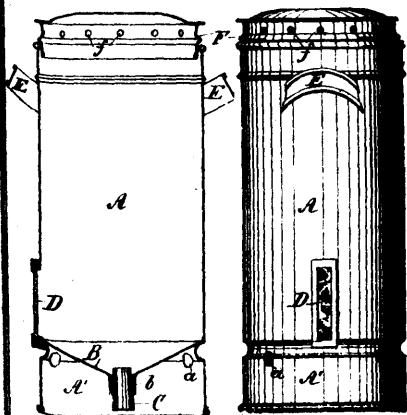
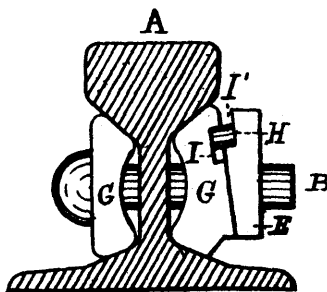


Fig. 1.

Fig. 2.

20221 Howes' Creamer.



20222 Burke's Devices for Securing Fish Plates to the Joints of Railroad Rails.

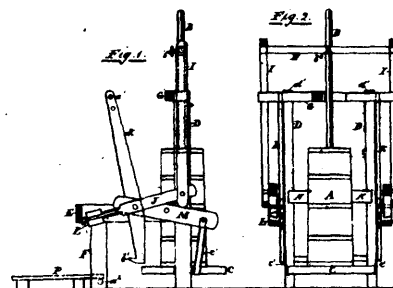


Fig. 1.

Fig. 2.

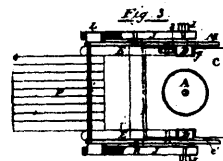
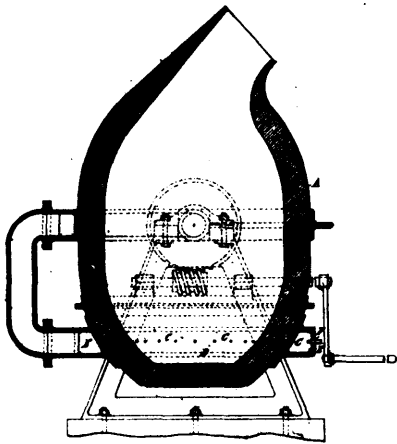
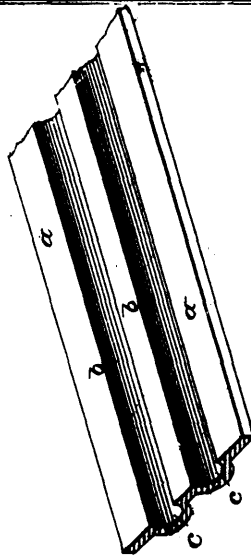


Fig. 3.

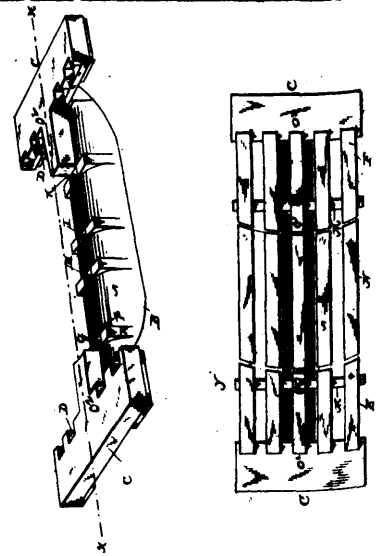
20223 Robertson's Harness Buckle.



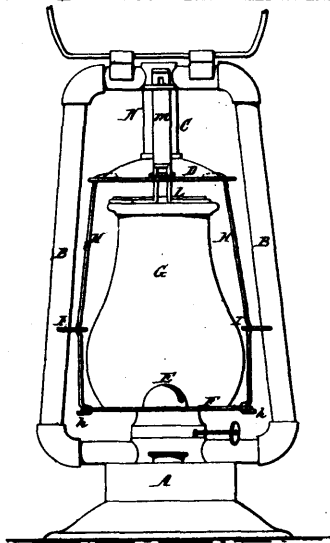
20224 Manhes' Converting Furnace.



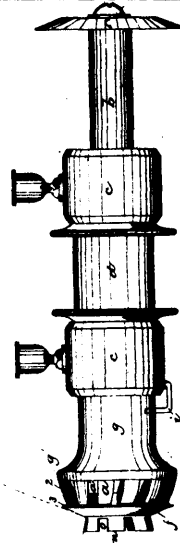
20225 Morrell's Sleigh Shoe.



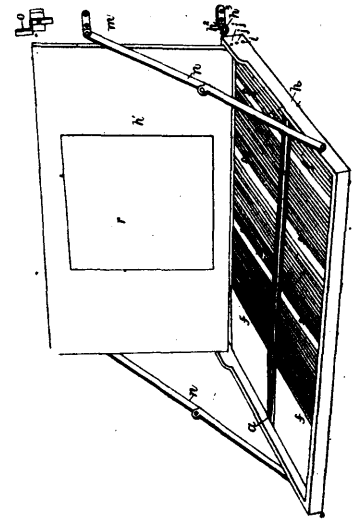
20226 Solt's Grate Bar.



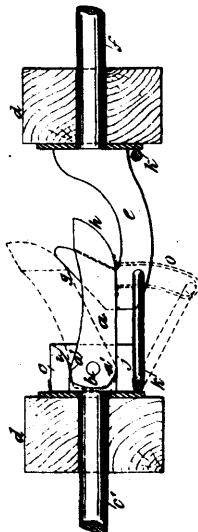
20227 Stetson's Lantern.



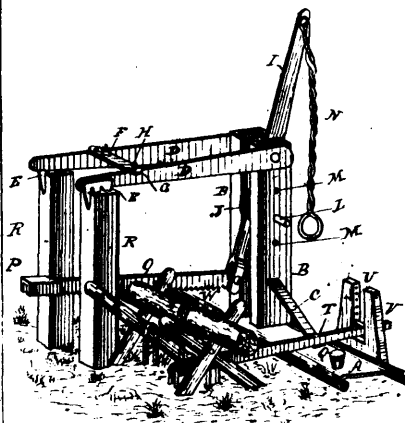
20228 Lord's Heel Finishing Machine.



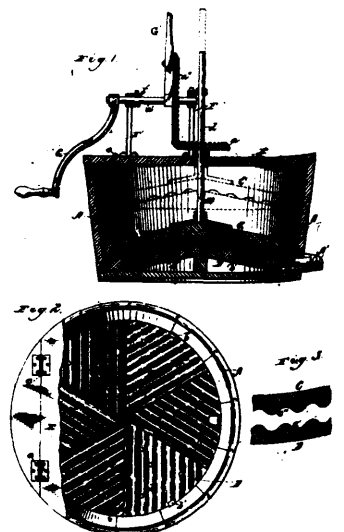
20229 Gilman's Letter File.



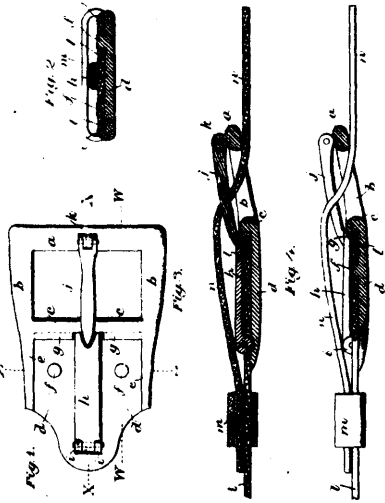
20230 Richmond's Apparatus for Coupling and Uncoupling Railway and other Vehicles.



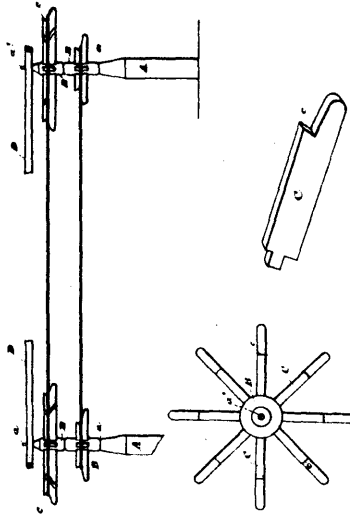
20231 Strong's Drag Saw.



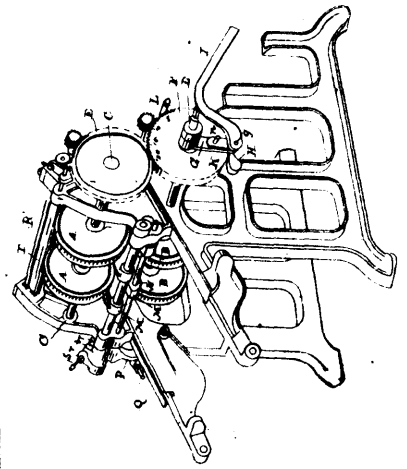
20232 Goodwin's Washing Machine.



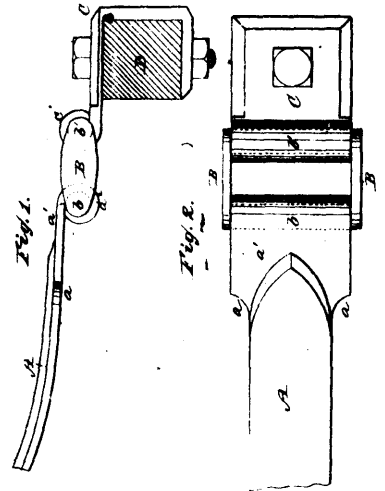
20233 Robertson's Harness Buckle.



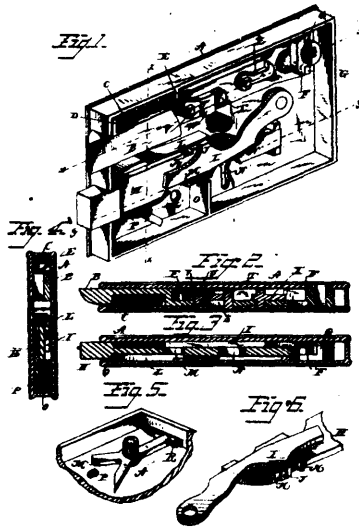
20234 Lockie's Clothes Drying Apparatus.



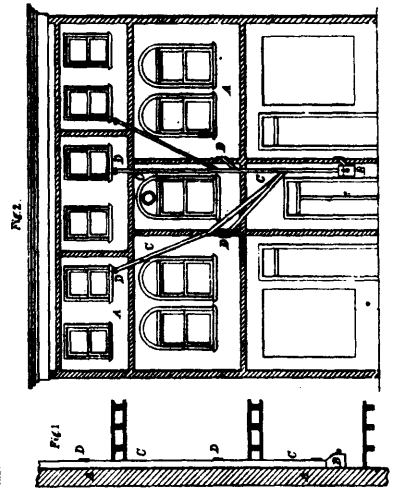
20235 Carter's Machine for numbering Paper.



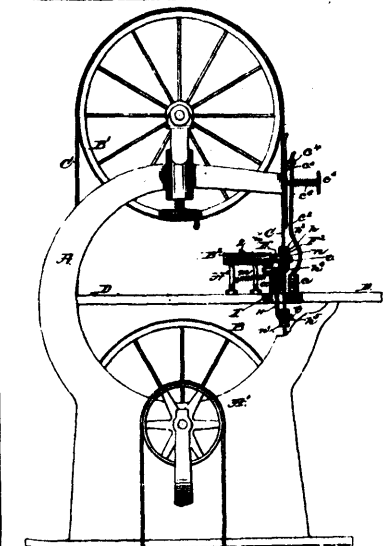
20236 Marshall's Side Spring Carriage.



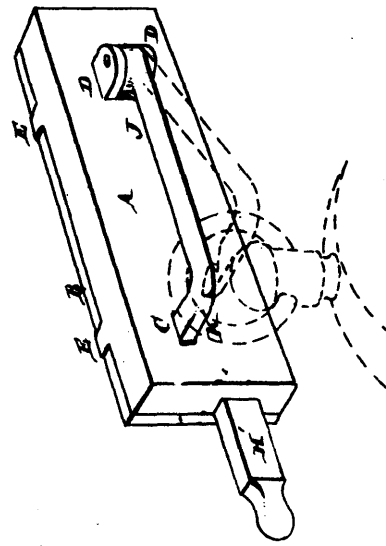
20237 Guthrie's Lock.



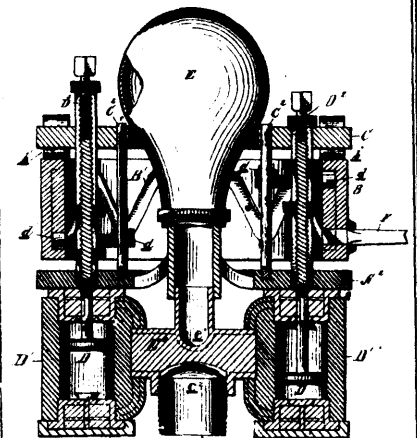
20238 Cutter's Letter Box Connection.



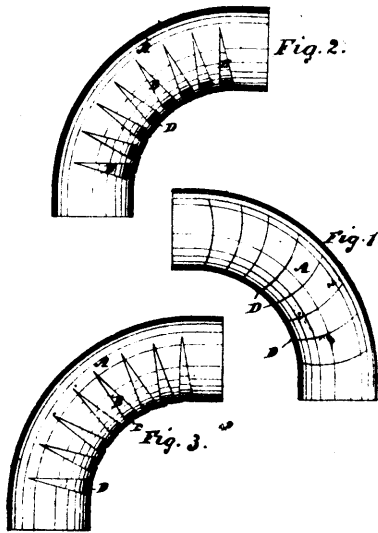
20239 Campbell's Machine for Preparing Hoops.



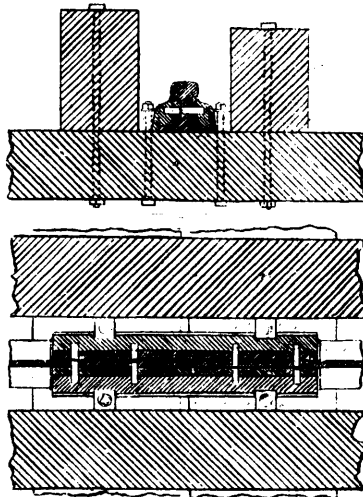
20240 Nichol's Watch and Eye Glass Holder and Protector.



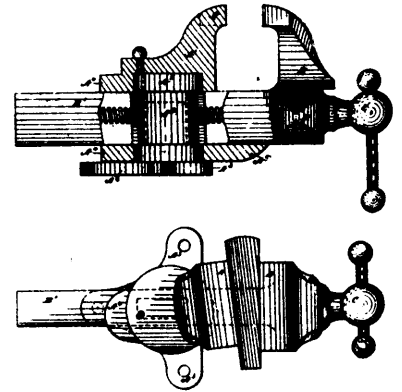
20241 Halsey's Horse Power Fire Engine.



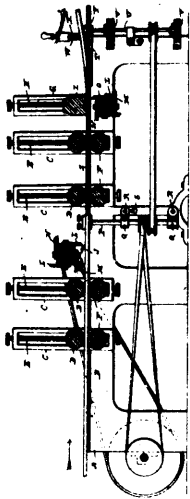
20242 Evans & Bissett's Crimped Stove Pipe Elbow.



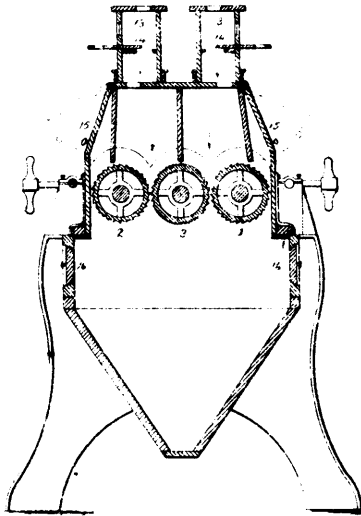
20243 Putnam's Insulated Rail Joint.



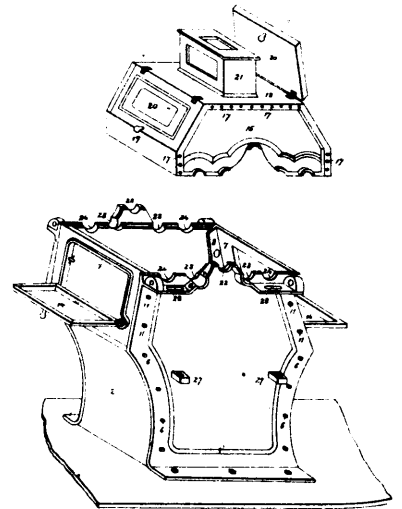
20244 Barrett's Vise.



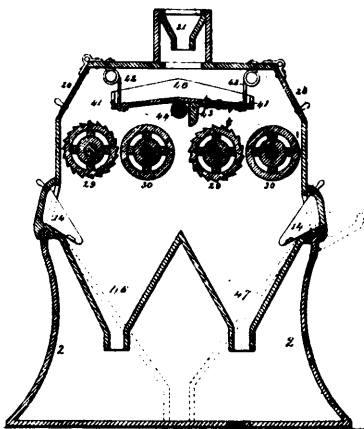
20245 Tunis's Machine for Planing, Tonguing and Grooving Boards.



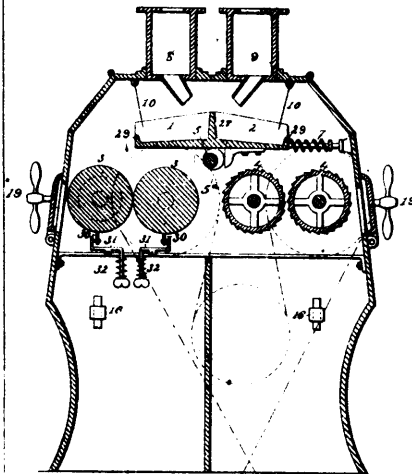
20246 Case's Reduction Machine.



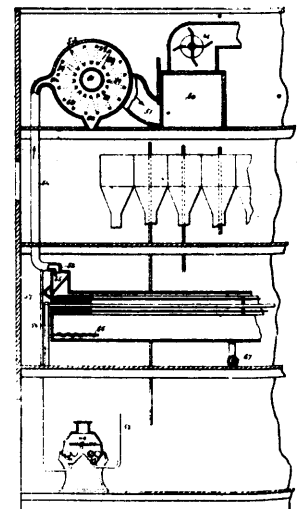
20247 Case's Casing for Roller Mill.



20248 Case's Feed Box for Roller Mill.



20249 Case's Feed Box for Roller Mill.



20250 Case's Apparatus for Elevating and Purifying Milling Products.

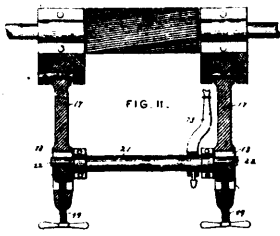


FIG. II.

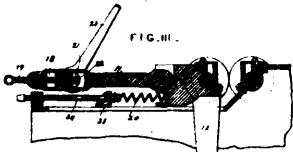


FIG. III.

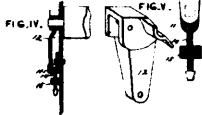
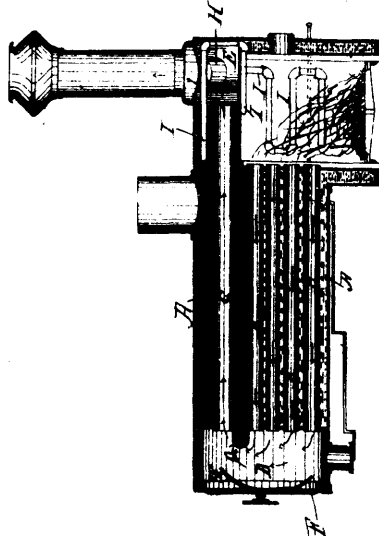


FIG. IV.

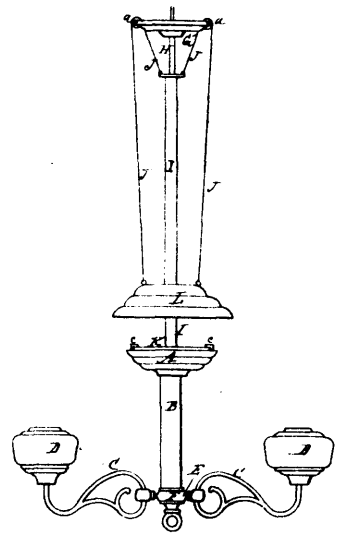


FIG. V.

20251 Case's Adjusting and Levelling Device for Roller Mill.



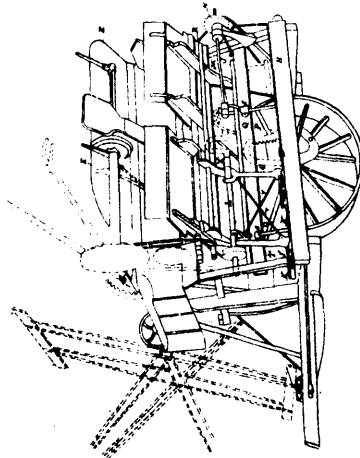
20252 Coventry's Locomotive Boiler.



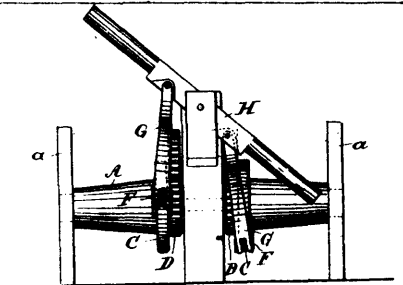
20254 Shaffer's Lamp.



20255 Elkan & Land's Wire Bands for Boxes, &c.



20256 Harris & Lucas' Harvester and Binder.



20257 Amiro & Hine's Ship Windlass.

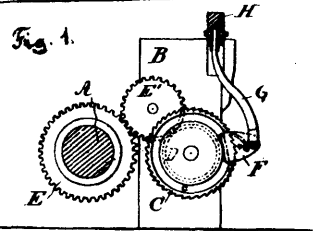
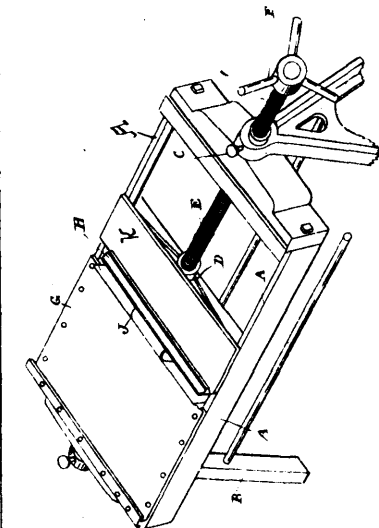
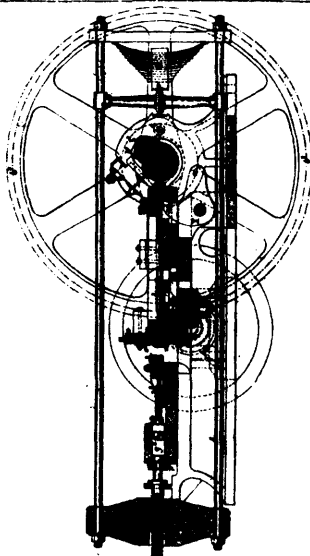


Fig. 1.

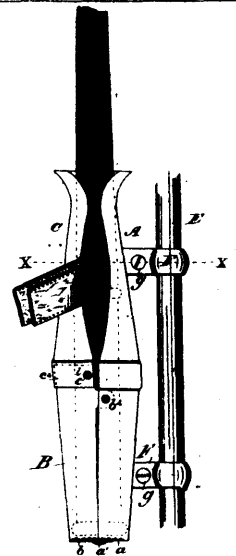
Fig. 2.



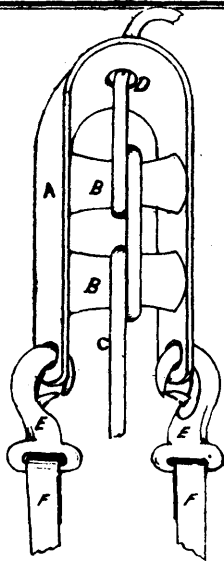
20258 Freeman & Ellis' Gliding Press.



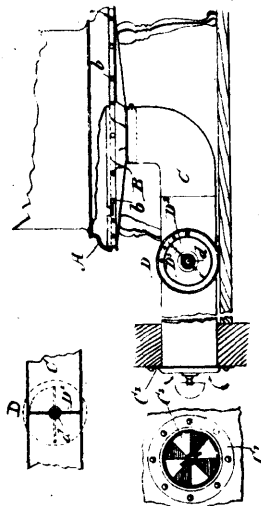
20259 Hasenclevers' Nut Forging Machine.



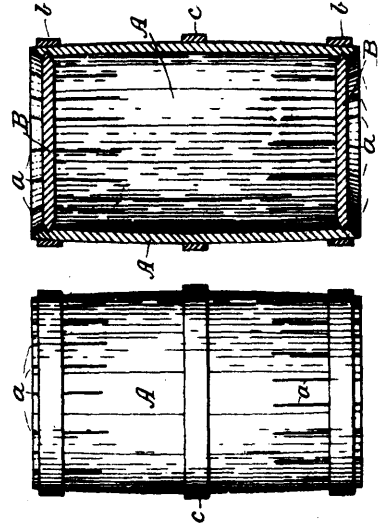
20260 Pitner's Whip and Line Holder.



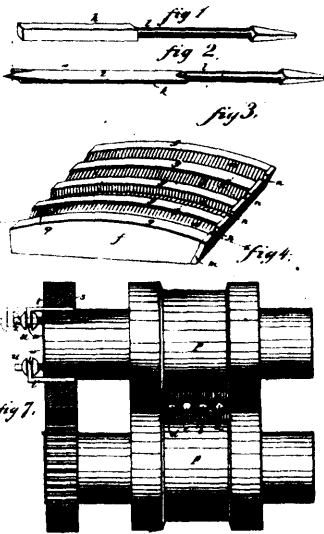
20261 Byron's Fire Escape.



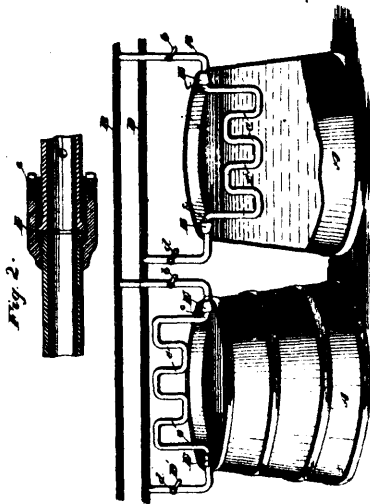
20262 Crawford's Heating Apparatus.



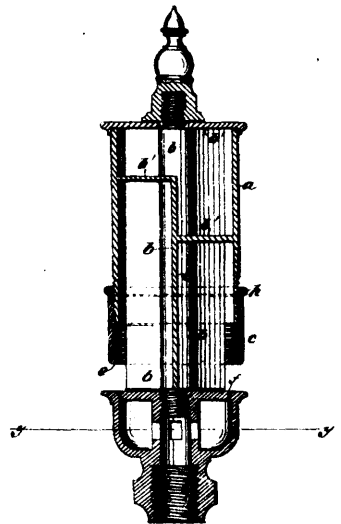
20263 Roy & St. Germain's Barrel.



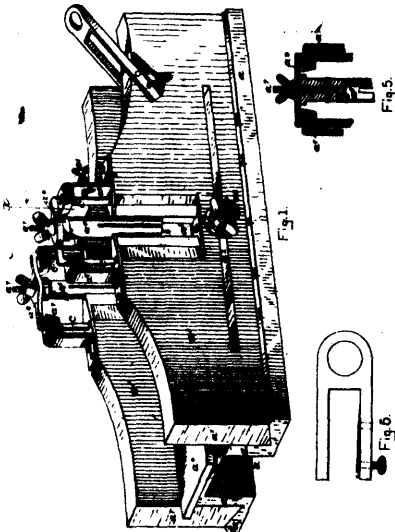
20264 Tinker's Roller Dies.



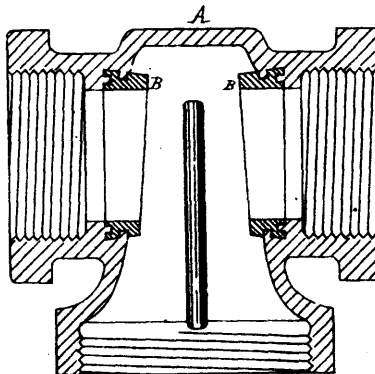
20265 Schlather's Beer Cooling Apparatus.



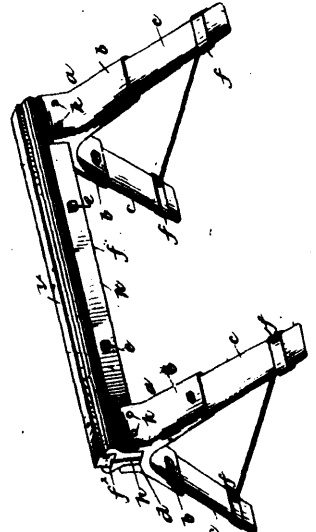
20266 Einig's Steam Whistle.



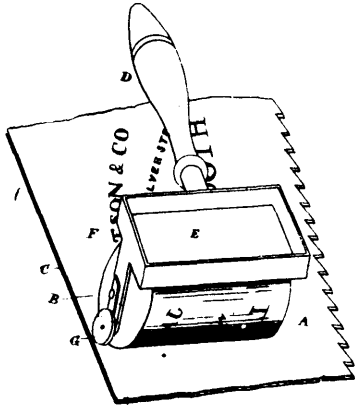
20267 Powell's Miter Box.



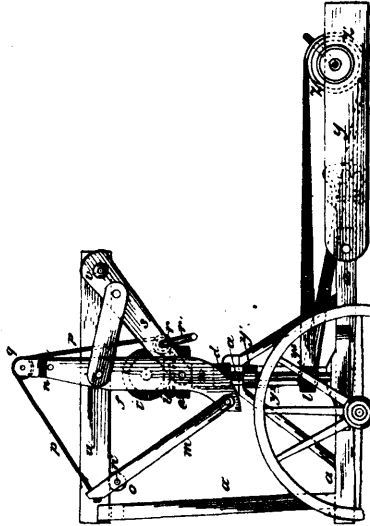
20269 Weber's Straight Way Valve Case.



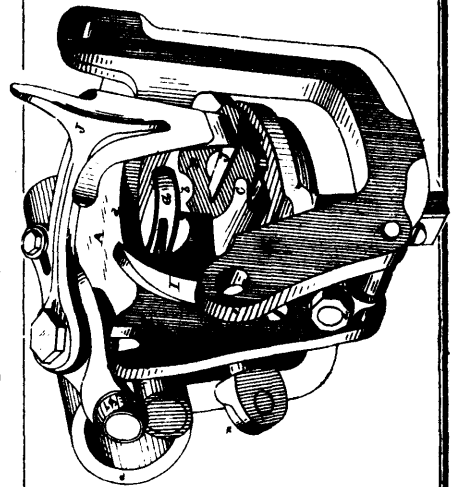
20270 Sargent's Supporting Horse.



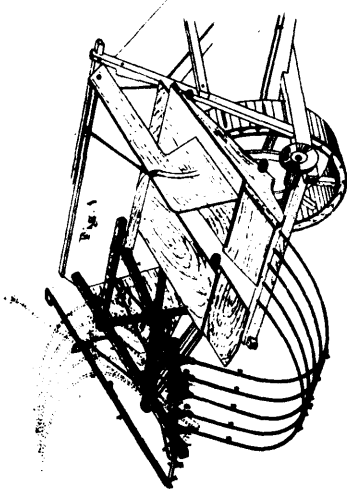
20271 Rodwele & Smith's Device for Imprinting on Steel, &c.



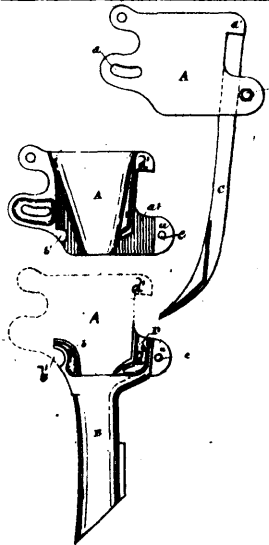
20272 Marshall & Decker's Straw Stacker.



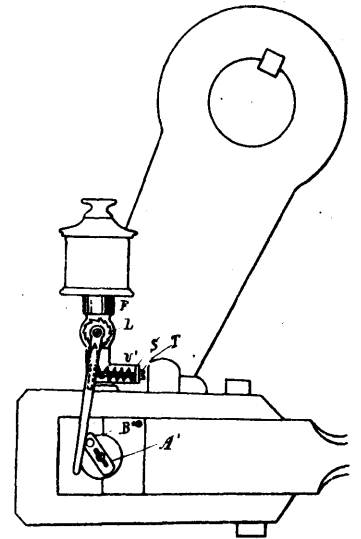
20273 Whiteley, Bayley & Dyer's Machine for Knotting Grain Bands.



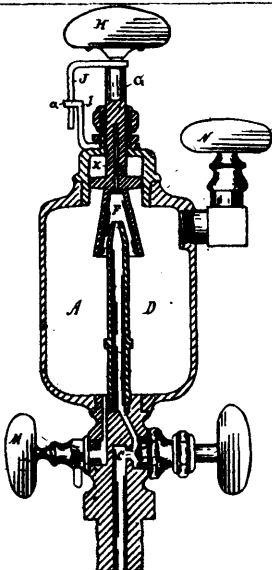
20274 Whiteley's Bundle Carrier for Harvesters.



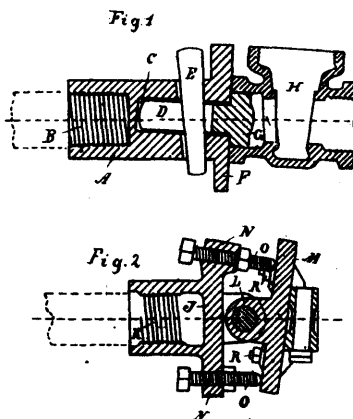
20275 Galloway's Drill and Cultivator Hoes.



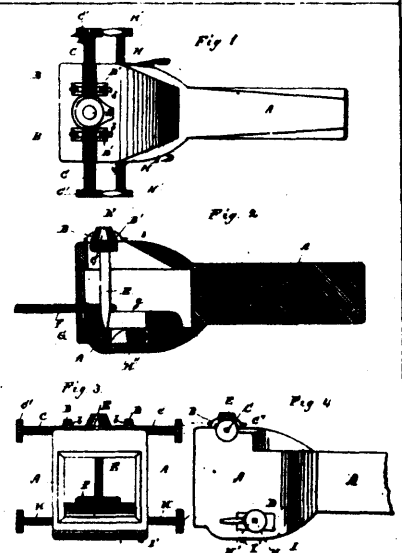
20276 Weber's Crank Pin Oiler.



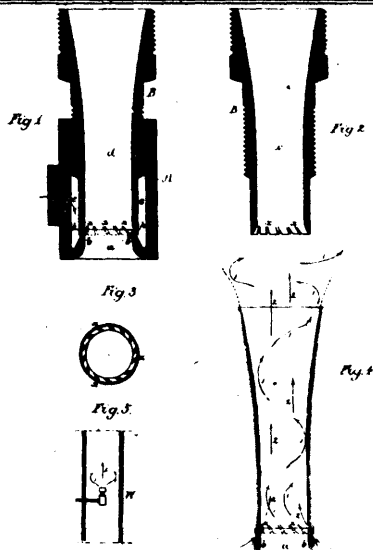
20277 Weber's Displacement Lubricator.



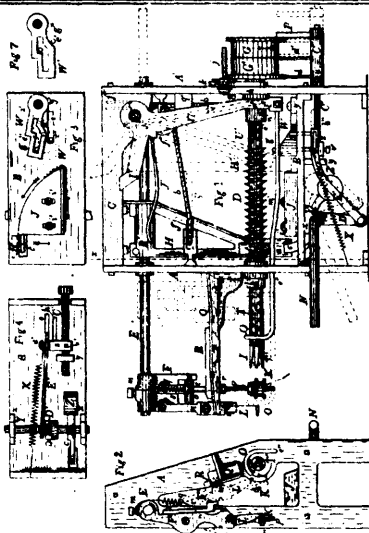
20278 Weber's Chuck for Holding Gate Valves.



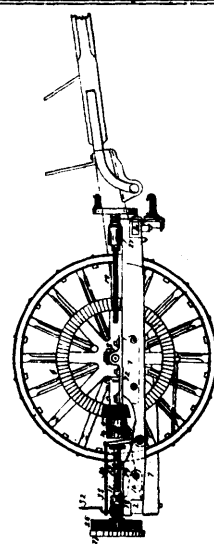
20279 Crowell's Car-Coupler.



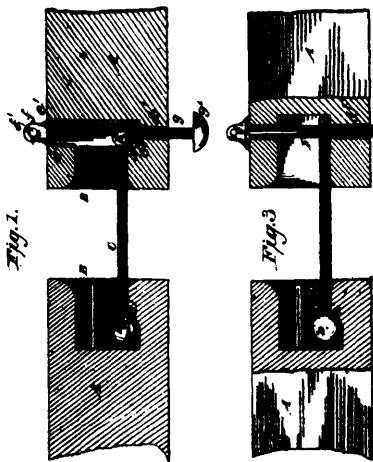
20280 Huston's Ejector.



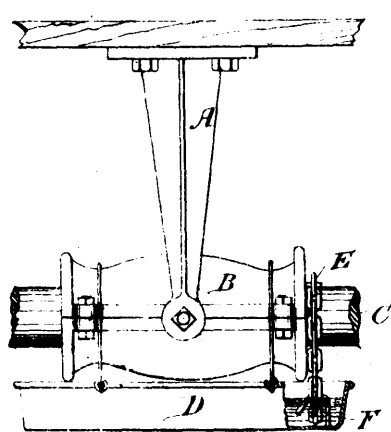
20281 Williams' Apple Parer.



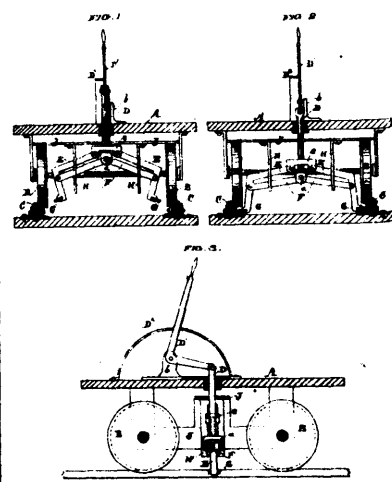
20282 Whitley's Harvester Frame, &c.



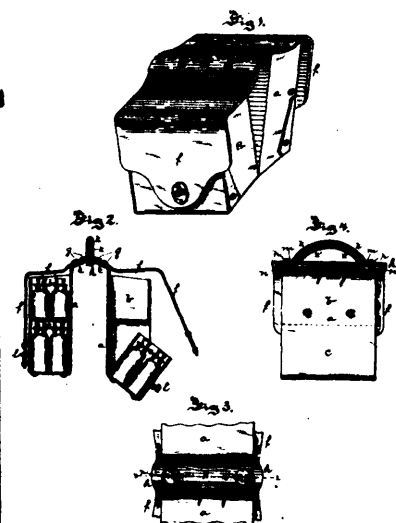
20283 Davis's Car Coupler.



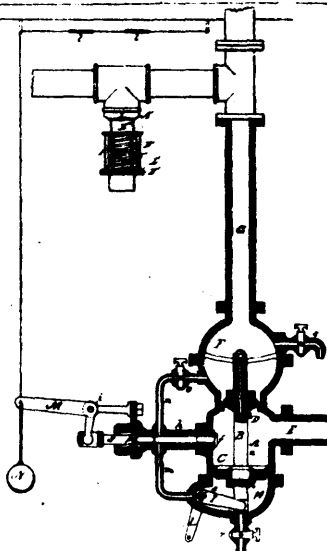
20284 Page & Goullond's Lubricator for Shafts.



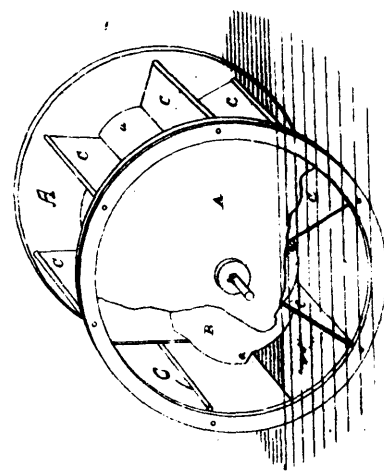
20285 Denechaud's Safety Railway Cars and Rails.



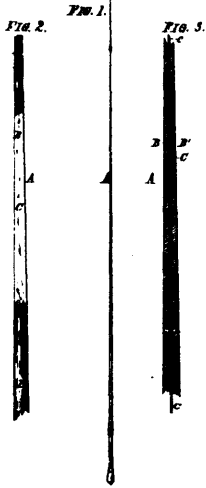
20286 Vaughan's Physician's Buggy Case.



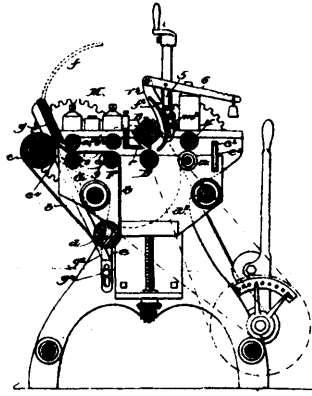
20287 Bishop's Fire Extinguishers.



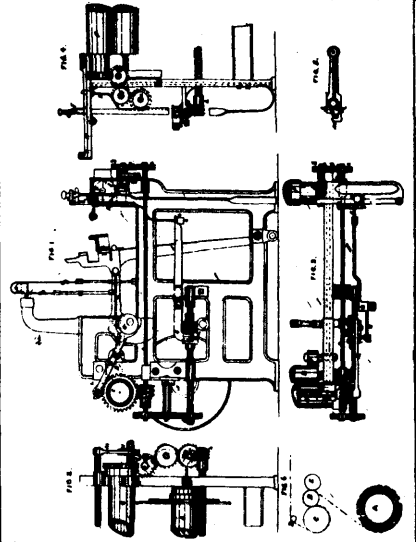
20288 Wheeler's Water Wheel.



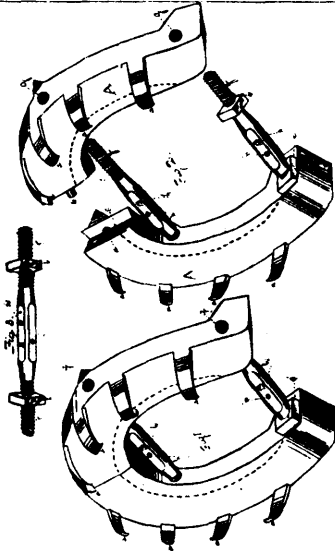
20289 Baker's Whip.



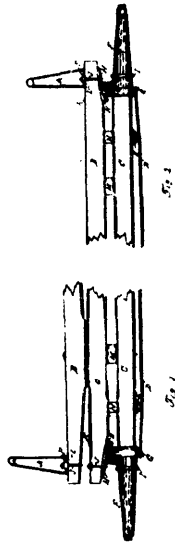
20291 Campbell's Machine for Preparing Hoops.



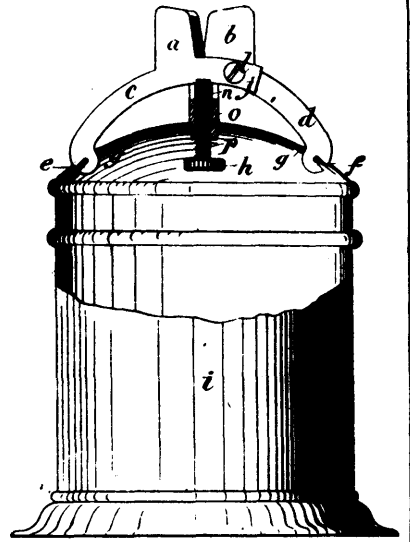
20293 Kelghley's Loom for Weaving.



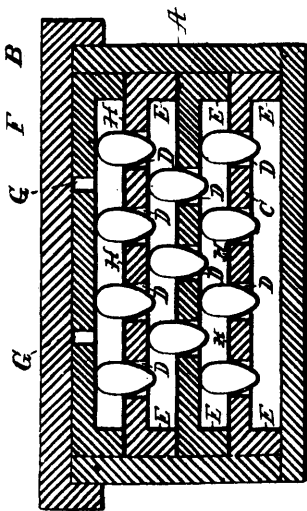
20294 Wilson's Horse Shoes.



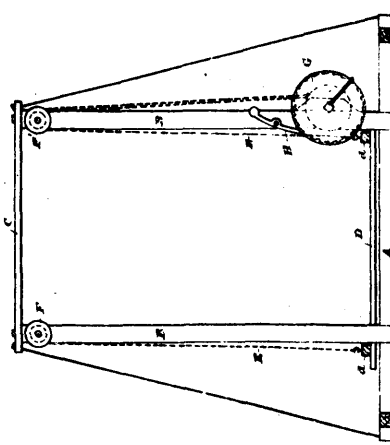
20295 Warner's Waggon.



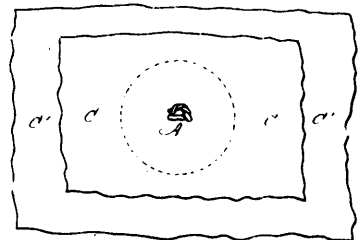
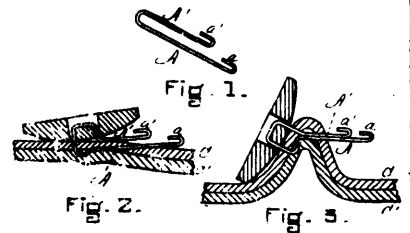
20296 Darling's Twine Cutter.



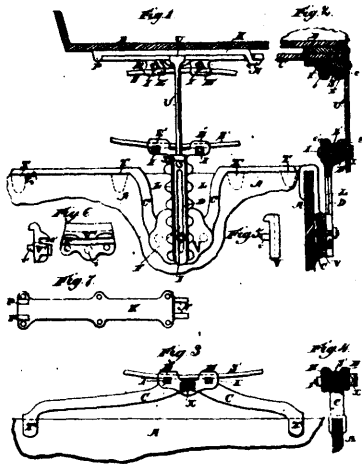
20297 Auger's Boxes for Shipping Eggs.



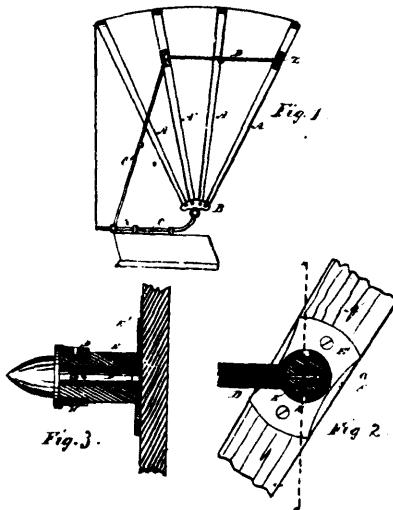
20298 Tomlin's Brick Elevator.



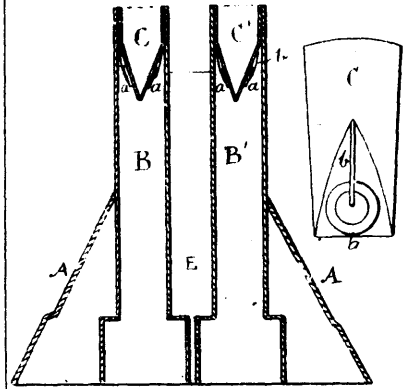
20300 Atwood's Improvements in Attaching Buttons.



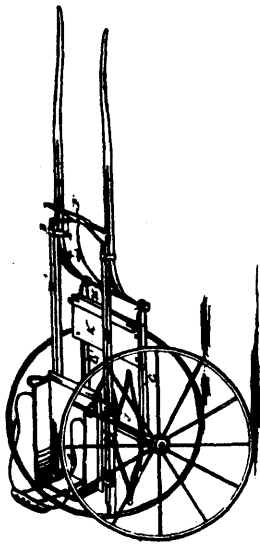
20301 Heartley's Spring Seat for Vehicles.



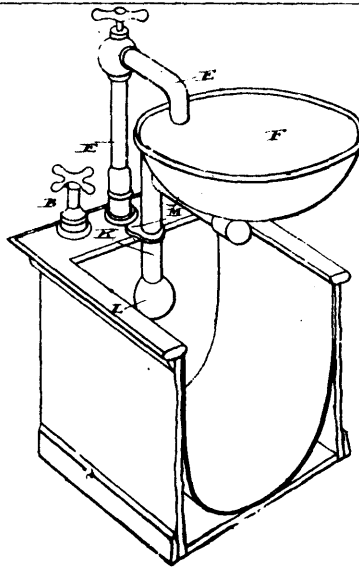
20302 Van Loven's Carriage Top Joints.



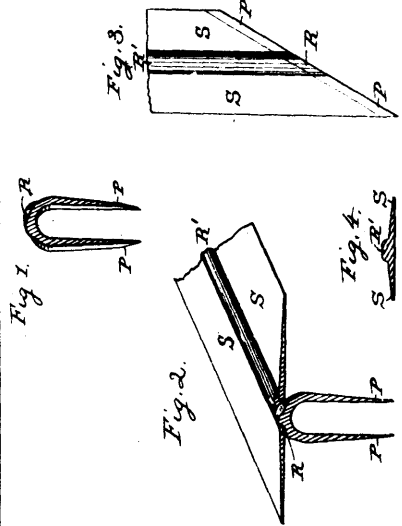
20303 Pickard & McDonald's Washing Machine.



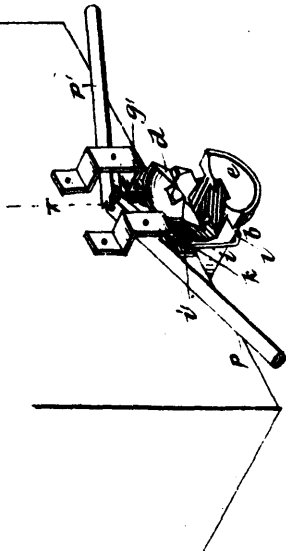
20304 Fysh's Two Wheeled Vehicle.



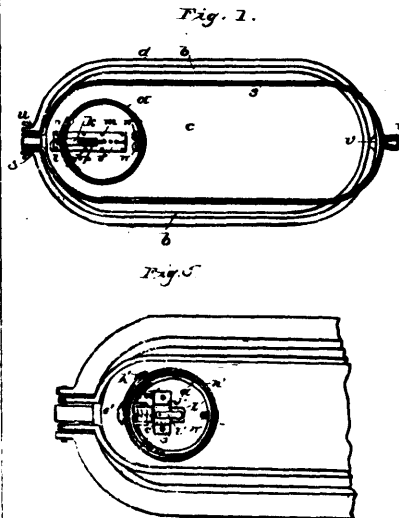
20305 Booth's Bath.



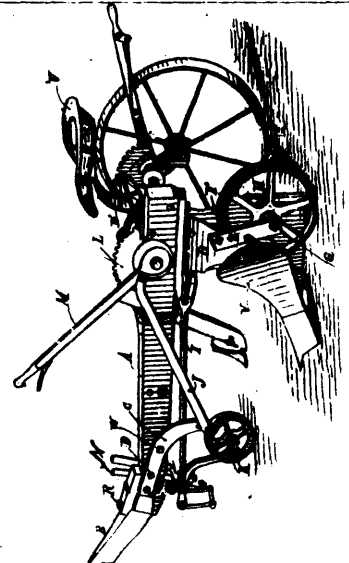
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