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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. 17,787. Mower Cutting Bar Tilter.

(*Lever à bascule aux lames des moissonneuses.*)

Robert M. Robinson, Wingham, Ont., 1st October, 1883; 5 years.

Claim.—The combination of the cog segments F and F₁, and the application of them to a mower, substantially as shown and described and for the purpose specified.

No. 17,788. Fasteners for Gloves.

(*Agrafes de gants.*)

James Wilds, Berlin, Ont., 1st October, 1883; 5 years.

Claim.—1st. As an improved fastening, a ball or portion thereof provided with a shank or projection to constitute a connecting point for attaching the ball to the glove or other article to be fastened, in combination with a socket or cup provided with a similar projection, and being a suitable size to receive the ball, the outer edge of the lip of the cup being slightly smaller than the diameter of the ball so that when the ball is sprung into it the lip of the cup retains the ball in position, substantially as and for the purpose specified. 2nd. In a ball and socket fastening, in which the ball is attached to one part and the socket to the other part of the article to be fastened together by springing the ball into the socket, a recessed opening made in the socket for the purpose of permitting the free movement of the ball's shank when the said ball has been inserted in the socket, as described. 3rd. In a ball and socket fastening, in which the ball is attached to one part and the socket to the other part of the article to be fastened together by springing the ball into the socket, a lip or lips formed on top of the ball, substantially as and for the purpose specified. 4th. As an improved snap fastener, a ball A provided with a shank B, having spikes for attaching it to the article, in combination with a socket C provided with a similar shank and a recessed opening *a*, to permit the free lateral movement of the shank B, when the ball is inserted in the socket, substantially as and for the purpose specified.

No. 17,789. Method of Preparing Matrix Forms for Stereotyping.

(*Manière de préparer les matrices de stéréotypage.*)

Merritt H. Dement, Chicago, Ill., U.S., and Freeman Lane, Darlington, Manitoba, 1st October, 1883; 5 years.

Claim.—1st. The method of preparing a matrice form composed of type indented strips for stereotyping, the same consisting in securing said strips on a support and applying to the spaces between the strip, a fluid or plastic material for filling said spaces, and allowing the same to harden, substantially as described. 2nd. The method of preparing a matrice form composed of type indented strips for stereotyping, the same consisting in securing said strips on a support and applying to the spaces between the lines, and between and at the ends of said strips, a fluid or plastic material for filling said spaces, and allowing the same to harden, substantially as described. 3rd. In producing matrice forms for stereotyping purposes, the method described, which consists in producing type indentations in strips of paper or other material, or in sheets of paper, and then separating said sheets into strips, and pieces of strips; and afterwards securing the same to a support, and finally applying to the spaces between the strips, a filling consisting of a fluid or plastic material which will

harden, all substantially as described. 4th. A matrix form, the face of which is composed of type indented strips and a hardened material filling the spaces between the strips, substantially as described.

No. 17,790. Lubricators for Steam Engines.

(*Graisseurs des locomotives.*)

Warren H. Craig, Lawrence, Mass., U.S., 1st October, 1883; 5 years.

Claim.—1st. The combination of the water trap (or chamber *a* and partition C) and the observation port D and oil induct *e*, of such trap, with the condenser C, and the lubricant reservoir E, all being arranged substantially as set forth. 2nd. The water trap having a polished surface or light reflector to that face of the partition C, which is directly in front of and next adjacent to the observation port D, such trap communicating, substantially as described with the steam condenser and with the lubricant reservoir. 3rd. The combination of the projection G, provided with the valve seat *n*, upward passage *g* and notch *h*, also with the valve *f*, arranged as described with the oil reservoir E, observation port H, the condenser B, and its educt F, all being substantially as set forth. 4th. The valve seat projection G, polished or provided with a light reflecting surface on its inner end and arranged essentially as described, with the observation port H, and provided with the upward passage *g*, and lateral notch *h*, as explained. 5th. The lubricator, substantially as described, consisting of the condenser B, and lubricant reservoir E, the intervening neck provided with the water trap, the two observation ports D and H, the valve *f*, its seat projection G, the oil chamber and the escape tube *e*, and the induct A, such projection G, communicating with the condenser and having the valve seat *n*, passage *g*, and notch *h*, and all being adapted, substantially in manner to operate as set forth.

No. 17,791. Revolving Sign.

(*Enseigne tournante.*)

Tillman A. Markeny, Peoria, Ill., U.S., 2nd October, 1883; 5 years.

Claim.—1st. In a revolving sign, the top and bottom strips A B, in the form of a letter S, and correspondingly-curved thin sheets H, fastened to the curved sides of the strips, in combination with a supporting axis. 2nd. In a revolving sign, the top and bottom strips A B, in the form of a letter S, and correspondingly-curved thin sheets H, fastened to the curved sides of the strips, in combination with the pipe T and rod R, substantially as and for the purpose set forth. 3rd. The top and bottom strips A B, in the form of a letter S, curved sheets H, and pipe T, having enlargement C, in combination with the rod R, having collar F, substantially as and for the purpose set forth. 4th. The sign composed of strips A B, in the form of a letter S, curved sheets H, tube T, enlargement G, and the indented and perforated cups D, having cap C, in combination with the rod R, projection E and collars F V, substantially as and for the purpose specified.

No. 17,792. Evaporator.

(*Appareil évaporatoire.*)

Joseph M. Duncan, Warsaw, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. In an evaporator, the combination, with the evaporating-pan F and the partition wall B of the furnace, of one or more angle-irons G, substantially as shown and described, whereby the products of combustion are kept from passing over the top of the said wall, as set forth. 2nd. In an evaporator, the combination, with the evaporating pan F, the partition wall B, and one or more angle-irons G, of the cap J, having central groove H, and side flanges K, substantially as shown and described. 3rd. In an evaporator, the cap J, made substantially as shown and described, with side flanges K, and a central groove H, substantially as shown and described, to adapt it to be interposed between the top of the partition wall and the bottom of the evaporating-pan and to receive the angle-irons attached to the said pan, as set forth.

No. 17,793. Halter.

(*Licou.*)

Charles S. Upton, Spencerport, N. Y., U.S., 2nd October, 1883; 5 years.

Claim.—1st. A clamp consisting of a metallic ring provided with spurs projecting from its edges parallel with the rope to be clamped, and adapted to be bent inward into the rope, as shown and described. 2nd. A clamp consisting of a metallic ring provided with spurs on its edges, and having an eye for the attachment of a separate strap, as shown and described.

No. 17,794. Belting. (*Fabrication de courroies.*)

John Murphy, Brooklyn, N. Y., U. S., 2nd October, 1883; 15 years.

Claim.—1st. The improvement in the method of manufacturing vulcanized belting containing several layers of fibrous material which consists in uniting said layers by a series of stays disconnected from each other at frequent intervals and applied before vulcanization, substantially as described. 2nd. In combination with the several layers of a belt, a series of flexible stays disconnected from each other at frequent intervals, and held in position by the vulcanized material, substantially as described, whereby the separation of said layers is prevented and the condition of the belt is not injured by stretching.

No. 17,795. Supplemental Trucks for Railway Cars. (*Châssis supplémentaires des chars.*)

L. Finlay, Little Rock, Arkansas, U. S., 2nd October, 1883; 5 years.

Claim.—1st. The plate K, having the boss or projection L and recess or guide *a*, in combination, with the single central roller *a*, and base plate F, constructed and operating, substantially as described. 2nd. The combination of the plate G, and wheels I, with the flanged roller J, and bars H, substantially as specified. 3rd. The combination of the plate G, wheels I, with the rollers *i*, and bars H, substantially as described. 4th. In a supplementary or intermediate car truck, the bolster or bar E, plate F, and plate K, having a boss or projection L, in combination, with the end plates G, wheels I, J, and bars H, substantially as and for the purpose specified. 5th. The bar *c*, having the nut *f*, in combination, with the roller J, and plate G, substantially as described.

No. 17,796. Ink Stands. (*Encrriers.*)

Isaac Brooke, Pottstown, Penn., U. S., 2nd October, 1883; 5 years.

Claim.—1st. The base A, ink well B, and sliding cover F, in combination with the arms E, and the weighted elbow lever D, formed with an upright hand-bearing portion D', said arms being connected with said cover F and pivoted to said portion D', substantially as and for the purpose set forth. 2nd. The ink-well provided with a cover and an operating lever therefor, in combination with the collar G, the arm H, the base A, and fastening J, said arm having lips K, whereby the ink-well is clamped to the base and the operating lever of the cover is held in position, substantially as and for the purpose set forth.

No. 17,797. Machines for Making Confections. (*Machines à confectionner les bonbons confits.*)

James Luttet, Buffalo, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. In a machine for making confections, the frame *a*, having the vertical side pieces *a*1, a vertically movable plate or bed provided with a pattern plate *c*3, and patterns for forming the moulds in the boxes *d*, as specified, in combination with a stock-box having a series of valves for opening or shutting off the supply, a cam and connections for operating them and a suitable feeding mechanism, substantially as specified. 2nd. In a machine for making confections, or similar articles, the combination of a cross head or bed *a*4 and a suitable mechanism for giving it a vertical reciprocating movement, substantially as described, with a hinged pattern plate provided with a bolt *c*5 for limiting its movement for the purposes specified. 3rd. The combination of the stock box arranged in a suitable holding frame so as to have a movement up or down with the screw rods *f*1, secured to the frame *a*, substantially as specified, and provided with the hand wheels *f* or other equivalent device for adjusting the box vertically up or down for the purposes described. 4th. The stock box *c*5, provided with nozzles *h*6, valves *h*5 and valve rods secured in vertical guide ways, in combination, with the springs *g*4, for closing the valves after being released by the cams. 5th. In a machine for making confections, the wheels *A*4, connecting rods *d*4, the shaft *d*5, provided with the pushing hooks *e*, and arranged in boxes *ab*6, having pins *e*3, in combination with the arm *e*2, and stationary rods *e*4, for the purpose of feeding the boxes, substantially as described. 6th. The frame *a* having the vertical side pieces, in combination, with a cross head *a*4, connecting rods *ab*6, arms *a*5 *ab*6, and foot step *d*3, for giving a vertical up and down movement, substantially as described. 7th. The combination of the stock box, having the valves and their connecting springs and parts, substantially as specified, with the jointed levers *h*1, and connecting rods *h*, for the purpose of operating the valves by hand, as described. 8th. In a machine for making confections, or similar articles, a starch box provided with a series of valves, and springs for operating them one way, connecting rods *h*, and jointed levers or arms *h*1, in combination, with the driving wheels provided with cams for operating them the other way, substantially as described.

No. 17,798. Cultivator Teeth. (*Dents de herse.*)

Luther W. Fillebrown, Piqua, Ohio, U. S., 2nd October, 1883; 5 years.

Claim.—1st. A harrow tooth consisting of a thin elastic blade having the form of the segment of a scroll, and constructed with a flexible wing, and a backwardly inclined cutting edge terminating at its front end in a point, substantially in the manner and for the purposes described. 2nd. The combination of an elastic blade, having the form of the mold-board, of a turn-pawl inverted, the elastic wing *w*, and the flanges *g*, all constructed and adapted to operate, substantially in the manner and for the purposes described. 3rd. The combination, with the elastic winged harrow-teeth, having perforated flattened flanges *g*, of the securing bolts *h*, having beveled T-shaped heads, all constructed and adapted to operate substantially in the manner and for the purposes described.

No. 17,799. Burnishing Machine.(*Brunissoir.*)

N. S. Valentine and H. E. Biggens, Hartford, Conn., U. S., 2nd October, 1883; 5 years.

Claim.—1st. In a burnishing machine, a rotary spindle B provided with blocks M P, or equivalent means for holding the article to be burnished, and a drum C, in combination, with the cord D, the reciprocating bar E, the connecting rod H, and the revolving adjustable crank G, whereby said spindle is partially revolved back and forth with a reciprocating rotary motion of less than a full circumference, substantially as described.

No. 17,800. Dust Collectors for Flour Mills.(*Tamis pour moulin à farine.*)

G. T. Smith, Jackson, Mich., (Assignee of J. R. Smith.) Rochester, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. In a reel, a series of laterally arranged peripheral rings and inner rings, in combination with bolt cloth connecting the inner and outer series of rings, substantially as set forth. 2nd. In a reel, a series of longitudinal bars arranged concentrically to the axis of the reel, and a series of peripheral rings supported upon the bars, in combination, with a series of inner rings, substantially as set forth. 3rd. In a reel, a series of peripheral rings supported upon bars arranged concentrically to the axis of the reel, in combination with a series of inner rings supported upon bars arranged concentrically to the axis of the reel, substantially as set forth. 4th. In a reel, the combination of spiders, centrally mounted upon flanges or discs supported on the spider arms, an inner series of longitudinal bars connecting the heads and arranged concentrically to the spider, cloth rings supported on the inner series of horizontal bars, substantially as set forth. 5th. The combination of a rotating dust-catching balloon, provided with circumferential cloth-covered grooves, with stationary bushes arranged to clean the cloth, substantially as and for the purposes set forth. 6th. The combination of a rotating dust-catching balloon, provided with circumferential cloth-covered grooves, with the casing E, inlet spout C, and brushes B, adapted to clean the cloth at the sides of the grooves, substantially as set forth. 6th. The combination of a rotating dust-catching balloon, provided with circumferential cloth-covered grooves, with the casing E, inlet spout C, brushes B, and discharge valve D, substantially as described. 8th. The combination, of the outer and inner rings F and G, cloth *g*, thimbles *c*, arms *a*, and bolts *b*, substantially as described.

No. 17,801. Evaporator. (*Appareil évaporatoire.*)

J. A. Henderson, Troy, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. An evaporating apparatus comprising a double drying-chamber with upwardly-inclined side walls or deflectors, in combination, with the hot air flues and an exhaust flue located between the drying-chambers, suitable dampers, and a smoke flue extending up through said exhaust flue, substantially as described. 2nd. In an evaporating apparatus, the drying chamber A, constructed with an inclined wall, or equivalent deflector, in combination, with a heater, provided with a pipe or flue carrying the heat up and into one side of the said chamber, the horizontal trays between which the heat is conducted, the exhaust flue and the smoke pipe extending from the heater into said flue, and both located on the side of chamber A, opposite to the side in which the heat is introduced, substantially as described.

No. 17,802. Machine for Making Barbed Wire. (*Machine à fabriquer le fil de fer barbelé.*)

A. Dillman and E. R. Knowlton, (Assignees of J. W. Nadelhoffer.) Joliette, Ill., U. S., 2nd October, 1883; 5 years.

Claim.—1st. In a wire-barbing machine, the combination of the shaft L, cams K1 and J2, arms *i* and *m*, jaw *c*1, cutting-off dies *n* and *n*1, bending-dies *h* h, pendulum block D2, arms D3, and cam K, adapted to operate, as and for the purpose set forth. 2nd. In the machine described for making barbed wire, the combination of a suitable jaw or grasper for grasping and holding the barb with the cam *k*, arm D3, pendulum block D2, having the bending dies *h* h, and cutting-off dies *n*1, to swing therewith, and stationary lower cutting-off die *n*, all adapted to operate, as and for the purpose set forth. 3rd. In a wire-barbing machine, the combination of the wire crossing fingers *e*2 *e*3, and cam *e* and *e*1, adapted to operate as set forth. 4th. In a wire-barbing machine, the combination of the shaft L, rods *a*1 *a*2, and *a*3, cranks *a*2 and *a*3, shaft B1, eccentric cam K2, reciprocating segmental racks R, and R1, and wrapping pinions P, and P1, having the wrappers *t* t, and inclined gathers *y*1 *y*2, as and for the purpose set forth. 5th. In a wire-barbing machine, the port *c*, adapted to support the strand wires *w* w, while the barb *b* is being placed on them, in combination with the jaw *c*1, arm T, lever *m*, and eccentric cam K1, as and for the purposes set forth. 6th. In a wire-barbing machine, the combination of the cams S2, shaft *x*, vibrating arm S4, plates S, and spring dogs S6 S1, adapted to operate as and for the purpose set forth. 7th. The combination of the arm T, grasper *c*1, lug T7, screw *w*6, and die T4, as and for the purpose set forth. 8th. The combination of the fingers *e*2 *e*3, friction plates *e*10 *e*11, and pin *e*7, as and for the purpose set forth. 9th. The combination of the grasper *c*1, arms *i* and *i*1, eccentric *i*2 and adjustable die T4, as and for the purpose set forth.

No. 17,803. Sleds. (*Traineaux.*)

James W. Russell and John H. Kimble, Ellenville, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. A sled, constructed with runners or raves B B1, cross-braces C C, and arch braces D D, formed of metal, the said arch-braces being stepped by flanges upon the runners and secured thereto by rivets or their equivalent, and the front and back arch-braces being inclined in opposite directions, thereby dispensing with both standard and braces between the runners and raves, substantially as and for the purpose specified. 2nd. The combination to form a sled of the board A, the runners and raves B B1, of continuous metallic strips, metallic cross-bars C C, metallic arch-braces D D, provided with corner braces *b* b, and stepped upon the runners by flanges secured by rivets or their equivalent, dispensing with both standard and braces

between the runners and raves, all substantially as and for the purpose specified.

No. 17,804. Photographic Camera Box.

(*Chambre noire photographique.*)

E. & H. T. Anthony & Co., (Assignees of E. B. Barker), New York, N. Y., U. S., 2nd October, 1883; 5 years.

Claim.—1st. A photographic camera box, made substantially as shown and described, with the front of the bellows attached to the lens-frame by an oscillating or revolving joint, as set forth, whereby the camera may be readily reversed for taking either vertical or lateral pictures, as desired, without moving the lens-frame. 2nd. In a photographic camera, the combination of the revolving block F G, with the standards F, lens-frame carrier B, and bellows C, substantially as shown and described. 3rd. In a photographic camera, the revolving block F G, constructed with a groove *f*, to receive the clips *g*, substantially as shown and described. 4th. In a photographic camera, the independent standards made open at their tops and attached to the under frame E1, and adapted to hold and guide the sliding lens-frame B, and permit instant removal of the lens-frame from between them, substantially as shown and described. 5th. In a photographic camera, the combination, with the under frame E1, and the sliding lens-frame B, of the independent standards E, substantially as shown and described, whereby the lens-frame may be conveniently removed from or replaced between the standards, as set forth. 6th. In a photographic camera, the supporting plate I K, provided with curved slots I1, and adapted for attachment to the under side of the camera-box, and to the under-frame or running-gear, substantially as shown and described, whereby the usual swing back positions may be given to the camera, as set forth. 7th. The combination, with the camera box, and its under frame, of the slotted supporting-plate I K, operated as described and set forth. 8th. In a photographic camera, the combination with the rear section of the camera-box, and with the under frame or running gear thereof, of oscillating supports, substantially as shown and described, to form a swing-back for the camera, as set forth. 9th. In a photographic camera, the combination with the sliding plates H, under frame E1, and rear camera section B1, of the oscillating supports I K, substantially as shown and described. 10th. The combination with the plate K, and the camera box A, of the headed studs or pins *h* *h*1, and the slots K1, substantially as shown and described, whereby the camera may be quickly detached, revolved, fastened upon the said plate, as set forth. 11th. In a photographic camera, the spring Q, for holding the shield or plate-holder in position, said springs being attached to the running gear or plate of the camera, substantially as shown and described, and for the purpose set forth. 12th. The combination, with the camera A, and the plate K, or running gear, of the springs, Q, substantially as shown and described, and for the purpose set forth.

No. 17,805. Mousing Hooks.

(*Appareil à aiguilleter les crocs.*)

W. H. Hammond and H. Page, Bristol, Mass., U. S., 2nd October, 1883; 5 years.

Claim.—The within described mousing, consisting of the block C having arms *c* *c* for clasp the same to the eye of the hook, and the body of the mousing B, having the clasp *a*, the spring *s*, and the lever *d*, when arranged, substantially as and for the purpose specified.

No. 17,806. Wrenches. (*Clés à écrous.*)

Carl A. Blonquist, Theodore Buskirk and Arnold J. J. Machen, Toledo, Ohio, U. S., 2nd October, 1883; 5 years.

Claim.—1st. In a wrench, the combination with a shank the sides of which are provided with ribs extending over the entire length of said shank, of the sliding jaw carrying sleeve having grooves on its inner sides that correspond with and receive the said ribs, substantially as set forth. 2nd. In a wrench, the combination with a shank having transverse teeth sunk in its face, and flanges adjoining the sides of said teeth, of the sliding jaw carrying sleeve having recesses or concavities upon its inner sides, so as to bear upon the sides and flanges of said shank mainly at its ends and angles only, as set forth. 3rd. The combination, with the toothed shank, of the sliding jaw carrying sleeve having outwardly projecting wings or flanges and a transverse slot, a toothed block sliding in the said slot, and engaging the teeth of the shank, and a lever pivoted between the wings of the sleeve and having a thumb-piece, an outward-extending arm resting against the under side of the jaw, and pivotal connection between its upper end and the toothed sliding block which is fitted in a recess in the upper side of said lever, and a spring arranged to force the thumb-piece of the lever outwardly, as set forth. 4th. As an improvement in wrenches, the combination of a toothed shank having a fixed head or jaw, the sliding jaw carrying sleeve, means substantially as described, for retaining the said sleeve in any position to which it may be adjusted, and a flange projecting from the face of the movable jaw, and extending over and protecting the teeth of the shank, substantially as set forth.

No. 17,807. Damper Regulators.

(*Régulateur des registres.*)

J. Cumberbatch, Newark, N. J., U. S., 3rd October, 1883; 5 years.

Claim.—1st. The combination, with the bottom-closed drum A and central rod F, of a series of concave-convex spring-disks H I, connected together forming one continuous interior chamber about the rod, connecting closely with the rod at top, and communicating at the lower end by an annular passage about the rod with the steam-space of a boiler, as shown and described. 2nd. The drum-cap B, having hollow screw D, and the bottom spring-disk having hollow screw G, in combination, with a hollow screw working in a central thread of cap and receiving the screw G in a female thread of its upper part, said screws being all arranged in axial alignment to form a communicating passage between the chamber within the spring and the boiler, as shown and described. 3rd. The combination with an

outer nut, and a thread on rod F, of the intermediate hollow nut J, threaded externally and internally, to form a close connection between the rod and springs, as described. 4th. The combination, with the expansible chamber formed by the springs H I of the disk R, secured to and above said spring and fitting the cylinder A, whereby the springs will expand and contract directly upward, as described. 5th. The combination, with the rod F, rigidly attached to a chamber expanded by steam, of the lever L, rod N, lever O, and valve P, the latter arranged in the boiler-furnace flue Q, as shown and described.

No. 17,808. Pump. (*Pompe.*)

J. A. Mumford, Hansport, N. S., 3rd October, 1883; 5 years.

Claim.—1st. In a pump, the hollow plunger D, having valved inlet and outlet, in combination with a cylinder constructed of two sections A and B, of different diameters, one section having an inlet and the other an outlet, one end of the plunger D reciprocating in one section of the cylinder and the opposite end in the other section of the cylinder, substantially as set forth. 2nd. The combination, in a pump, of a cylinder consisting of two sections A and B, of different diameters, one section having an inlet and the other an outlet, a hollow plunger D, having a valved inlet and outlet, reciprocating in both sections by pump rod K, and a lever L, or other suitable means, substantially as set forth. 3rd. The combination, in a pump, of a cylinder consisting of two bores or sections A and B, of different diameters, one bore having an inlet and the other an outlet, a hollow plunger D, having a valved inlet and outlet reciprocating in both bores, a pump rod K connected to the plunger and passing through the pump tube I, and a lever or other suitable device for operating the pump, substantially as set forth.

No. 17,809. Padlock. (*Cadenas.*)

C. C. Dickerman, Boston, Mass., U. S., 3rd October, 1883; 5 years.

Claim.—In a padlock, the swinging locking bolt *a*, made as and to operate as shown and described. 2nd. In a padlock, the swinging locking dog or tumbler *a*, as shown and to operate, as and for the purpose described. 3rd. In a padlock, in combination with the swinging locking bolt *a*, the locking dog or tumbler *a*, or its equivalent. 4th. In a padlock, in combination with the swinging locking bolt *a*, the locking dog or tumbler *a*, 5th. In a padlock, in combination with the hasp, the swinging bolt *a*, the locking dog or tumbler *a*, as and for the purpose shown and described. 6th. In a padlock, in combination with the swinging locking bolt *a*, and the locking dog or tumbler *a*, the notches *a*3 and *a*4 in the locking bolt, or their equivalent. 7th. In a padlock, in combination with the swinging locking bolt *a*, and the locking dog or tumbler *a*, the trunnion *a*6. 8th. In a padlock, the locking bolt *a*3, and the locking dog *a*5, in combination with the double bitted key, one bit of which engages the lower end of the locking bolt, and the other the lower end of the locking dog in, unlocking, substantially as shown and described.

No. 17,810. Dumping Cart.

(*Tombereau.*)

Thos. Hill, Jersey City, N. J., U. S., 3rd October, 1883; 5 years.

Claim.—1st. The axle B, having the cranked parts B1, the bearers C C, provided with housings *c*, and the journals *b* *b*, in combination with the bars D having journals *d* *d*, and cranked downwardly therefrom, whereby the body may be supported as described. 2nd. The socket plate G, in the shaft cross-bar E, and the latch H, in combination with a hasp J, having the hook point *h*, and arranged on the box A or bar D, as and for the purpose specified.

No. 17,811. Dry Destructive Distillation of

Coal. (*Distillation à sec de la houille.*)

H. Wurtz, N. Y., U. S., 3rd October 1883; 5 years.

Claim.—1st. A vertical distilling chamber of an oblong horizontal section, without external fire-space or flues, provided with lids, doors, or valves closing both over the top and under the bottom, containing a series of receptacles or cases of corresponding oblong section, linked or hooked together with inter-spaces between, forming a connected chain suspended constantly from the upper end of the chamber, with means of arresting their descent at each interspace, said chamber being connected by pipes at its lower end with a tubular gas-heater or coil external to the said chamber, and enclosed in a distinct highly heated fire-space, all constructed, combined, and operating substantially as set forth. 2nd. A vertical distilling chamber of oblong horizontal section, provided with lateral recesses in its two broader sides at their lower ends, furnished with perforated or cellular refractory brick walls, forming part of the internal walls of the said distilling chamber itself, said recesses also containing horizontal tubes which convey heated gas behind said perforator or cellular walls from an external tubular gas-heater or coil, all combined, constructed, and operating substantially as specified. 3rd. In the series or chain of vertical cases in the distilling chamber described, the combination of the laterally-movable link above each case, with the hook rigidly fixed to the case, immediately above, and the vertically-movable sole, combined and operating together in the manner and for the purposes, substantially as set forth. 4th. The combination, with a retort or distilling chamber, of an ante-chamber or vestibule situated at a higher level, and provided with a gas tight door through which to introduce into said ante-chamber a freshly charged case, and furnished with one or more horizontally hinged valves or doors, closing gas tight at the base of the ante-chamber and between it and the distilling chamber below, and furnished with a gas induction pipe at top, together with means, as set forth, of attaching and suspending said charged case from the crown or apex of the said ante-chamber internally, all combined and constructed in the manner and for the purposes, substantially as set forth. 5th. The combination of the gas induction pipe *j*, at the top with the reduction pipe *j*1, Fig. 2, at the bottom of the ante-chamber, by which said ante-chamber is emptied of air before opening communication with the distilling chamber below, the whole arranged substantially in the manner specified. 6th. In combination with a retort or dis-

tilling chamber, a lateral chamber Y Y, at a lower level, provided with a gas tight door, and a vertically-movable sole, forming part of the said distilling chamber, all constructed, combined and operating together, substantially as set forth.

No. 17,812. Shoe. (*Soulier.*)

W. Rogers, Cincinnati, Ohio, U.S., 3rd October, 1883; 5 years.

Claim.—1st. The innersole A formed preparatory to being placed on the last, with the transverse slits A¹ in the edges opposite each other and having the turned flaps or leaves C, substantially as set forth. 2nd. The described process of manufacturing shoes, which consists in first placing a removable lasting piece on the forward part of the last, and then over this a permanent innersole, prepared with transverse slits at points near the ball and toe, and flaps turned in between said slits, so that its cut away, indented, or turned parts shall be directly over said lasting piece, and in lasting the upper to the permanent innersole, along the rear part and around the toe thereof and to the lasting piece, along the cut away, indented, or turned portion of the innersole, and in tacking the outersole to the innersole and sewing the outersole, innersole, and upper together along the rear part and around the toe portion of the shoe, and in only stitching together the outersole and upper along the cut away, indented, or turned portion of the innersole, and withdrawing the lasting piece, and turning down the leaves or flaps, all substantially as set forth.

No. 17,813. Grain Elevators. (*Elevateurs.*)

A. Bardeen, Blackstone, Mass., U.S., 3rd October, 1883; 5 years.

Claim.—1st. The improved grain elevator described, the same consisting of the shaft E, provided with the pulleys H, G, the shaft J, provided with the pulleys K, P, the lugs L, provided with the screws M, and wheels I, the standards D, provided with screws a, and wheels h, the belt O, provided with the buckets R, and belts F, constructed, combined, and arranged to operate, substantially as set forth. 2nd. In combination with the elements included in the first clause of the claim, the shaft W, standards U, slides f, shovel Y, pulley Z, and belt Q, substantially as and for the purpose specified. 3rd. In a grain elevator, substantially such as described, a rotary shovel adapted to be operated in such a manner as to bring the grain into a convenient position to be taken up by the buckets of the elevator, substantially as set forth.

No. 17,814. Nut and Pipe Wrenches.

(*Clés à écrous et à tigeaux.*)

C. W. Hoffmann, Brantford, Ont., 3rd October, 1883; 5 years.

Claim.—1st. The handle A, made of malleable iron or other suitable metal, and having joints C and F formed on it, substantially as and for the purposes set forth. 2nd. The outside jaw B, joined to the handle A at C, and having the inside face serrated across, and case hardened or faced with serrated steel plate D, also inside jaw E, joined to handle A at F, and having the inside face serrated across and case hardened or faced with serrated steel plate G, substantially as and for the purposes set forth.

No. 17,815. Wine and Cider Press.

(*Pressoir.*)

H. J. Campbell, Altoona, Pa., U.S., 3rd October, 1883; 5 years.

Claim.—1st. The combination of the frame, having a suitable hopper toothed at its lower edge, the cutting cylinder, the inclined plane wholly or partly perforated, the V-shaped trough having a straining-spout, the pressing-rollers, and suitable operating mechanism, as set forth. 2nd. The combination, with the pressing-rollers, arranged and operating as described, of a stationary scraper bearing against the lower roller, and a hinged door bearing in like manner against the upper roller and affording access to the interior of the machine, as set forth.

No. 17,816. Paging Machine.

(*Machine à paginer.*)

M. H. Dement, Chicago, Ill., U.S., 3rd October, 1883; 5 years.

Claim.—1st. The combination of the sliding shelves W W, grooved block N, knife c, and receiving shelf L, substantially as and for the purposes shown and described. 2nd. The combination of the sliding shelves W W, pedal guide-posts J J, and ground block N, substantially as and for the purposes shown and described. 3rd. The combination of the sliding shelves W W, ground block N, knife c, receiving shaft L, and a chase or justifying form, substantially as and for the purposes shown and described. 4th. In a printer's chase or justifying apparatus, the combination of the series of adjustable movable line-supports, with means for securing and compressing the same, substantially as shown and described. 5th. The combination of the series of movable line-supports Y, and means, substantially as described, for securing the same to the support, with cams or cogs by means of which they are held in position, substantially as and for the purposes shown and described. 6th. The combination of the series of movable line-supports Y, and means, substantially as described, for securing the same to a support with flexible cam strips K¹, wheels K¹, and springs S¹, substantially as and for the purpose shown and described. 7th. The combination of the supports Y, rods z z, and blocks T and y, and means for compressing the supports, substantially as and for the purposes shown and described. 8th. In an apparatus for putting type-bars in page and column form, a series of movable or adjustable supports, in combination with cams or cogs by means of which the supports are held in position, and which cams or cogs are readily removable, to permit the supports to be compressed, and with means for compressing the type-bars and supports together, substantially as shown and described. 9th. The series of movable supports, recessed so as to admit the type-bars, and so that when compressed together, the pressure will come upon the type-bars and hold them rigidly in position, with means for compressing the same, substantially as shown and described. 10th. In a printer's

chase or justifying form, a series of movable line-supports, with means, substantially as described, for securing them to a common support, in combination with cams or cogs for holding the line-supports in position while the chase or form is being filled, and means, substantially as described, for compressing the same. 11th. In an apparatus for paging or justifying type-bars, a series of supports for the lines which are capable of being pressed together or spread apart, in combination with mechanism for compressing and separating the same, substantially as shown and described. 12th. The combination of the chase, cam wheels K K, catches r r, catch levers d d, and lever f, substantially as and for the purposes shown and described. 13th. The wheels K K, catches r r, and catch levers d d, bar O, and springs, in combination with the lever g, substantially as shown and described. 14th. The combination of the sliding shelves W W, grooved block N, knife c, swinging shelf L, chase with movable line supports G, and means for adjusting the supports, substantially as and for the purposes shown and described.

No. 17,817. Switch for Incandescent Lamps. (*Aiguille des lampes incandescentes.*)

C. G. Perkins, New York N. Y., U. S., 3rd October, 1883; 5 years.

Claim.—1st. A switch for incandescent lamps, consisting of a spring g, secured to the handle F, in combination with the switch-box D, the lid of which has two lugs h h, between which is a contact plate E, for the purpose of putting the lamp in or out of circuit, substantially as described. 2nd. In a switch for incandescent lamps, the combination of the lid C, of the switch-box and the pieces A A, secured to the upper side of the same, with the contact plate E, and spring g, said spring being secured to the handle F, and so constructed that by turning the handle it will describe an arc around the underside of the lid C, and be made to snap on or off the contact-plate E, substantially as described. 3rd. The switch-box D, having two bayonet grooves in the opposite sides of the top thereof, in combination with the disk or cover C, having the projection c on one side, and the metallic spring f on the opposite side, which fit into the grooves at the top of the switch-box, for the purpose of securing the lid to the same, and so arranged as to form a means of electrical connection with the contact spring g, substantially as described.

No. 17,818. Bark Cutting Machine.

(*Machine à couper l'écorce.*)

J. C. Huggerty, Santa Cruz, Cal., U. S., 3rd October, 1883; 5 years.

Claim.—1st. An apparatus for reducing bark for tanning purposes, consisting of the case A, having within it the revolving disk D with its angularly-placed knives, said disk revolving close to the side of the machine which is provided with a feed opening or directing chute G, the whole combined to operate substantially as and for the purpose described. 2nd. In a bark-cutting or reducing apparatus, consisting of the disk D, having cutting knives and revolving in proximity to one side of a case through which the bark is introduced, the knives F having the slots a so that the knives may be removed or introduced from the back of the disk without removing the bolts, and be secured, substantially as described.

No. 17,819. Car Axle. (*Essieu de char.*)

E. B. Orne, Philadelphia, Penn., U. S., 3rd October, 1883; 5 years.

Claim.—1st. In a car wheel axle, two car wheels having bearings upon the outer sides for the axle boxes of the car, in combination with a center part or axle made hollow and loosely journaled in each of said car wheels, said axle being provided with means to admit a lubricant, and holes to allow said lubricant to flow from said axle to its journals in the wheels, substantially as and for the purpose specified. 2nd. An axle made of a centre and two end sections, in combination with split cores arranged to firmly clamp the end sections, and form bearings for the center sections, and wheels the hubs of which clamp the two parts of the cores together substantially as and for the purpose specified. 3rd. The center part A provided with collars C upon its ends, in combination with split cores E having grooves G F, and sections I, having bearings i, and wheels L having hubs R, substantially as and for the purpose specified. 4th. The center part A made hollow, and provided on its end with collars and plugs, split cores E having grooves G F, end sections I having bearings i, and wheels L having hub K, substantially as and for the purpose specified. 5th. The hollow center part A closed on its ends and provided with holes d, collar B C, and plugs M, in combination with cores E made in two parts and having grooves G F, end sections I having flange J, bearing i, and channel L, and wheels L having hub R, substantially as and for the purpose specified. 6th. The combination of hollow axle A having collars B C, closed end plugs D, and holes d, cores E having grooves G F and made in halves, end sections I, having flanges J and bearings i, discs N, and wheels L having hubs R, substantially as shown. 7th. A car wheel axle made hollow and provided with a series of closed apertures arranged about its circumference to fill it with a lubricant, substantially as and for the purpose specified, in combination with loose wheels upon one or both of its ends.

No. 17,820. Combination Tools.

(*Outils en combinaison.*)

A. E. Nelson, Boston, Mass., U. S., 3rd October, 1883; 5 years.

Claim.—1st. A tool stock provided with a chuck at one end and with means for operating the same, said stock being constructed with longitudinal ribs provided with slots adapted to receive various tools, substantially as described. 2nd. A tool stock or chuck consisting of a tubular body provided with radially sliding jaws at one end, a rotary rod within said body provided with a slot at its upper end, mechanism connecting said rod with said jaws, a shouldered coupling-rod provided with a tongue adapted to project into said slot for coupling said rods, a spring for forcing said parts into connection with each other, and means for rotating said coupling rod, substantially as described. 3rd. A tool stock or chuck consisting of the tubular body A, having the nut N at one end, the radially-sliding jaws G at its opposite end,

the screws v provided with the miter gear x at their inner ends and working in said jaws, the rotary rod L slotted at one end, and provided at its opposite end with the miter gear M , adapted to inter-mesh with the gears x , the coupling rod O , provided with a tongue l , spring n , and boss Q , all constructed, combined and arranged to operate substantially as described. 4th. A tool stock or chuck consisting of the tubular body A , having the chambered nut N at its upper end and the radially sliding jaws g at its lower end, the screws v provided with the miter gears x at their inner ends and working in said jaws, the rotary rod L slotted at one end and provided at its opposite end with the gears x , the squared coupling-rod O , provided with a tongue l , the expansile spring n , adapted to hold said rod in contact, the boss Q , for turning the rods, and the cap F , substantially as described.

No. 17,821. Shoe. (Soulier.)

W. Rogers, Cincinnati, Ohio, U. S., 3rd October, 1883; 5 years.

Claim.—1st. The outsole N , having a lip or flap J turned up near the edge on its upper or inner surface at the forward part, which lip is extended to be turned down over the edge of the upper and line of stitches, substantially as set forth. 2nd. The described process of manufacturing shoes, which consists in placing a removable lasting-piece upon the forward part of the last and a permanent sectional innersole upon the rear part of the last, and in lasting the upper to the permanent innersole upon the rear part of the last and to the removable lasting piece upon the forward part of the last and in tacking the outer-sole to the permanent innersole and to the removable lasting piece, and stitching the outsole, innersole and upper together in the rear part of the shoe and only the outsole and upper in the forward part and withdrawing the removable piece, and where an outsole channeled on its upper surface along the forward part has been used in turning back of the flap on the line of stitches, substantially as set forth. 3rd. The shoe having in the rear part a permanent innersole extending to a point at or near the ball, with the upper stitched thereto between the inner and outer soles and the forward part of the upper stitched only to the outsole, substantially as set forth.

No. 17,822. Slide Valves and Gearing.

(Tiroirs de vapeur et garnitures.)

W. B. Turman, Waldron, Arkansas, U. S., 3rd October, 1883; 5 years.

Claim.—1st. In a slide valve, the combination with the steam chest A provided with the supply and exhaust ports b, c , the guide strips d, l , and the adjustable packing strips f, k , on its top and exhaust side, of the valve B , provided with the entrance port o , interior steam chamber p , the exhaust port q , the opening r , and the projection t , substantially as and for the purpose set forth. 2nd. The cage or frame E , combined with slide valve B , substantially as shown and described. 3rd. The combination of cage E , provided with cross strips u, v , and set screws g, m , the packing strips f, k , and valve B , substantially as described. 4th. The packings j, r , combined with valves B , and packing strips f, k , substantially as shown and described. 5th. The valve B , provided with packings j, r , set in recesses, in combination with the supporting guide strips f, k all arranged as shown. 6th. The valve B , provided with packing strips f, k , and formed with internal steam cavity p and passages e, w , substantially as described. 7th. A valve gear consisting of the slide rod I , provided with arms $2, 2$, and fitted for being rocked sidewise, the slide rods H, H , provided with notches 3 and fitted for movement by cams or eccentrics upon the engine shaft and the connections between the rod I , and the valve stem, all substantially as described, combined for operation as set forth. 8th. In valve gearing, the combination of the eccentric or cam rods H, H , the slide rod I , and the slide K , connected to the valve stem, substantially as shown and described. 9th. In valve gearing, the combination of the eccentric rods H, H , the slide rod I provided with arms $2, 2$, the slide K , and the lever L , substantially as shown and described. 10th. The combination, with the bed plate F , the notched eccentric rods H , and the sliding rod I , provided with arms 2 , of the curved plate P , substantially as described. 11th. In valve gearing, the combination, with the slide rod I , of the sleeve J , the brackets 4 , and the lever 5 , as and for the purpose specified. 12th. In valve gearing, the combination, with the slide K , of the rod I , that is operated by the eccentrics of the adjustable slide M , substantially as described.

No. 17,823. Balanced Slide Valve.

(Tiroir de vapeur équilibré.)

W. T. Reaser, Madison, Wisc., U. S., 3rd October, 1883; 5 years.

Claim.—1st. The combination, with a slide valve and its seat, of vibrating supports having segmental or rocking bearings at their upper and lower ends, arranged outside of and on opposite sides of the slide-valve, and adapted to move along with the valve, substantially in the manner, as and for the purpose shown and described. 2nd. The combination, with a slide valve and its seat, of vibrating supports having segmental or rocking bearings at their upper and lower ends, the upper bearings e , being cut from a circle of larger diameter than the lower bearings e , said bearings being arranged outside of and on opposite sides of the valve, and adapted to move along with it, substantially in the manner as and for the purpose shown and described. 3rd. The combination, with the sliding-valves and valve-seats, of double-valved engines, and means for connecting the valves, of vibrating supports arranged in pairs, and having segmental or rocking bearings at their upper and lower ends arranged outside of and on opposite sides of the slide valves, and adapted to move with them, substantially in the manner as and for the purpose shown and described. 4th. The combination, with the sliding valves and valve seats, of double valved engines, and means for connecting the valves, of vibrating supports arranged in pairs, and having segmental or rocking bearings at their upper and lower ends, the upper bearings e , being cut from a circle of larger diameter than the lower bearings e , substantially as and for the purpose described. 5th. The combination, with a slide valve and its valve seat, of vibrating supports having segmental or rocking bearings at their upper and lower ends, arranged outside of and on opposite sides of the slide valve, toothed segments H connected thereto, and the toothed bars N, N , substantially as and for the purpose shown and described. 6th. The combination, with a

slide valve and its valve seat, of vibrating supports having segmental or rocking bearings at their upper and lower ends, arranged outside of and on opposite sides of the slide valve, connecting cross bars e , having toothed segments g , rod or bar G , connected to the valve and having cog teeth g thereon, and the horizontal plates F, F , substantially as and for the purpose shown and described. 7th. The combination with a slide valve, its valve seat, and vibrating supports having segmental or rocking bearings at their upper and lower ends, of the plates J, J , substantially as and for the purpose shown and described.

No. 17,824. Silicious Copper and Silicious Bronze. (Cuivre et bronze silicieux.)

L. Weiller, Angouleme, France, 3rd October, 1883; 15 years.

Claim.—1st. The manufacture, substantially as set forth, of the new compounds which I have called sodium-tin and sodium-bronze. 2nd. The manufacture of silicious bronze, substantially as set forth, by introducing one of the compounds which I have called respectively sodium-tin, and sodium-bronze, and fluosilicate of potash with or without an amount of uncombined sodium into melted copper or bronze. 3rd. The manufacture of silicious bronze, substantially as set forth, by introducing the metal sodium and fluosilicate of potash with or without an amount of tin into melted bronze or with tin into melted copper. 4th. The manufacture of silicious copper, substantially as set forth, by introducing the metal sodium and fluosilicate of potash into melted copper.

No. 17,825. Dynamo Electric Machine.

(Machine dynamo-électrique.)

P. Jablochhoff, Paris, France, 3rd October, 1883; 15 years.

Claim.—A dynamo-electric or electro-dynamic machine wherein a magnetic coiled bobbin revolves between or within polar fields, the bobbin being fixed obliquely on its axis so as to present its opposite edges to opposite fields alternately in each revolution, substantially as described.

No. 17,826. Composition for Tinning Plates.

(Composition pour étamer les plaques.)

A. F. Taylor, Neath, and G. Leyshon, Tindale, Eng., 3rd October, 1883; 5 years.

Claim.—The process described for the manufacture of a flux consisting in boiling spirits of salt or muriatic acid with spelter or zinc, then allowing it to settle, and then mixing with charcoal and lime, chalk or magnesia, or the carbonate of alkaline earths.

No. 17,827. Carpet Sweeper.

(Balayeuse de tapis.)

G. W. Gates, A. B. Watson and J. McKee, Grand Rapids, Mich., U. S., 3rd October, 1883; 5 years.

Claim.—1st. In a carpet sweeper, the case C, C , hinged at the top and made in two sections, in combination with the spring S , and so constructed as to open and shut, substantially as and for the purpose described. 2nd. The combination of the following parts, viz: the case C, C , made in two parts, having groove g , the driving wheels W, W , supports K , and brush roller.

No. 17,828. Button Hole Sewing Machine.

(Machine à coudre faisant les boutonnières.)

P. Diehl, Elizabeth, N. J., U. S., 4th October, 1883; 5 years.

Claim.—1st. A shipper-lever for a button-hole machine, one arm of which is adapted to receive motion from a driving lever, the other arm of which is provided with a roller fitting and working in a guiding-groove of the feed-wheel, and to which shipper-lever is pivoted between said arms, mechanism for communicating motion to said feed-wheel, in combination with a feed-wheel having such guiding groove formed to automatically shift said shipper-lever, and thereby to change its points of contact with the driving-lever, substantially as and for the purposes described. 2nd. A shipper-lever for a button hole machine having two arms, one carrying a roller, which is received in a guiding groove of the feed wheel, and the other adapted to be operated by contact with a vibrating driving lever, in combination with a feed-lever, to which is pivoted between said arms, such feed lever having a cramping-block working in the feeding-groove of said feed-wheel, and a retracting spring, and with a feed-wheel provided with such guiding and feeding grooves, substantially as and for the purposes described. 3rd. The combination, in a button-hole machine, of the cam d , having the groove d , the driving-lever H , the shipper-lever J , with its roller o , the feed-lever K , pivoted to said shipper-lever at o , and provided with the block K , and the spiral retracting spring u , with the feed-wheel M , having the guiding and feed grooves n and n , substantially as and for the purposes described. 4th. The combination, with a feed wheel having a guiding groove, a shipper-lever provided with a roller adapted to enter and work in such groove, and also provided with mechanism for conveying motion to said feed-wheel, of adjustable blocks adapted to form points of contact between said shipper-lever and a driving lever, substantially as and for the purposes described. 5th. In a button-hole or over-seaming machine, the combination of an arm attached to the needle-bar and projecting from it at right angles, a link, one end of which is pivoted to a crank on the main driving shaft and the other end provided with a sleeve adapted to receive said arm, with the said main driving-shaft and crank, substantially as and for the purposes set forth. 6th. In a button-hole or over-seaming machine, the combination with the main driving-shaft C , crank-wheel c , provided with the cam groove c , link e , provided with a sleeve at its lower end, needle bar P , provided with the arm p , adapted to enter and slide in said sleeve, and rocking frame E , provided with mechanism to rock it, of the positive take-up lever Q , provided with a pivot and roller, and adapted to be operated by the action of said cam-groove c on such roller, substantially as described.

No. 17,829. Trace Buckle. (*Boucle des traits.*)

Ernest Kraft, Hamilton, Ont., 4th October, 1883; 5 years.

Claim.—1st. The lever *b* connected with the hame tug *F* by the bar *K* at one end, and hinged to the tongue plate *A*, at the other, to raise or lower the tongue *B*, in connection with the frame *D*, to which the tongue plate *A* is hinged at *J*, as described. 2nd. The bar *K* formed separate from the lever *C* and secured in the tug by a screw at each end, so as to be removable, the whole operating substantially as and for the purposes of a trace buckle, as set forth and described.

No. 17,830. Cot Bed. (*Lit pliant.*)

N. P. Chaney, Toronto, Ont., 5th October, 1883; 5 years.

Claim.—1st. A cot bed consisting of a rigid frame *A*, having a stuffed or upholstered mattress *C*, rigidly fixed thereto, and provided with folding legs *D*, whereby the mattress is combined with the frame, as set forth. 2nd. In a cot bed having a frame *A*, the legs *D*, pivoted to the inside of the frame, braces *G*, pivoted to said legs, and connected by a bar *H*, the ends sliding in a groove in the frame, whereby the legs follow the outward movement of the braces, and the braces foot against the ends of the frame in setting up the bed, and fold within the frame for compact stowage, as set forth. 3rd. A cot bed, having a stuffed or upholstered mattress *C*, fixed to a rectangular frame *A*, provided with legs *D*, pivoted to the inner side of the frame and to braces *G*, connected by a bar *H*, the ends projecting to slide in a groove *L*, on the inside of the frame, whereby an outward movement of the braces simultaneously sets up the legs, and when folded lie within the frame for close packing, substantially as set forth and shown.

No. 17,831. Car Wheel, Axle and Spring.
(*Roue, essieu et ressort de char de chemin de fer.*)

J. Findlay, Montreal, Que., 8th October, 1883; 5 years.

Claim.—1st. The combination of the axle *H*, having pulley *K*, secured thereon, in which said pulley a set of spring bars *D*, are secured with an annulet forming a wheel *A*, constructed substantially as described, the whole substantially as set forth. 2nd. The combination of the annulets or wheels *A*, with the axle *H*, having an empty space *I*, directly between the said *A* and *H*, with springs *D*, connecting between them, substantially as set forth. 3rd. The combination of the axle *H*, having pulley *K*, secured thereon, said pulley being provided with a periphery forming a friction surface, spring bars *D* and annulets or wheels *A*, the whole substantially as and for the purpose set forth.

No. 17,832. Double Action Force Pump.
(*Pompe foulante à double effet.*)

N. S. Briggs, Hamilton, Ont., 8th October, 1883; 5 years.

Claim.—The combination and arrangement of the several parts, namely: the double flat valves *F* and *G* working alternately over the ports which bring the water from the cylinder, in connection with the chamber *H*, the cover *I* and the neck *K* which forms part of the cylinder cover *J* only separately from the cylinder itself, substantially as set forth in connection with the holes *M* in the cover *L*, as described.

No. 17,833. Spring Hoe. (*Houe à ressort.*)

J. O. Wisner Son & Co., Brantford, Ont., (assignees of J. S. Heath.) 8th October, 1883; 5 years.

Claim.—1st. A drill hoe or cultivator tooth having a notch formed in it to fit on to the pin upon which it is pivoted to the drag-bar, and a notch or notches formed in it to receive the pin connecting it to the brace, substantially as and for the purpose specified. 2nd. In a drill hoe or cultivator tooth pivoted to the drag-bar, the combination of a projection formed on the hoe or tooth below the pivot and having a notch or notches formed in it to receive the pin connecting it to the brace, substantially as and for the purpose specified. 3rd. In a drill hoe or cultivator tooth having a projection to fit within the drag-bar, and a notch formed on the top side of the said projection to fit on to the bottom side of the pivot pin, the combination of a strap bolted or otherwise fastened to the drag-bar and extending below the notched projection for the purpose of holding it against the pivot pin, as specified. 4th. In a spring hoe, a locking lever pivoted to the drag bar in combination with a brace, the upper end of which is connected to the locking lever above its pivot while the portion of the locking lever extending below its pivot forms a support for the brace, substantially as and for the purpose specified. 5th. In a spring hoe, a locking lever provided with a hooked end to receive the brace. 6th. In a spring hoe, a locking lever provided with pivot pins to connect it to the drag-bar, and a hooked end to connect it to the brace, in combination with a step formed on or by the top edge of locking lever for the purpose of supporting the brace between the point where it connects with the lever and the point where it is attached to the hoe. 7th. In a spring hoe, a locking lever pivoted to the drag bar and connected at its upper end to the hoe brace, in combination with a spring arranged to exert an upward pressure on the lower end of the locking lever, substantially as and for the purpose specified. 8th. In a spring hoe, a brace having a pin fixed at one end to fit into a notch or notches formed on the hoe as specified, in combination with a hole made in the opposite end of the brace to fit over the hooked end of the locking lever. 9th. In a spring hoe, a lever having a pin fixed at one end to fit into a notch or notches formed on the hoe and a corresponding pin fixed at its other end to fit into a notch formed in the locking lever, substantially as and for the purpose specified. 10th. In a spring hoe in which the upper end of the hoe brace is connected to the locking lever above its pivot while the portion of the locking lever extending below its pivot forms a support for the brace, the combination of a hole or pin made in or formed upon the upper end of the brace at a point on one side of the longitudinal centre line of the said brace, substantially as and for the purpose specified. 11th. In a spring hoe, the combination of the lifting chain connected directly with the drag-bar.

No. 17,834. Eye Glasses. (*Lunettes.*)

The Southbridge Optical Company, (assignees of W. C. Barnes,) Southbridge, Mass., U.S., 9th October, 1883; 5 years.

Claim.—1st. The combination, with a pair of spring connected eye glass frames, of a compound or double acting nose piece spring consisting of a main portion connected at one end with the frame, and having its other end free to yield or move, relatively to the frame, and a secondary portion connected at one end with the free end of the main portion and having its other end guided in the said main portion and free to yield with relation thereto, substantially as described. 2nd. The eye-glass frame, provided with guiding studs combined with compound or double acting nose-piece springs, each consisting of a downwardly extending portion, connected at its upper end with the frame and slotted near its upper end and an upwardly extended portion having a guide finger at its upper end, co-operating with the slot near the upper end of the other portion and the compound spring, being slotted near its lower end to engage the guiding stud on the frame, substantially as described.

No. 17,835. Apparatus for Forming and Shaping Corsets. (*Appareil pour faire et façonner les corsets.*)

J. C. Fallman, (assignee of J. A. House,) Bridgeport, Conn., U. S., 9th October, 1883; 5 years.

Claim.—1st. In an apparatus for shaping corsets, the form *a* and holders *c* *e* to engage the opposite edges of the corsets, combined with the rods *m* *m* and springs *n* *z*, composing yielding link *l* and mechanism to operate said links and holders to stretch the corset snugly about the form, substantially as described. 2nd. The holder *c*, composed of the bar having the attached forks to hook over the studs *f* of the corset steel or busk, substantially as described. 3rd. The holder *e* *z* composed of the grooved or flanged bars having between them a space *4* to receive the eyeleted edge of the corset thickened at its edge by a steel or piece *g*, as and for the purpose set forth. 4th. The combination, substantially as shown and described, of the form *a*, holders *c* *e* *z* on opposite sides thereof, to engage opposite edges of the corset to be operated upon, rods *m* *m* and springs *n* *z*, consisting yielding links *l*, depressing mechanism for said holders and links, and the guides *o* for the said links, arranged to operate as set forth. 5th. In an apparatus for stretching corsets, the holder *c* and the series of stud-engaging forks made adjustable thereon, substantially as and for the purpose described.

No. 17,836. Apparatus for Shaping Corsets.
(*Appareil pour façonner les corsets.*)

J. C. Fallman, (assignee of J. A. House,) Bridgeport, Conn., U.S., 9th October, 1883; 5 years.

Claim.—1st. The form and the holders adapted to engage the edges of the corset, combined with a straining device applied directly to the holders independently of and separately from the form, to cause the holders to approach each other and draw and fit the corset to the form, substantially as described. 2nd. The form and the holders and the fulcrum *e*, combined with a straining device carried by the holders in rocking bearings, substantially as described. 3rd. The form, the lever-like holders *C* *D* pivoted at *b*, the fulcrum *e*, and spring to act against the holders, combined with a straining device to move the holders toward and from each other to draw the corset about the form, substantially as described.

No. 17,837. Apparatus for Transmitting and Receiving Telephone Signals.
(*Appareil pour recevoir et transmettre les signaux téléphoniques.*)

A. F. St. George, London, Eng., 10th October, 1883; 5 years.

Claim.—1st. The resonant disc or plate *a* of carbonized organic material, arranged and operating, substantially and for the purpose set forth. 2nd. The method of manufacturing the disc or plate *a* of carbonized organic material, by submitting it to heat in contact with animal charcoal and between metal plates under pressure, substantially as set forth. 3rd. The resonant disc or plate *a* of carbonized organic material, in combination with one or more contact pieces *b* and *c* including wires *g* and *g* *h*, arranged and operating substantially as and for the purpose set forth. 4th. The telephone *p* in combination with transparent sensitive plate *i*, the axis and bearings *k*, slide *m*, aperture *n* and shutter *o*, constructed, arranged and operating, substantially as and for the purpose set forth. 5th. The transparent plate *i*, the axis and bearing *k*, slide *m*, aperture *n* and shutter *o*, in combination with apparatus capable of producing electrical disturbances by the varying action of light and connected with a conducting wire having one or more telephones at any desired position, all constructed, arranged and operating substantially as and for the purposes set forth. 6th. The parallel wires insulated *v*, in combination with the telephone wire *s* and telegraph wires *t* in the cable *z* arranged and operating, substantially as and for the purpose set forth.

No. 17,838. Lathe for Turning Lasts.
(*Tour de tourner des formes.*)

H. H. Bennis, Chicago, Ill., U. S., 10th October, 1883; 5 years.

Claim.—1st. In lathes for turning lasts from models, the box frame *A* *B*, constructed narrower than the space between the vertical bars of the bracket, in combination with the reversing gear and mechanism, the two arbors *E* *F* and the rods *G*, whereby the box frame and its gearing may have a lateral movement, substantially as and for the purpose therein and the arbors set forth. 2nd. The collar *D* placed over the inner ends of the arbors and between the gearing *J* *I* to hold the left-hand gear in position, as and for the purpose specified. 3rd. The combination of the gearing *J* *I*, arbors *E* *F*, collar *D*, cam-clutch *C* and the left hand arbor and the pins *a* *a*, as and for the purpose set forth. 4th. The combination of the cam-clutch *C*, construct-

ed as specified, the gearing J J L, collar D, key x, arbors E F, whereby the arbors may both run in the same direction or they may run in opposite directions, as and for the purpose set forth.

No. 17,839. Draught Top for Chimneys.

(*Cage de cheminée.*)

C. English, St. John, N. B., 10th October, 1883; 5 years.

Claim.—The combination of the funnels A and B with the air space D, substantially as and for the purpose set forth.

No. 17,840. Railway Chair.

(*Coussinet de rail.*)

Charlie E. Mark, Flint, Mich., U. S., 10th October, 1883; 5 years.

Claim.—A chair for railway rails, provided upon its opposite edges with lips diagonal to each other and adapted to embrace the foot of the rail in a diagonal position to the same and to secure engagement by being secured at right angles to such rail, substantially as described.

No. 17,841. Turnip Harvester.

(*Moissonneuse de navets.*)

Nelson J. Fulcher, Cumberland, Ont., 10th October, 1883; 5 years.

Claim.—1st. The combination of a frame B, carried upon a main axle A, supported by wheels, a platform B₁ carried by the frame B, and having hoes H self-adjusting to the level of the ground by means of the guide wheel G, a knife spindle K carrying two sets of knives for removing roots and tops from produce, the upper set adjustable and controlled by a lever K₁ serving a guide arm K₃ serving also as support to the tops, the said knife spindle K driven by a cross shaft S, receiving motion from the main axle A, said body B and axle A so combined as to enable the platform B₁ to be raised or lowered, and combined with the elevator E, provided with shaker motion and spout for loading produce. 2nd. The crank axle A supported by wheels W carrying spur wheels W₁, the position of the crank axle controlled by a lever with spring catch engaging notches in a segment secured to or forming part of the body B. 3rd. A wheel W, in combination with a spur wheel W₁ driving a pinion W₂ loose upon a shaft S, and driving the same in one direction only by spring clutch boxes S₁, said shaft S journaled in levers L and combined with the body B. 4th. A shaft S passing through slots in the frame B and journaled in levers L and having loose pinions W₃, clutch boxes S₁, and bevel wheel W₂, with pulley P driving the elevator. 5th. The lifting hoes H, consisting of two triangular bars with dipped or rounded noses arranged to have their inner side in a line and to leave a space or slot between their sharp edges, adjustably socketed in the brow of the platform B₁. 6th. The lifting hoes H controlled by a guide wheel G pivoted on a leg *g* carrying adjustable angular brackets and guided vertically by a stud on an angular arm *g*¹. 7th. The lifting hoes H, brackets *b*₁ *b*₂, guide wheel G *g*, and arms *g*¹, in combination with the body B and platform B₁. 8th. A lower platform B₂ rigidly or adjustably attached to the frame B provided with a central slide way for produce, in combination with the cutting devices and elevator. 9th. The knife spindle K provided with root knives K₁ and top knives K₂ secured in an adjustable cutter *k*, the spindle journaled on the frame B and combined with the arm K₃ and lever K₁. 10th. The cutter-head controlling device consisting of a lever K₄ fulcrumed upon a stud or cross-shaft, a connecting rod *k*₁ and guide arm K₃ having notch *k*₂. 11th. The elevator E provided with connected endless bands *e* running over pulleys *p* on a cross-shaft E₁, guide pulleys *p*₁ and pulleys *p*₂ under the platform B₁, the shaft E driven from the cross-shaft S, and the elevator provided with shaker motion and spout U, in combination with the frame B, and platform B₁, all substantially as described and for the purposes set forth.

No. 17,842. Spiral Springs for Railway Cars.

(*Ressorts à boudin pour wagons de railroute.*)

Edward Cliff, Oswego, N. Y., U. S., 10th October, 1883; 5 years.

Claim.—1st. An adjustable cap or covering for spiral springs, consisting of the main cap A, the movable disk B, which disk in its motion up and down, does not extend above the upper surface of cap A, or below the rib *d*, or below the plane in which the end of the main spiral rests, both inner and outer coils being of the same length, and when at rest in the same plate, substantially as described and for the purpose specified. 2nd. A graduated cap or covering for spiral spring consisting of the rim *a* having ribs *a*₁, the movable disk B and the same plane surfaces, in combination with the spirals E and D held together by bolt *m*, so as to prevent any rattling or displacement of said spirals, substantially as described and for the purpose specified.

No. 17,843. Sawing Machine.

(*Scierie mécanique.*)

George Hasson, Guelph, Ont., 10th October, 1883; 5 years.

Claim.—1st. A portable sawing machine in which the saw is carried by a reciprocating block operated by mechanism carried on the main frame, a cross-head arranged to support the reciprocating block and held between vertical guide posts attached to the main frame, in combination with a rope or chain connected to the cross-head at one end and at its other to an adjustable clutch journaled on the driving shaft so that the motion of the driving shaft may be utilized for the purpose of raising the saw, substantially as and for the purpose specified. 2nd. A portable sawing machine in which the saw is carried by a reciprocating block operated by mechanism connecting it to the main driving shaft which is carried on the main frame, the said frame being supported by ground wheels, the combination of mechanism arranged to connect the ground wheels with the driving shaft so that the motion of the latter may be utilized for the purpose of moving the sawing machine from place to place as desired, substantially as and for the purpose specified. 3rd. In a portable sawing machine in which the reciprocating motion of the saw is conveyed by mechanism carried on a portable frame, a carrying-frame supported on the main frame and arranged to carry the log being sawn, in combination with an opener made to follow the saw and held open, the parting made by it, as specified.

No. 17,844. Stove.

(*Poêle.*)

John A. Price, Scranton, Penn., U. S., 10th October, 1883; 5 years.

Claim.—1st. In a stove or range having a smoke discharge opening in its top, the combination of a box or chamber placed over the discharge opening and extending back behind the permanent back of the stove or range, and connected with a flue adapted to discharge into the chimney flue, substantially as and for the purpose specified. 2nd. The combination, with the range having the smoke-discharge opening in its top near the rear, the permanent range-back, and the box or chamber connecting the discharge opening and directing the smoke, etc., to the flue behind the permanent range-back, of a hinged shelf, hinged to the front of the permanent range-back, the whole arranged and operating substantially as described. 3rd. The combination, with the range-back, of the pivoted shelves, arranged at substantially right angles to each other, and the supporting-bracket, substantially as described. 4th. The combination, with a stove or range having a back-plate extending up above its top, and a shelf projecting forward from said back-plate over the top, of a flue extending rearwardly from a smoke-discharge opening in the top to a point behind the back-plate, where it connects with a smoke flue proper, substantially as described.

No. 17,845. Boot Brushes.

(*Brosses à chaussures.*)

Charles Boeckh, Toronto, Ont., 10th October, 1883; 5 years.

Claim.—1st. A boot-brush having the back to which the bristles are attached divided longitudinally, but detachably connected so that the brush may be used as a whole, but may at the same time be separated, substantially for the purpose explained. 2nd. In a boot-brush having the polishing-brush attached to the portion of the back marked B, and a blacking tin, G, fixed to its opposite side, as shown, in combination with a back E, having the blacking and mud brushes fixed to it with a recess provided with a cover F, designed to fit over the tin G, for the purpose of connecting the portions of the back marked B and E together, substantially as and for the purpose specified. 3rd. A boot-brush having the polishing-brush attached to one side of its back, and the mud and blacking brushes attached to its other side, the back being divided in the centre and detachably connected together by the blacking tin case, as specified, in combination with an open-ended tin case H, arranged to hold the brush, substantially as and for the purpose specified. 4th. A boot-brush having the back to which the bristles are attached, divided longitudinally so as to permit the insertion of a blacking tin between the two halves, the bottom of the tin being fastened to one-half while the other half for as a cover for the tin.

No. 17,846. Revolving Cylinder Engine.

(*Machine à cylindres tournants.*)

George W. Hunter, Philadelphia, Penn., U. S., 10th October, 1883; 5 years.

Claim.—1st. The combination of a plurality of cylinders and pistons, a driving shaft arranged at an angle with the engine and a universal joint for coupling the engine and shaft, substantially as described. 2nd. The combination described, of a plurality of cylinders and pistons, pillars for supporting the rock shaft and circular base, as set forth. 3rd. The combination of a plurality of cylinders and pistons, a driving shaft and means substantially as described for directly coupling the pistons and shaft, as specified. 4th. The combination of the pistons of a revolving cylinder engine, a rock-shaft supported by pillars connected with the cylinders, a walking-beam and a yoke, substantially as described. 5th. The combination of a pair of cylinders receiving and exhausting steam at one end, an inclined arbor and a driving-shaft opposite the other end of said cylinders, as set forth. 6th. The combination of the arbor, the rod disc *e* and tightening-nuts, as described.

No. 17,847. Perpendicular Flour-Dressing Machine.

(*Blutoir vertical.*)

Joseph M. Schutz, Minneapolis, Minn., U. S., 10th October, 1883; 5 years.

Claim.—1st. A series of revolving beaters arranged in sections perpendicularly, a perpendicular casing covered with bolting cloth and revolving outside of said series of beaters, and deflecting rings attached to said reel between each pair of beater sections, substantially as and for the purpose set forth. 2nd. A reel provided with perpendicular ribs, horizontal deflecting rings and bolting cloth, in combination with beaters *b*, disks K₁, K₂, K₃, K₄, K₅, K₆, rings H₁, H₂, H₃, H₄, H₅, H₆, and means for revolving said beaters, rings and disks, substantially as described. 3rd. The combination of the reel consisting of the rings E₁, E₂, E₃, E₄, E₅, E₆, E₇, ribs *a*, and bolting cloth *c*, with the shaft F₁, ring H₁, H₂, H₃, H₄, H₅, H₆, disks K₁, K₂, K₃, K₄, K₅, K₆, and beaters *b* attached to said shaft, and the deflecting ring *d*, substantially as and for the purpose specified. 4th. A series of revolving beaters arranged in sections perpendicularly, a perpendicular casing covered with bolting cloth and revolving outside of said series of beaters, deflecting rings attached to said reel between each pair of beater sections, and a stationary brush T, substantially as and for the purpose described.

No. 17,848. Nailing Machine.

(*Machine à clouer.*)

Andrew Eppler, jr., Boston, and Henry S. Bacon, Milford, Mass., U. S., 10th October, 1883; 5 years.

Claim.—1st. In a nailing machine of the class described, two series or pairs of cutters adapted at one operation to cut out a short section or length from a continuous wire, and thereby form the V-shaped point of one nail and the flat head of another by the removal of the cutout section, substantially as set forth. 2nd. In a nailing machine of the class described, the combination of the grooved reciprocating cutter *o*, having the cutting edges 2-2 and 3, the compressor *u*, located in the groove of the cutter *o*, the V-shaped cutter *s*, having the cutting edges 4-4, and adapted to act as a compressor, and the cutter *t*, all arranged

and operated substantially as described. 3rd. In a nailing machine of the class described, the combination of the lever or support *p*, having the cutter *o*, means substantially as described, for reciprocating said lever and cutter, and the fixed cutters *s* and *t*, all arranged and operated substantially as described. 4th. The combination, of a vertically reciprocating slide, a spring feed dog or lever *k*, pivoted thereto, and the head *B* having the adjustable projection mounted thereon, substantially as described, whereby the length of the feed movement is regulated, as set forth. 5th. The carrier *c*, having the spring plate *g*, whereby the nails are kept in a vertical position while being moved forward to the driver, as set forth. 6th. The combination of the carrier *c*, the spring *u* adapted to hold the nail, and the fixed projection *ps* adapted to displace the spring and release the nail, as set forth. 7th. The reciprocating slide *A*, having the spring feed dog, combined with the adjustable projection and means, substantially as described, for adjusting said projection. 8th. In a sole-nailing machine having a work supporting horn, the combination, with said horn and its supporting operating and adjusting devices, substantially as described, of the reciprocating slide *A*, having the spring feed dog, the movable projection *m*, and intermediate means, substantially as described, whereby the projection *m* is adjusted simultaneously with the horn, as set forth. 9th. The combination, with the reciprocating slide having the spring feed dog, of the adjustable projection *m*, the lever *m'*, rod *L*, having the stops or collars *L* *ns*, and spring *M*, adjustable rod *I*, having bracket *K*, the treadle *H*, the spring-supported horn connected to said treadle, as set forth.

No. 17,849. Cord Binder for Harvester.

(*Lieuse à corde pour moissonneuse.*)

A. Harris, Son & Co., (assignee of John Harris and Joseph Lucas,) Brantford, Ont., 10th October, 1883; 5 years.

Claim.—1st. In a self-binding harvester, the hinging of the frame carrying the binding mechanism to the harvester so that the binding table and attachments with the entire knotting mechanism may be folded up to reduce the width of the machine. 2nd. In a self-binding harvester in which the binding mechanism is attached to a frame having a forward and backward movement on the harvester to which it is hinged, the combination of an independent table fixed to the harvester and extending from the conveying apron to the binding table. 3rd. In a self-binding harvester in which the binding table is hinged to the harvester below an independent table leading from it to the conveying-apron, one or more bolts arranged to hold down the independent table, in combination with springs as specified so as to permit a slight upward movement of the independent table during the folding of the binding table. 4th. In a self-binding harvester, in which the frame carrying the binding-mechanism is hinged to the harvester, and the portion of the packer-shaft deriving its motion from the harvester is carried thereon, a socket formed in the hub of the packer-crank to receive the end of the packer-shaft, in combination with a spring attached to the shaft and arranged to engage with the packer-crank, substantially as and for the purpose specified. 5th. In a self-binding harvester in which the frame carrying the binding-mechanism is hinged to the harvester, the combination of an arm pivoted on the bottom of the frame and arranged to support the frame when folded up. 6th. In a self-binding harvester, in which the binding mechanism is attached to a frame hinged to the harvester so that the binding-table and mechanism may be folded up to reduce the width of the machine, the combination of a cranked lever arranged to impart a longitudinal movement to the said frame, substantially as and for the purposes specified. 7th. In combination with the binding attachment of a harvester, one or more fingers attached rigidly to the knot-shaft for the purpose of retaining loose grain while the sheaf is being formed.

No. 17,850. Machine for Making Barrels.

(*Machine à faire les tonneaux.*)

James Massie, Toronto, Ont., 10th October, 1883; 5 years.

Claim.—1st. In a machine for making barrels, in which the staves are fed in so as to arrange themselves around the periphery of a revolving former, two ring-shaped frames, situated one at each end of the machine at such a point that they will form a retaining ring at and for the ends of each staff fed into the revolving former, for the purpose of holding the staves together till the barrel has been trussed, substantially as and for the purpose specified. 2nd. In a machine for making barrels, in which the staves forming the barrel are held by rings supported by a shaft and constituting an inside former for the barrel, the combination of ring-shaped frames, one at each end of the barrel former, and each frame being divided into two parts so that the diameter of the ring-shaped frames may be increased or decreased as required. 3rd. In a machine for making barrels, the ring-shaped frame *C* divided into two parts and situated at one end of the barrel former, in combination with a correspondingly divided ring-shaped frame situated at the opposite end of the former, the corresponding half of each frame being connected together by a cross bar so that two corresponding halves of each frame shall move simultaneously when operated by the spindle which has cut upon it a right and left hand screw passing through correspondingly threaded nuts attached to the cross bars, substantially as and for the purpose specified. 4th. In a barrel-making machine, in which the staves to form the barrel are fed in between a revolving former and stationary ring-shaped frames, the combination of a table attached to the frame of the machine in such a position that the staves arranged upon it can readily be fed into the machine. 5th. In a barrel-making machine in which the staves are fed in between a revolving former and stationary ring-shaped frames, a table upon which the staves are arranged by the operator, in combination with cross-cut saws and crozing and chamfering knives operated to finish the ends of the staves before they are fed into the former. 6th. In a barrel-making machine in which the staves are arranged on a table by the operator, the combination of feeding mechanism arranged to feed the staves around the revolving former, substantially as and for the purpose specified. 7th. In a barrel-making machine in which the staves are fed around a revolving former and held in position by stationary ring-shaped frames at either end, the combination of a revolving planer knife carried on a swinging frame and having the spindles parallel with the axis of the barrel-

former, the said knives being arranged to plane off the exterior surface of the staves when arranged around the revolving former, substantially as and for the purpose specified. 8th. In a machine for making barrels, a cylindrical former composed of rings made in segments, each segment connected to a sleeve fitted on to a central shaft or spindle in such a manner that the longitudinal movement of the sleeves shall cause the collapse of the former made by the rings, as specified. 9th. In a machine for making barrels, a cylindrical former composed of rings, in combination with enlarging pieces arranged to fit on to the rings for the purpose of enlarging the diameter of the former, substantially as and for the purpose specified. 10th. In a machine for making barrels in which the staves are arranged between a revolving frame and stationary ring-shaped frames, pressure bars suitably carried on the frame of the machine near the former, in combination with lever or screw mechanism arranged to operate the pressure bars in such a manner, as to cause them to truss the barrel, as specified.

No. 17,851. Tricycle. (*Tricycle.*)

J. G. Bailey, Patterson, and R. Thorne, Toronto, Ont., 10th October, 1883; 5 years.

Claim.—1st. In a tricycle, the rider's seat carried on a jointed frame connected at one end to the crank axle and at the other to the front frame of the machine, in combination with a frame correspondingly jointed and connected, but arranged to carry the stirrups upon which the feet of the rider rest, substantially as and for the purpose specified. 2nd. The combination with the seat *K*, of the jointed frame *J*, one end of which is hinged to the front frame *C* and the other end to the crank on the driving axle *G*, substantially as and for the purpose specified. 3rd. The combination, with the stirrups *N*, of the jointed frame *M*, one end of which is hinged to the front frame *C* and the other end to the crank on the driving-axle *G*, substantially as and for the purpose specified. 4th. In a tricycle, in which the front frame *C* is connected to the driving-axle *G* by the rods *F* journaled on the axle *G* and braced as described, the combination of a jointed frame connected at one end to the front frame, and at the other to the crank on the driving-axle, substantially as and for the purpose specified.

No. 17,852. Combined Plug and Strainer for Sinks. (*Couloir et tampon combinés des éviers.*)

J. Iredale, Toronto, Ont., 10th October, 1883; 5 years.

Claim.—1st. A drain pipe *B* provided with a hollow plug *C*, in combination with a strainer *E*, substantially as and for the purpose specified. 2nd. A drain pipe *B* provided with a hollow plug *C*, having a strainer *E* attached to and suspended above it, in combination with an auxiliary plug *F* made to fit the aperture in the plug *C*, substantially as and for the purpose specified. 3rd. A drain pipe *B* provided with a hollow plug *C*, having a strainer *E* attached to and suspended above it, in combination with the auxiliary plug *F* made to fit the aperture in the plug *C* and provided with a hinged spindle *a*, substantially as and for the purpose specified.

No. 17,853. Filling Cans. (*Bidons de transvasement.*)

Milton H. Garland, Boston, Mass., U. S., 10th October, 1883; 5 years.

Claim.—1st. In a filling can, a flexible air-conducting tube *E*, provided with a mouth-piece and a valve or stop-cock, in combination with a discharge pipe *J*, and a conducting or filling tube *G*, substantially as described. 2nd. In a can for filling lamps and for other purposes, a flexible and detachable air-pipe *E*, having a mouth-piece for the induction of air, substantially as described and shown, and a stop-cock for regulating the current of air and for opening or closing said pipe, in combination with the pipe *d*, and a discharge pipe. 3rd. In a filling can provided with a storage compartment below the upper part of its body, the discharge pipe *J*, the nipple *m*, with a longitudinal opening through its centre, a filling tube *G*, provided at one end with a sleeve or elbow to fit the said nipple *m*, and at the other end with a conical discharge-nozzle *a*, in combination with a flexible detachable air-conducting pipe having a stop-cock and a mouth-piece through which air is blown from the lungs of the operator, substantially as described.

No. 17,854. Tanning Apparatus.

(*Appareil de tannage.*)

John L. Braun, Stirton, Ont., 10th October, 1883; 5 years.

Claim.—1st. In a leather tanning apparatus, the above described drum consisting mainly of the heads *C* *C*, band *E*, trunnions *a* *a*, pulley *e*, slits *d* *d*, formed in the band door *e*, with the locking bar *f*, and the catch pins *g* *g*, substantially as described. 2nd. The combination of the described drum, consisting mainly of the drum heads *C* *C*, and band *D*, with the tan vat *A*, having the bearings *b* *b*, substantially as described and for the purpose set forth.

No. 17,855. Horse Shoe. (*Far à cheval.*)

Henry Dunning, Wellington, Ont., 10th October, 1883; 5 years.

Claim.—As an improved article of manufacture, a horse shoe, composed of the foot portion *A*, having the rear half rounded, and an overlying steel spring *D*, of uniform thickness throughout welded to the front of the shoe, said spring corresponding to the shape of the foot portion *A*, and having a portion cut away to expose the crease in the foot portion, whereby the nails can be driven, as set forth.

No. 17,856. Machine for Sprinkling Paris Green Liquid. (*Machine de distribution du vert de Paris liquide.*)

Norman L. Kinney, Barford, Que., 10th October, 1883; 5 years.

Claim.—The box *A*, with springs *B* *B*, and the valves at the bottom, also the connecting rods *C* *C*, with the lever *D*, and the cross-bar *E*, and the guide lever *F*, with the hose and faucets *L* *L*, all in combination, as and for the purposes described.

No. 17,857. Shovel. (Pelle.)

Edward L. Fenerty, Halifax, N. S., 10th October, 1883; 5 years.

Claim.—The combination of a metal socket B, having the flange C figs. 2 and 3 at its lower extremity suitably formed or curved to fit the hollow A, in the pan D, figs. 1 and 2, secured by rivetting or welding, substantially as and for the purpose set forth.

No. 17,858. Paper Matting or Carpet.*(Tapis ou natte en papier.)*

John Bray, Washington, D.C., and Charles H. Longley, Hartford, Conn., U. S., 10th October, 1883; 5 years.

Claim.—1st. A matting or carpet for covering floors, composed of a woven or knit fabric made from strands or threads of paper, substantially as and for the purposes described. 2nd. A matting or carpet for covering floors, composed of a woven or knit fabric in which the warp or the woof is made of twisted strands of paper, and the warp or the woof of animal or vegetable fibre, substantially as set forth.

No. 17,859. Valves for Steam Engines.*(Soupapes de machines à vapeur.)*

Naomi E. Doty, (assignee of R. Doty,) Leonardsburg, Ohio, U.S., 10th October, 1883; 5 years.

Claim.—1st. In a steam engine, the combination with the steam chest A provided with the steam ports *a a*, the exhaust ports *c c*, and the passages *d*, of the plain steam valve B₁ and the bridge exhaust valve B, substantially as shown and described, whereby provision is made for cutting off the steam at any point in the stroke of the piston and keeping the exhaust open until the piston has returned to the end of the cylinder, as set forth. 2nd. The combination of the steam cylinder C, piston *e*, inlet valve B₁, working in a steam chest *a*, the exhaust valve B, working in a separate chest *b*, and having extensions *m*, of the ends, the live steam inlet pipe *l*, and the pipe *n*, connecting the valve chests *g h*, substantially as shown and described. 3rd. The combination with a steam cylinder and its piston, of the inlet valve B₁, controlling the ports *a*, at both ends of the cylinder, the exhaust valve B, having end extensions *m*, and passages *i*, controlling exhaust passages *e j k*, the live steam inlet pipe *l* and the pipe *n*, connecting the valve chests, substantially as specified, the said valves B₁ B, being arranged in separate chests and for being operated by independent connections, substantially as shown and described.

No. 17,860. Dentist's Flask.*(Châssis de moulage des dentistes.)*

J. W. Elliott, Leicester, Mass., U.S., 11th October, 1883; 5 years.

Claim.—1st. A dentist's flask in which the lower section has two clamping straps pivoted to it opposite to each other, and two guiding pins rigidly fixed in lugs cast on the said lower section, in combination with the centre sections having lugs cast near its lower edge to fit over the pins, and recesses made in its top edge to receive the lugs, cast on the cover or top section, the outer top edge of the lugs being below the top surface of the cover, and bevelled so that the hooked ends of the straps are pressed over them, the three sections forming the flask are drawn closely together. 2nd. In a dentists flask in which the three sections are held together by two straps pivoted to the lower section, and having hooked ends to fit over bevelled lugs cast on the top section or cover, the combination of flanges cast on the outer edge of the lug so as to clip over the centre section, substantially as and for the purpose specified.

No. 17,861. Ditching Machine.*(Machine à fossoyer.)*

W. Rennie, (assignee of Henry Carter,) Toronto, Ont., 10th October, 1883; 5 years.

Claim.—1st. An elevating wheel of a ditching machine having a segmental rim composed of plates separated from each other but all rigidly bound together by two metal rings about the same diameter as the periphery of the wheel and forming a flange on either side of the segmental rim to constitute the rigid connection specified. 2nd. In an elevating wheel of a ditching machine having a segmental rim composed of plates separated from each other but bound rigidly together by two metal rings secured to and on either side of the said plates, the combination of body pieces hinged to and between the metal rings so as to form with the plates a series of discharging earth buckets, substantially as and for the purpose specified. 3rd. In a ditching machine in which the body piece of each earth elevating bucket is hinged between rings forming sides to the tyre or rim of the wheel, a series of plates forming the bottom of the buckets and also the segmental ring of the wheel, each plate being flanged behind the pivot point of the buckets while that portion of it which forms the bottom of the bucket is inflanged and is of such a width that the body piece can work freely between it and the rings to which the plates are rivetted. 4th. In a ditching machine in which the earth is elevated by a series of buckets arranged round the periphery of a wheel, each bucket being composed of a stationary bottom and a hinged body piece as described, the combination of a series of rollers located at the discharging spout of the elevating wheel so that the body of the buckets will come in contact with them so as to be pushed back clear of the outer rim, substantially as and for the purpose specified. 5th. In a ditching machine in which the body piece of each elevating bucket is hinged as described and is provided with a friction roller as specified, the combination of a spring cam bar so shaped and arranged that the body piece of each bucket as it approaches the ground is forced out beyond the periphery of the wheel in order to constitute a grip to prevent the wheel slipping, substantially as and for the purpose specified. 6th. In a ditching machine in which the body pieces of the elevating buckets are thrown in and out as required by a cam bar, a joint formed in the said cam bar near the point where the buckets commence to raise the material, in combination with a spring arranged to act on the said cam bar near the said joint so that, while forcing the body piece out to form elevating buckets, they will give

should they come in contact with an obstruction. 7th. In a ditching machine in which the earth is elevated by a series of buckets formed on the periphery of a wheel, a spade or plow carried in bearings so arranged that when the spade is raised or lowered it will follow the circle of the said wheel. 8th. In a ditching machine in which the earth is elevated by a series of buckets formed on the periphery of a wheel, a curved plate held in position by a spring so as to form a back to the buckets while elevating the earth, in combination with sides detachably fixed to the plates so that they can be readily removed when the machine is to be worked in sticky ground. 9th. In a ditching machine in which the weight of the machine is carried by the earth elevating wheel journaled in a frame adjustably connected to a steady frame supported by two wheels, one on each side of the machine, the combination of a stay rod fastened to the axle of each wheel and extending obliquely to the tongue of the machine in such a manner that their connecting point or points move longitudinally on the said tongue to permit the free vertical movement of either, the steady frame or the tongue, substantially as and for the purpose specified. 10th. In a ditching machine, the combination of land sides F₁ made slightly wider than the elevating wheel and located, substantially as and for the purpose specified. 11th. In a ditching machine, in which the elevating wheel is operated by the forward movement of the machine, the combination of the castor wheel A arranged to support the frame of the machine and adjusted by steering gear operated from the drivers' seat.

No. 17,862. Grain Binder and Corn Husker.*(Appareil à éplucher le blé-d'inde et lier les gerbes.)*

C. H. Lynde, Marlborough, Ohio, U.S., 11th October, 1883; 5 years.

Claim.—1st. The implement set forth provided with a curved pointed end B, a rounded curved heel A, with an opening D, and slot E, near one end thereof for the prepared bands, substantially as described. 2nd. A corn husker constructed and arranged as described, in combination with the holder G, as herein specified.

No. 17,863. Dynamo-Electric and Electro-Dynamic Machine.*(Machine dynamique-électrique et électro-dynamique.)*

J. D. K. Andrews, Glasgow, Scotland, 11th October, 1883; 5 years.

Claim.—1st. Constructing the revolving armature by winding on a non-magnetic core iron wire rope coiled with insulated conducting wire, substantially as described. 2nd. The construction and arrangement of machine, substantially as described, with reference to figs. 1 and 2. 3rd. Driving the armature through a spring from the shaft which carries the commutator, substantially as and for the purpose set forth with reference to fig. 3. 4th. Driving the armature and commutator through a differential coupling having the brushes attached to a spring frame carrying the intermediate gear of the coupling, substantially as and for the purposes described with reference to figs. 4 and 5.

No. 17,864. Seamless Upper Boots and Shoes.*(Chaussures à empeignes sans couture.)*

T. T. Marshall, Jarvis, Ont., 11th October, 1883; 5 years.

Claim.—1st. As an improved article of manufacture, a seamless upper boot or shoe, having the front strap or straps and the back strap integral or in one piece with the upper, substantially as set forth. 2nd. In a crimped seamless upper for a boot or shoe, the front and back straps cut from the opening for the admission of the foot and of one piece with the upper, substantially as set forth.

No. 17,865. Automatic Car-Coupler.*(Attelage automatique des wagons.)*

John K. McLeod, London, Ont., 13th October, 1883; 5 years.

Claim.—1st. In a draw-head provided with an ordinary coupling-pin B, a head E, connected to the coupling-pin and provided with springs F, in combination with the lever G, pivoted to the end of the car, substantially as and for the purpose specified. 2nd. In a draw-head provided with an ordinary coupling-pin, a head E, connected to the coupling-pin and provided with springs F, arranged to flexibly connect the head to the lever G, in combination with the pivot H, and joint I, substantially as and for the purpose specified. 3rd. In a draw-head provided with an ordinary coupling-pin and link, a rod M, journaled on the end of the car, in combination with a crank L, arranged to support the link C, as specified.

No. 17,866. Water Conducting Pipe.*(Tuyau conducteur pour l'eau.)*

Edward A. Sanders, Montreal, Que., 15th October, 1883, 5 years.

Claim.—1st. The combination in a water conducting pipe, of the outwardly turned flanges *a a*, and cap *az*, substantially as and for the purpose specified. 2nd. In combination, with a water conducting pipe having a seam formed of rectangular flanges, of the staple B, having head *b*, and the clamping ring *c*, substantially as and for the purpose set forth. 3rd. The combination with a water conducting pipe A, having a depressed or pannelled side C, with perforations *d* through same, of the plate D, attached to said pipe A, so as to form a chamber opposite perforations *d*, and closed at its bottom, substantially as and for the purpose specified. 4th. The combination, with a water conducting pipe having outwardly turned flanges and cap, as described, and staple B, having head *b*, of clamping ring made in two pieces *c az*, interlocking with each other and arranged, substantially in the manner and for the purpose set forth.

No. 17,867. Electric Current Regulator.*(Régulateur des courants électriques.)*

Charles G. Perkins, New York, N. Y., U. S., 15th October, 1883; 5 years.

Claim.—1st. In an electric-current regulator, the combination of the electro-magnets *a* *a*2, armature *c*2, having the pawls *c* *c*1, and cross-piece *k*3, said armature playing in a making and breaking circuits *k*1 *k*2, with the regulating electro-magnet *a*4, lever armature *c*3, spring *l*1, limiting set-screws *l*2, shunt resistance *a*3, pawls and armature attachments *g* *g*1, and ratchet-wheels *d* *d*1, substantially as described and for the purpose set forth. 2nd. In an electric current regulator, the combination of the electro-magnets *a* *a*2, and the armature *c*2, having the cross-piece *k*3, playing in a making and breaking circuit *k*1 *k*2, with the pawls *c* *c*1 and ratchet wheels *d* *d*1, said ratchet-wheels being so connected with the brushes *m* *m*1, of the commutator, that these brushes will be carried round with the ratchet-wheels for the purpose of increasing or decreasing the strength of the current, substantially as set forth. 3rd. In an electric current regulator, the combination of the magnets *a* *a*2, armature *c*2, having cross-piece *k*3, playing in a making and breaking circuit *k*1 *k*2, with the pawls *c* *c*1, and ratchet wheels *d* *d*1, said pawls being connected to armature *c*3, by the attachments *g* *g*1, substantially as described and for the purpose set forth. 4th. In an electric current regulator, the combination of the magnets *a* *a*2, armature *c*2, having cross-piece *k*3, playing in a making and breaking circuit *k*1 *k*2, the pawls *c* *c*1, and ratchet wheels *d* *d*1, with the attachments *g* *g*1, the armature *c*3, spring *l*1, electro-magnet *a*4, and the set screws *l*2, arranged and constructed, substantially as described.

No. 17,868. Incandescent Lamp.

(*Lampe incandescente.*)

Charles G. Perkins, New York, N. Y., U. S., 15th October, 1883; 5 years.

Claim.—1st. In an incandescent electric lamp, the combination of a number of carbon filaments formed of one piece mounted upon a central supporting and conducting wire as at *b*, the other ends being sealed separately at the base as at *c*, so that each half-loop may be made a separate light giving body, substantially as described. 2nd. In an incandescent electric lamp, the combination of two or more carbon filaments consisting of one piece inclosed in a chamber exhausted of air, and the contact maker and breaker *e*, formed of one piece constructed so as to simultaneously or singly operate a number of lights in one chamber, said contact spring having the slot *e*1, and the depression at one side thereof, and the thumb piece *g*, having the graduated notch *g*2, with the spring *g*1, the whole constructed, substantially as described and for the purpose set forth.

No. 17,869. Switch for Incandescent Lamps.

(*Aiguille pour lampes incandescentes.*)

Charles G. Perkins, New York, N. Y., U. S., 15th October, 1883; 5 years.

Claim.—1st. In a switch for incandescent lamps, the combination of the top spiral spring at *e*, resting upon and in electrical contact with the shaft, the thumb-piece *b*, and safety device, consisting of the spring *h*1, collar *h*2, and notched or ratchet barrel *h*3, substantially as described. 2nd. In a switch for incandescent lamps, the combination of the contact making springs *a* *a*, varying in width and fixed to and in electrical contact with the shaft and operated by the thumb piece *b*, the grooved contact strips in *c* *c*, the grooves varying in width to suit the varying width of the contact springs, said grooves having the stop pins *e*2 *e*2, and wire connections *d* *d*, substantially as shown and described. 3rd. In a switch for incandescent lamps, the combination of the contact making springs *a* *a*, varying in width, the grooved contact strips in *c* *c*, having the stop pins *e*2 *e*2, and wire connections *d* *d*, said grooves varying in width to suit the varying width of the springs *a* *a*, the safety device consisting of the spring *h*1, collar *h*2, and notched or ratchet barrel *h*3, thumb piece *b*, and spiral spring at *e*, substantially as shown and described. 4th. In a switch for incandescent lamps, the combination of the inclosing switch box having the radial sockets *g* *g*, for the reception of the burner branches, the grooved pieces *c* *c*, having the contact strips stop pins *e*2, and wire connections *d* *d*, substantially as described and shown.

No. 17,870. Electric Lamp. (*Lampe électrique.*)

Charles G. Perkins, New York, N. Y., U. S., 15th October, 1883; 5 years.

Claim.—1st. In electric arc lamps, the mechanism for regulating the distance to be maintained between the electrodes which consists in the combination of the electro-magnets at *a*2, having the sliding core *b*, to which is attached the lever *c*, having the arm *e*, with roller *g*, and arm *e*1, the divided friction band *i*2 *i*2, embracing the revolving disk *j*2, and the weight *l*, in conjunction with a rack and pinion connected with the positive electrode of the lamp, substantially as described. 2nd. In electric arc lamps, the combination of the divided friction band *i*2 *i*2, hinged at *i*3, and turned up at *g*2, the rotary disk *j*2, with the roller *g*, rack *g*1, and pinion *j*3, substantially as described and for the purpose set forth. 3rd. In electric arc lamps, the combination of the encircling friction band *i*2 *i*2, embracing the periphery of the disk *j*2, and friction-band weight *l*, with lever *c*, arm *e*, roller *g*, arm *e*1, shunt resistance *o*, and spring *n*, substantially as described. 4th. In electric arc lamps, the combination of the encircling friction band *i*2 *i*2, with the arm *e* and roller *g*, arm *e*1, and weight *l*, and pins 1 and 2, substantially as described.

No. 17,871. Bee Hive. (*Ruche.*)

Daniel Bailey, Buckeye, Ohio, U. S., 15th October, 1883; 5 years.

Claim.—1st. In a hive, the combination of the brood-chamber having inclined sides, a raised board which is placed inside of the hive and the removable perforated piece *c*, to which the board is secured, substantially as described. 2nd. In a hive, the combination of the brood-chamber *A*, having the troughs *H*, formed in its edges with the upper portion of the hive, the cleats *J*, and the slides *I*, substantially as shown. 3rd. The combination of the brood-chamber, a honey chamber placed thereon, and suitable slides which are placed between the two chambers, so as to support the honey-chamber, substantially as specified.

No. 17,872. Cinder Sifter. (*Crible à cendre.*)

Henry W. Booth, Windsor, Ont., 15th October, 1883; 5 years.

Claim.—1st. The combination, with an ordinary hand-sieve, of a cover fixed to the open side of the sieve and having a hole made in it so that one side of the hole shall be even with the inner surface of one side of the body of the sieve, substantially as and for the purpose specified. 2nd. An ordinary hand-sieve having a cover fixed to its top with a hole made in it so that one side of the hole shall be even with one side of the body of the sieve, the said hole having a detachable cover fitted to it, substantially as and for the purpose specified. 3rd. An ordinary hand-sieve provided with a cover *C*, having a flange extending around its outer rim to form a joint around the top of the barrel *D*, which it fits, as specified, in combination with a hole *E*, made in the cover *C*, as specified, and having a detachable cover fitted to it, substantially as and for the purpose specified. 4th. A sieve with a body *A*, having a perforated bottom *B*, and a top *C*, with a hole through it, as specified, and provided with a detachable cover, in combination with the handles *G*, substantially as and for the purpose specified.

No. 17,873. Boot Stretcher. (*Forme brisée.*)

Isaac W. Myers, Hamilton, Ont., 15th October, 1883; 5 years.

Claim.—1st. In a boot stretcher, constructing the instep *G* and upper heel portion in one entire piece, substantially as and for the purpose specified. 2nd. In a boot stretcher, the point *t*, of the worm rack *a*, made to operate in and out of an opening in the heel piece *B*, substantially as and for the purpose specified. 3rd. In a boot stretcher, constructing a diagonal recess *v* in the heel portion of the instep *G*, and placing therein the disk *B*, diagonally or at an incline, so that its worm *at* will mesh into and operate the worm rack *a* at one portion only and enable the rack to move its entire length, for the purpose specified. 4th. In a boot stretcher, hinging the wings or side pieces *F* in the centre of the heel portion, as and for the purpose specified. 5th. In a boot stretcher, the collars *s* *s*, placed on the screws *C* *H*, as and for the purpose specified. 6th. In a boot stretcher, the stud *r*, cast on the skeleton frame, and made to pass up to the roof of the instep *G* and steadied in place between the lugs *y* *y* cast on the roof of the said instep, as described. 7th. In a boot stretcher, the solid prop *z*, cast on the toe of the instep plate proper *J*, and made to slide in a groove in the bottom of the skeleton frame, as and for the purpose specified. 8th. In a boot stretcher, uniting the instep *G* and skeleton frame *A*, by constructing a projection *u*, on the former and causing it to pass through an opening *x*, in the latter, substantially as and for the purpose specified. 9th. The skeleton frame *A*, and heel plate portion *A*1, constructed in one piece, as specified. 10th. In a boot stretcher, securing the instep *G*, the skeleton frame *A* and wings or side pieces *F* *F* together by hinge pin *m* at the center of the heel, substantially as and for the purpose specified.

No. 17,874. Furnace for Locomotive and other Boilers. (*Fournaise pour locomotive et autres chaufoiriers.*)

John A. Gano, Cincinnati, Ohio, U. S., 15th October, 1883; 5 years.

Claim.—1st. The combination, in a boiler-furnace or fire-box, of a water partition *P*, having legs *L* *L*, that pass through the crown-sheet and terminate in curved extremities in the water space over or above said crown-sheet with a rear water wall, and with a combustion chamber *C*, for use in connection with and as a part of a boiler, either for evaporation or vaporization, to which it is attached, in the form as described, and placed in furnace or fire-box at such an angle to the fire as shall produce the results aimed at namely, circulation through the partition of the contents of the boiler, from its bottom or lower level into or near its upper water level at convenient points in the space above the fire-box or furnace and thus causing continuous complete agitation of the contents of the boiler, whether the boiler be for use as steam generator or evaporator. 2nd. In a boiler-furnace or fire-box, the combination of a rear water-wall depending from and having interior connection with the boiler, with a water partition *P*, having legs *L* *L*, that pass through the crown-sheet and terminate in curved extremities in the water space over or above the crown-sheet of the boiler, so as to permit the free flow and current of the contents of the boiler, through the water-wall, on through the partition, and thence through its legs into the water-space above the crown-sheet, the connection of the water-partition and the rear water-wall being made at any point between the foot thereof and the bottom of the boiler, and in such manner and form as may be preferred.

No. 17,875. Fanning Mill. (*Tarare-cribleur.*)

Salime Bessette, St. Athanase, Que., 15th October, 1883; 5 years.

Claim.—In a fanning mill, the bracket *E* attached to the frame work of the machine, and carrying the tightener pulleys *a* and *b*, substantially as and for the purpose set forth and described.

No. 17,876. Machine for making Spiral Springs. (*Machine à fabriquer les ressorts à boudin.*)

Oscar S. and William S. Foster, Utica, N. Y., U. S., 15th October, 1883; 5 years.

Claim.—1st. The combination, with a machine for coiling metal springs, of combined cutting and bending mechanism placed in close proximity to the coiling mechanism, and adapted to sever the coiled spring from the spring metal strip and bend the end of the strip to form the point for the next spring at one end and the same operation. 2nd. In a machine for coiling bed springs from a continuous strip of spring wire, the combination with a grooved cone having a slotted end, or a combined cutter and bender situated in close proximity to the cone, and adapted to sever the spring from the strip and bend the end of the strip to form the point of the next spring, substantially as set forth. 3rd. In a machine for making bed springs, the combination with suitable coiling mechanism, of the bar *E*, slotted as described

and provided with a rigid cutting edge or jaw, and a rigid V-shaped bending jaw removably secured thereto, and a combined cutting and bending jaw pivoted to the said bar, and constructed as described, and adapted to operate in conjunction with the rigid cutting edge and bending jaw, substantially as set forth. 4th. In a machine for making bed springs, the combination with the coiling cone, of the bar E, slotted as described, and provided with a removable cutting jaw and a rigid bending jaw secured thereto, and a combined cutting and bending jaw pivoted to the said bar, and adapted to operate in conjunction with the removable cutting jaw and rigid bending jaw, all of the above parts constructed and adapted to operate, as described. 5th. The process of forming a spring, consisting, essentially in first coiling the spring and bending the end of the base coil inwardly towards the body of the spring, then forming an eye in the second coil around the inwardly-bent end, and finally bending the said end down on the eye. 6th. The combination, with suitable coiling mechanism of confined cutting and bending mechanism placed in close proximity to the coiling mechanism and adapted to sever the coiled spring from the spring metal strip, bend the end of the base coil inwardly toward the body of the spring to form a hook, and bend the end of the strip to form the point for the next spring, the said cutting and bending mechanism consisting, essentially, of a bar having an open slot and a fixed cutting blade, a movable bending jaw secured to the opposite sides thereof and adapted to be operated by independent levers, and rigid bending jaws secured to opposite sides of the bar, and respectively in front of the said movable jaws, substantially as set forth. 7th. In a machine for forming bed springs from a continuous piece of wire, the combination with a groove cone, of movable and fixed combined cutting and bending jaws situated in close proximity to the cone and disposed respectively diagonally to each other, and adapted to sever the spring from the strip, bend the end of the spring inwardly toward the body of the spring, and bend the end of the strip to form the point for the next spring, substantially as set forth. 8th. The combination, with a cone, of an adjustable bar situated above the cone, and combined cutting and bending jaws secured to the face plate. 9th. The combination, with a cone, of an adjustable bar situated above the cone, of movable bending and cutting jaws pivotally secured to the bar, and jaws rigidly secured to the said bar and adapted to act in conjunction with the movable jaws. 10th. The combination, with a revolving core and a bar situated above the same, and provided with an open slot and a fixed cutting blade or edge, of the rigid and removable jaws, the arms and lever connected thereto, and the adjustable pitman and treadles, all of the above parts, combined and adapted to operate as described. 11th. The combination, with a base plate for supporting the spring, of devices for forming an eye around the upwardly projecting end *h²* thereof, and devices for bending the said end down over or on the eye, substantially as set forth. 12th. The combination, with a base plate, of a shaft, the lower end of which is provided with a socket or opening for the reception of the upwardly projecting end *h²*, of the spring, horizontal arm secured to said shaft, and a roller secured to the said arm, substantially as set forth. 13th. The combination, with a base plate constructed as described, of a revolving shaft having a socketed lower end and arm secured to said shaft, a roller secured to the arm and devices for bending the end *h²* down over the eye formed by bending the wire around the said end *h²*, substantially as set forth. 14th. The combination, with the base plate, the bearing *o* provided with the open slot, of the shaft provided with the stud, a spring encircling the shaft, an arm secured to the lower end of the shaft, a roller secured to the arm, and a device for bending the end *h²* of the spring over the eye formed by the roller. 15th. The combination, with the base plate, bearing shaft arm and roller, of the cranked shaft and devices for operating the same, substantially as set forth. 16th. The combination, with base plate, shaft, and the removable plug adjustably secured within the lower end of the shaft, of the cranked shaft and devices for operating it, substantially as set forth. 17th. The combination, with the base plate, shaft, spring, arm, and roller, of the crank shaft provided at its outer end with a pinion, all of the above parts combined and adapted to operate, as described.

No. 17,877. Fence. (*Clôture*.)

Abraham C. Scarr, Maryborough, Ont., 15th October, 1883; 5 years.

Claim.—The combination in a rail fence, of the rails A, supported by the ground sills B, the horizontally-lying parting blocks C and wire loop D enclosing the top rail A, and the ground sills B, as shown and described.

No. 17,878. Car Coupling. (*Attelage des wagons*.)

Charles Devlin, Pembroke, Ont., 15th October, 1883; 5 years.

Claim.—1st. In a car-coupling, the weight or bar D, carrying a coupling-pin B forwardly, and operating vertically in a slot in the top of the draw-head, to maintain the link horizontally for coupling, by bearing on the inner end, and the pin entering a hole in the bottom of the draw-head to couple the link, substantially as set forth and shown. 2nd. The yoke I, in combination with the draw-head A, and head C, for limiting the rise of the bar or weight D, as set forth. 3rd. The combination with the bar or weight D, having pin B, and head C, of the shackle E, arm F, staple J, rock shaft G, having weighted arms H, as set forth for the purpose described.

No. 17,879. Horse Hobbie. (*Entrave de cheval*.)

Edward Bearss, Humberstone, Ont., 15th October, 1883; 5 years.

Claim.—1st. The combination of the straps F F and E, and the breast piece A, cross bars B B, cords C C, substantially as and for the purpose set forth. 2nd. The combination with the straps F F and E, and the breast piece A, cross bars B B, cords C C, substantially as and for the purpose set forth.

No. 16,880. Car Coupler. (*Attelage des wagons*.)

Hugh Graham, Dartmouth, N. S., 15th October, 1883; 5 years.

Claim.—The combination of the sliding bar B, and the spring catch C, and the inside spring I, the guide D, and the pin E, substantially as and for the purpose set forth.

No. 17,881. Extensible Steps for Car Platforms. (*Marche-pieds brisés pour plateformes des wagons*.)

Thomas B. Howe, Scranton, Penn., U. S., 15th October, 1883; 10 years.

Claim.—1st. The combination, with the permanent car steps, of the extensible supplemental step, the supporting side bars and the automatic locking catch E secured to and movable with the movable supplemental step, and having the shoulder adapted to engage with one of the permanent steps, substantially as described. 2nd. The combination, with the permanent car steps having the slots of the extensible supplemental step, the supporting bars, the guide casings for the side bars and the automatic locking catch, substantially as described. 3rd. The combination, with the permanent steps, of the movable supplemental step and its supporting side bars, and the guide plate *r* attached to and moving with the supplemental step, substantially as described. 4th. The combination, with the permanent steps, of the supplemental step, the automatic spring catch, and a guard on the permanent step for preventing the accidental unlocking of the catch, substantially as described.

No. 17,882. Seams for Fine Boots. (*Coutures pour bottes fines*.)

George Valiant, Toronto, Ont., 15th October, 1883; 5 years.

Claim.—1st. A seam formed by turning over the edges to be joined together so as to form a bead with the outer skin exposed and joining together the beads thus formed by stitches passing through the leather below the upper surfaces of the beads and thus forming a double bead on the outside of the boot, with a smooth surface on the inside, substantially as and for the purpose specified. 2nd. A seam formed by first turning over the edges to be joined together so as to form a bead on each edge, secondly, joining the beads together by a row of stitches passing through the leather below the upper surface of the beads, and thirdly, separating the beads by turning them back and stitching them down so as to form a stayed outside seam, substantially as and for the purpose specified.

No. 17,883. Wire Fence. (*Clôture de fil de fer*.)

William H. Rodden, Toronto, Ont., 15th October, 1883; 5 years.

Claim.—1st. A wire fence having the upper ends of the posts to which the wires are attached, bevelled or wedge-shaped, in combination with a hipped capping extending from post to post, and combining the two offices of top rail and weather protector. 2nd. In combination with a wire fence, a hipped capping formed by two boards angularly joined together and provided with a centre rib extending longitudinally within the angle, and angle pieces fitted one at each end of the rib, substantially as and for the purpose specified. 3rd. In a wire fence, an auxiliary post placed a short distance from one of the wire supporting posts, in combination with cross-straps arranged to bind the two posts together and form a ladder sufficiently strong to support a party climbing the fence. 4th. In a wire fence provided with a hipped capping extending from post to post, the combination of a ladder formed by horizontal straps secured to one of the wire supporting posts and to an auxiliary post placed a short distance from it, substantially as and for the purpose specified. 5th. In a wire fence, the combination of cross straps nailed or otherwise fastened upon the posts A, to form a ladder, as described.

No. 17,884. Car Coupling. (*Attelage des wagons*.)

Peter F. Panabaker, Coon Rapids, Iowa, U. S., 15th October, 1883; 5 years.

Claim.—1st. In a car coupling, the described buffer having a horizontal partition, the grooves in the upper compartment near the front end of the same, the guide plates hinged in said grooves, and suitable springs arranged to force the inner ends of said plates together, as set forth. 2nd. The combination with the buffer, of the hinged side guard plates having tapering recesses in their upper and lower sides, the hinged top and bottom guard plates resting in said recesses, and suitable springs arranged to hold or force the inner ends of said plates together, as set forth. 3rd. The combination of the buffer, the hinged guard plates, the fixed guide plates bevelled at their front ends, and springs clamped between said guide plates and the walls of the buffer, and acting against the inner ends of the hinged plates which are thereby forced together, as set forth. 4th. The combination of the buffer, the guide plates secured in the same, and the longitudinally-sliding follower, the forward movement of which is limited by the shoulders formed by the rear or inner ends of the said guide plates, as set forth. 5th. The combination of the buffer, the hinged guard plates, the guide plates, the follower, the lever engaging the rear end of the latter, the tubular casing upon the side of the buffer, the coupling pin arranged in said casing, the spring arranged to force the pin in an inward direction, the horizontal grooved wheel having a notch in its rear side, a chain connecting said wheel with the coupling pin, a lever or pawl adapted to engage the notch in the chain wheel, and having its inner end arranged to rest against the end of the lever operated by the follower, and a spring arranged to force the said pawl into contact with the notch in the chain wheel, as set forth. 6th. A coupling link consisting of a central plate having semi-links secured to opposite sides thereof at right angles to each other, as set forth.

No. 17,885. Rein-Holder. (*Porte-rênes*.)

Abraham Cottrell, Lansing, Mich., U. S., 15th October, 1883; 5 years.

Claim.—1st. A rein-holder formed from a single piece of sheet-metal, and provided with a return bend for securing the same to the vehicle, and with a slot for securing and holding the reins, substantially as and for the purposes set forth. 2nd. A rein-holder consisting of the plate A, provided with the return bend *b*, and spring or yielding wings *g h*, substantially as and for the purposes specified.

No. 17,886. Can Opener. (*Outil pour ouvrir les boîtes métalliques.*)

Joseph Rath, Columbus, Ohio, U.S., 15th October, 1883; 5 years.

Claim.—1st. In a can opener, the combination of the handle with an extensible leg and clamping screw, the end of the rod being pointed and provided with a shoulder. 2nd. In a can opener, the combination of the handle terminating in lugs parallel to the line of the handle and having mounted therein a circular bevelled cutter and friction bowl, the inner lug being flattened out and extended to act as a gauge. 3rd. The combination of the handle A, having socket *a*, provided with clamping screw *a*, extensible square leg B, having cranked end with point *b*, and shoulder *b*, fitting the socket *a*, the lugs C, carrying the rotary concavo-convex cutter D, backed by the friction bowl E, the lug C², carrying the rotary bevelled cutter D², backed by the friction bowl E², and the lug C³, flattened out and extended to act as a gauge and provided with projections C³, forming a guide notch for the leg B, all substantially as described and for the purpose set forth.

No. 17,887. Sleeping Car. (*Wagon-dortoir.*)

John A. Sleicher, Troy, N.Y., U.S., 15th October, 1883; 5 years.

Claim.—1st. In sleeping cars, the combination of the permanent seat frame *a*, provided with the back B, the board or frame G, hinged to the top of the back board and the hinged supporting frame or frames D, serving as a support for the upper berth, substantially as shown and described. 2nd. The combination, with the fixed lower berth *a* and hinged upper berth G, of the frames D D, hinged, substantially as and for the purpose set forth. 3rd. In a car having interchangeable seats and berths, an upper berth frame formed of an offset F, projecting out horizontally over the seat from the back, and a support G, hinged to said offset and folding on the seat when the car is not being used for sleeping purposes, as described. 4th. The hinged flap I, combined with the sliding partition frame H, substantially as and for the purposes set forth. 5th. The combination with the fixed frame *a*, of the frames D D, hinged to opposite ends thereof and adapted to fold within it, whereby they may be used as supports for the upper berths or be folded out of sight, as described. 6th. In a sleeping car, two or more girders or partitions C, extending transversely along the top of the car, entirely across the deck opening therein, in combination with movable partitions H, adapted to meet said girders and form separate, transverse berth sections, substantially as described and for the purposes set forth. 7th. In a sleeping car having interchangeable seats and berths arranged transversely of the car, fixed transverse partitions C, extending up into the deck opening of the car and arranged to meet at their lower edges and support, the upper sides of movable partitions resting upon the seat backs, substantially as described and for the purposes set forth. 8th. In a sleeping car provided with interchangeable seats and berths, an offset from the upper part, of a seat back frame and hinged thereto, in combination with a suitable support for an upper berth, attached to the swinging end or side of said offset, substantially as described and for the purposes set forth. 9th. In a sleeping car, provided with interchangeable seats and berths, an upper berth supported by a seat back G, hinged or otherwise attached to the seat frame, and a seat S, hinged to said back, said back being adapted to swing up into a horizontal plane and carry with it said seat, the latter adapted to rest upon suitable supports in the same horizontal plane with said back, substantially as described and for the purposes set forth.

No. 17,888. Splints for the Forearm. (*Eclisses pour l'avant-bras.*)

Robert Wood, Erin, Ont., (assignee of H. McNaughton,) 15th October, 1883; 5 years.

Claim.—1st. A splint for the forearm, wrist and hand, that the ridge E, will fit between the bones of the forearm and wrist, and the abrupt ridge E² will fit accurately the palm of the hand when applied on the arm, and will have no tendency to get loose and cause pain to the patient, thereby, substantially as shown and described. 2nd. A splint, for the forearm, wrist and hand, constructed with a shell A B C D, as shown and described, the combination of the ridge E, and abrupt ridge E², substantially as specified and described and for the purposes set forth.

No. 17,889. Hay Elevator. (*Élévateur à foin.*)

George W. and George H. St. John, (assignees of De Valois St. John,) Leonardsville, N. Y., U.S., 16th October, 1883; 5 years.

Claim.—1st. The combination, with the carriage D, of the levers F F¹ and springs B B¹, arranged and constructed substantially as and for the purpose shown and described. 2nd. The combination, with a rod A, and a series of hooks B, constructed and supported as described, of the carriage D, levers F F¹, and springs B B¹, arranged and constructed substantially as set forth. 3rd. The combination, with a carriage D, and automatic engaging and disengaging levers F F¹, of the bail K² k, constructed and adapted to operate substantially as described. 4th. The combination with a carriage D, provided with guides G G¹ d² d³, and levers F F¹, of the bail K² k, constructed and adapted to operate substantially as set forth. 5th. The combination, with a carriage D, provided with automatic devices for holding and disengaging a bail K², of the extensions I¹ and loops H¹ L¹, pulleys K L and rope H, substantially as set forth.

No. 17,890. Manufacturing Crystallized Grape Sugar. (*Manufacture du sucre en cristaux, du raisin.*)

William T. Jobb, Buffalo, N. Y., U.S., (assignee of T. Norton, Detroit,) 16th October, 1883; 5 years.

Claim.—1st. The described method of manufacturing crystallized grape sugar, which consists in preparing a solution of grape sugar at a low temperature, then increasing the temperature of the solution until the grape sugar is melted, and then permitting the heated solution to cool and crystallize, substantially as set forth. 2nd. The de-

scribed process of manufacturing crystallized grape sugar, which consists in forming a concentrated solution of grape sugar, then cooling said solution almost to solidifications then melting said solution by heating, and then permitting the heated solution to cool and crystallize, substantially as set forth. 3rd. The described method of manufacturing crystallized grape sugar, which consists in heating a concentrated solution of grape sugar until the sugar is melted, and then permitting the heated solution to cool and crystallize, substantially as set forth.

No. 17,891. Gate Opening Attachment.

(*Appareil à ouvrir les barrières.*)

Jacob H. Moyer, Jordon, Ont., 16th October, 1883; 5 years.

Claim.—The combination of the two pulleys c c, the chain i, the ends of which are secured to the slide F, the stationary bar E, the bar O on the gate M, in connection with the two rods G and H, also the two handles d, all substantially as and for the purpose set forth.

No. 17,892. Bob Sleighs. (*Trainaux-jumaux.*)

Ernest C. Schroeder, Itasca, Ill., U.S., 16th October, 1883; 5 years.

Claim.—1st. The combination, substantially described, of the front bob provided with the flanged bolster-plate, and the rear bob provided with the coupling R, terminating in a cylindrical neck, and a head or shoulder with an intermediate chambered box-coupling D, and the ring collar C², the several parts being connected to allow of the rolling and vertical movements of the bobs, as specified. 2nd. In combination, the flanged bolster plate A a, the ring-collar C, having a forked arm u f, the box-coupling D, having the cross-head g, the tubular extension and the intermediate chamber n n¹, and the coupling R, having the cylindrical neck p, and the head or shoulder o, whereby to form a coupling for the bobs of a sleigh, substantially as described for the purpose specified. 3rd. The coupling-box D, formed with a cross-head p, and provided with a hinged top-section secured to the base section, forming the chamber m m¹, and the tubular extension n n¹, in combination with the coupling R p o, the ring collar C, and the front and rear bobs, all constructed substantially as described for the purpose specified. 4th. In combination, in a bob-sleigh, the cross-head tubular chambered coupling-box D, the bolster plate A, having the depending ring flange a, the ring-collar C, having the forked arm u f, the coupling R, having a cylindrical neck p, the head o, and a flat shank with the rear bob having tongue T, provided with a looped shoe S, and the coupling-bolt t, all constructed and connected substantially as set forth.

No. 17,893. Sewing Machine.

(*Machine à coudre.*)

Lebbeus B. Miller, and Philip Diehl, Elizabeth, N.J., U.S., 16th October, 1883; 5 years.

Claim.—1st. A sewing machine looper having two points, one adapted to take the loop directly from the needle, and the other bent or deflected, substantially as described, to take and twist said loop on the return movement of said looper. 2nd. A sewing machine looper, having two points, one adapted to take the loop directly from the needle, and the other bent or deflected, substantially as described, to take and twist said loop on the return movement of said looper, and provided with actuating mechanism, substantially as described whereby it receives an oscillating movement.

No. 17,894. Sewing Machine.

(*Machine à coudre.*)

Lebbeus B. Miller, and Philip Diehl, Elizabeth, N.J., U.S., 16th October, 1883; 5 years.

Claim.—1st. A frame for supporting and carrying the feed-wheel of a sewing machine, provided with a lug through which it is attached to said machine beneath the bed plate by means of a hinge pivot, and also provided with a set screw passing through the outer end of said lug, and adapted to raise or lower said frame, and support it in the required operative position by pressing against the bed of such machine at a point outside said hinge pivot. 2nd. A shuttle-race for an oscillating shuttle, provided with an elastic side or flange, substantially as and for the purposes described. 3rd. A sewing machine shuttle, constructed in two portions hinged together, one of said portions, having a spring rigidly attached to it at the point opposite the hinge, the free end of which spring is adapted to bear on and press against a projection of the other portion at a point behind said hinge, thereby holding the two portions together with an elastic pressure, substantially as described. 4th. The combination in a sewing machine shuttle, constructed of two portions hinged together, of the said portions, one being provided with a clasp spring adapted to bear on a projection of the other at a point beyond the hinge, and thereby to clasp and hold the two portions together with an elastic pressure upon an adjusting screw tapped into one portion, and adapted to press against a spring or elastic substance attached to or resting in a recess of the other, and thereby relieving to any desired extent the pressure on the thread caused by the clasp spring, substantially as described. 5th. The adjustable slack thread controller described, consisting substantially of the receptacle coil-spring, movable collar, and set screw, all combined and arranged, substantially as and for the purpose set forth. 5th. A presser-bar bracket, comprising a collar adapted to encircle such bar and an arm grooved to receive the presser spring and extended to rest on the cam end of the lifter, substantially as and for the purposes described.

No. 17,895. Paper Bag Holder.

(*Porte-sac à papier.*)

Frank A. Masters, Troy, N. Y., U.S., 16th October, 1883; 5 years.

Claim.—1st. In a stand or holder for paper bags, the combination with the base and back of the shelves so arranged with relation to the back as to leave between said shelves and the back an acute angled space, whereby the uppermost bag is projected forward, as set forth.

2nd. The combination of the wedge-shaped base piece A, having downwardly and rearwardly inclined upper side, the vertical back B, the shelves C, parallel to each other, and to the upper side of the base piece, and the sides D, as and for the purpose set forth.

No. 17,896. Boot. (*Botte*.)

George Valiant, Toronto, Ont., 16th October, 1883; 5 years.

Claim.—1st. In combination with the fly of a boot's upper, a piece of suitable material attached to the upper and having eyelets or button holes stamped out of it, substantially as and for the purpose specified. 2nd. A boot having the edge of the fly of its upper serrated or scalloped, in combination with a piece of material sewn to the said edge, and having eyelets or button holes stamped out of it, substantially as and for the purpose specified.

No. 17,897. Refrigerator. (*Glacière*.)

Jean Baptiste Richer, Montreal, Que., 16th October, 1883; 5 years.

Claim.—1st. The combination of the casing A, forming ice-box D, show case C, and bin B, with pan C', racks P, and G, rack A', frames G', and shelves K K', the whole constructed and arranged, substantially as described. 2nd. The combination of the bin B, having horizontal doors m n, on its upper side, with show case C, and ice-box D, the whole constructed and arranged, substantially as described. 3rd. The combination of a bin B, provided with upper doors m n, arranged as described, with an ice-box placed above it, and connected thereto, substantially as described.

No. 17,898. Harvester Binder.

(*Lièuse de moissonneuse*.)

H. Harris, Son & Co., (Limited), Brantford, Ont., (assignee of Geo. Kettlewell,) 16th October, 1883; 5 years.

Claim.—1st. In a harvester binder, in which the trip-arm which supports the trip-hooks is pivoted on a projection formed on the hub of the needle, the combination of a lug or projection formed on the end of the trip-arm, and extending around the back of the needle behind the connecting pivot, so that the pressure of the grain which causes the downward movement of the trip-hooks, conveys a forward movement to the needle, so as to roll the needle bar sufficiently to throw the tripping mechanism into action, substantially as and for the purpose specified. 2nd. In a harvester binder, in which the trip-arm is pivoted on a projection formed on the hub of the needle, and the said arm is supported when the said needle is home, by a projection on the trip-arm, extending beyond the pivot and coming in contact with the back of the needle, a pin or roller attached to the side of the trip-arm, in combination with the spring gate pivoted to the bracket, and arranged to form a portion of a supporting ledge for the trip-arm, substantially as and for the purpose specified. 3rd. In a harvester binder, in which the trip-arm is supported during the movement of the needle by a pin or roller attached to the trip-arm, and supported by a ledge formed on the bracket, the combination of a spring gate arranged to form a portion of the supporting ledge during the upward movement of the needle, and to open when passed in order to permit the trip-arm to drop down on the return movement of the needle. 4th. In a harvester binder, in which the binding mechanism is put into action by the revolving movement of the needle bar, a needle crank connected in the usual manner to the tripping mechanism, in combination with a compressible pitman arranged to connect the needle crank to the knotted shaft gear, so that the needle crank may move a given distance independently of the knotted gear. 5th. In a harvester binder, in which the trip-hooks are longitudinally adjustable on the trip-arm, the combination of a spring connection between the trip-hooks and arm, substantially as and for the purpose specified.

No. 17,899. Fire-Escape. (*Sauveteur d'incendie*.)

Gilbert D. Gray, Glenwood, Miss., U. S., (assignee of H. D. Cutler,) 16th October, 1883; 5 years.

Claim.—1st. The combination in a fire-escape, of the belt a, plates b, c, hooks d, and the cord g, the cord being strung in the angular course through the hooks, as described. 2nd. A fire-escape, consisting of the belt to be buckled to the body of the person, and the cord strung in an angular course through hooks attached to the belt, the said hooks arranged in the belt for the cord to draw against the shanks of the hooks, substantially as described. 3rd. In a fire-escape, consisting of a belt to be buckled to the body of the person, hooks attached to said belt, and a cord strung through the hooks, the front plate h, and back plate c, combined with the belt and the hooks for connecting and supporting said hooks, substantially as described.

No. 17,900. Oil Lamp. (*Lampe à huile*.)

Samuel Maxim, Wayne, Maine, U. S., 16th October, 1883; 5 years.

Claim.—1st. In an oil lamp, the combination with a collar b, having the inwardly projecting rim c, at the top of the burner socket, flange e, arranged below the top edge of the socket and secured to the collar, to hold a guard-ring in place, as described. 2nd. The socket g, constructed with the flange e, chamber f, and apertures g h, and screw threaded internally to receive the burner, substantially as shown and described. 3rd. The socket c, constructed with flange e, grooved or concealed upper wall apertures at g, a vertical inner wall apertured at h, and screw threaded to receive the burner an outer wall inclined downward and inward in combination with the collar b, fount a, and cement m, substantially as shown and described.

No. 17,901. Fire-Escape. (*Sauveteur d'incendie*.)

Handly B. Kimball, and Cornelius Barrett, Charlotte, Mich., U. S., 16th October, 1883; 5 years.

Claim.—1st. A fire-escape ladder, formed of bars hinged together end to end, and intermediately between the ends also hinged together and provided with rounds, the parts being so conducted and arranged

that the ladder will fold into a small compass and extend itself when required by its own gravity, substantially as described. 2nd. The combination with a fire-escape ladder, constructed, substantially as described, of the additional folding bars C, pivotally secured to the ends of the rounds, and longer than the suspending bars B, and, adapted, when the ladder is extended to form braces to prevent the rounds of the same from coming in contact with the wall of the building, substantially as set forth.

No. 17,902. Steam Plough. (*Charrue à vapeur*.)

Ray Stone, New York, N. Y., U. S., 16th October; 5 years.

Claim.—1st. In a spading machine, a driving shaft o, with wheels p, thereon, a range of spades L L', an independent crank 3, and its disk r, to each spade, and links s, to connect the driving shaft o, with the axes of the independent actuating disks, substantially as set forth. 2nd. The combination with a spade L, and its handle L', of the pair of disks r, with a crank pin 3, between them, an actuating shaft o, with friction wheels p, r, and connecting links s, between the actuating shaft and the axes of the disks, substantially as set forth. 3rd. In a steam plow, the combination with the spade and handle, of a crank 3, to actuate the same, and an extension spring link m, between the handle, and the frame constructed to act as a retractor, and radius bar, for the purposes and as set forth. 4th. The shaft o, and friction pulley p, in combination with the disks r, having crank pins 3, the connecting links s, and spades L L', substantially as set forth. 5th. The combination with the spades and handles, of crank-pin disks in pairs, friction pulleys for rotating the same, links connecting the studs of the disk with the shafts of the pulleys, balls or suspending devices, and a cross-bar or shaft to which the suspending device is attached for determining the downward movement of the spades, substantially as set forth.

No. 17,903. Tinner's Tool. (*Outil d'étameurs*.)

James M. Urie and Richard Goyn, Boulder, Colorado, U. S., 16th October, 1883; 5 years.

Claim.—The expanding device, consisting of the cross-head B and D, having the hinged arms A A and E E, plates or bars F, screw C, constructed and combined to operate, substantially in the manner and for the purpose shown and set forth.

No. 17,904. Car Brake. (*Serre-frein de wagon*.)

William B. Turner and Cornelius Beard, New York, N. Y., U. S., 16th October, 1883; 5 years.

Claim.—1st. A momentum car brake operative with either end of the car forward, adapted to be automatically adjusted from an operative position in one direction to an operative position in the opposite direction, by the rotation of the car axle operating through a device that is effective to produce alternate or reciprocating motion, and connected mechanism, substantially as shown and described, said adjustment being effected at and by each change in the direction of axle rotation, as set forth. 2nd. In a car brake of the character specified, the combination with a device that operates to produce alternate or reciprocating motion, fixed on or operated by the revolution of the car axle, of suitable mechanism, substantially as shown and described, whereby the disengagement of the brakes may be effected by the change in the direction of motion of the car axle, and the brakes be automatically adjusted to operate with either end of the car forward and from either end thereof, all arranged and operated, substantially as set forth. 3rd. In a momentum car brake provided with a draw-bar pitman or its equivalent, wherein the brakes are applied by the compression of the draw-bar operating through a lever or other suitable mechanism, means or mechanism for automatically disengaging the pitman from the said lever, substantially as shown and described, whereby the brakes are rendered temporarily inoperative, as set forth. 4th. In a momentum car brake, wherein the brakes are applied through suitable mechanism by the combined movement of the draw-bar and rotation of the car axle, the combination with the car axle, of a peripheral or eccentrically operating tooth fixed thereto, and of a lever having an attached pivoted tooth, engaging dog, and a pivoted cam rod, substantially as shown and described, whereby the motion of the car axle is transmitted for adjustment and disengagement of the brake, as set forth. 5th. A momentum car brake operative with either end of the car forward, constructed and arranged, substantially as shown and described, containing, in combination, mechanisms or devices for automatically applying the brakes, mechanisms or devices, for automatically disengaging the brakes and mechanisms or devices, for automatically adjusting the brakes to the change in direction of the axle rotation when such operations are effected by the compression or extension of the draw-bar and the rotation of the car axle operating through devices adapted to produce alternate or reciprocating motion, as set forth. 6th. In a momentum car brake, the combination with the car axle B, provided with a rigidly-fixed peripherally or eccentrically-toothed collar B₂, of the rocking adjusting lever O, toothed dog O₁, and cam rod K, all arranged and operating, substantially as shown and for the purpose set forth. 7th. In a momentum car brake, the combination with the operating lever G, adjustable shaft M, and friction pulley M, fixed thereon, of the pitman L, substantially as shown and for the purposes set forth. 8th. In a momentum car brake operative by the inward movement of the draw-bar, the combination with such draw-bar, of a friction device set in motion by the axles for operating the brake, and a tripping device operated at each change of direction of wheel rotation, substantially as described. 9th. In a momentum car brake, wherein the brakes are applied through suitable mechanism by the combined compression of the draw-bar and rotation of the car axle, the combination with the car axle, of a collar having a peripheral tooth fixed thereon, a lever provided with attached pivoted tooth-engaging dog, and a pivoted cam rod, provided with means, substantially as described, for adjusting the position of the connection of the brake lever and draw-bar, as set forth. 10th. In a momentum car brake, the combination with the draw-bar and operating lever, of a draw-bar pitman, constructed with forked rear end and mechanism, substantially as described, for disengaging the pitman and lever, as set forth. 11th. In a car brake automatically operative with either end

of the car forward, the combination with the car axle B, of a collar B', having a peripheral tooth B₃, and means, substantially as described, for operating the tripping device at each change of wheel rotation and only at such change, substantially as described. 12th. In a car brake operative with either end of the car forward, the combination with a car axle, and the brake of a disengaging device, provided with a toothed collar arranged to revolve with the axle, constructed to cause said device to disengage the connection between the draw-bar and brake at each change in direction of wheel rotation, and by such change of rotation, substantially as described. 13th. In a car brake, the combination with the draw-bar and its spring plates, and the draw-bar pitman, of a clevis, substantially as shown and described, arranged on the draw-bar shank and embracing said draw-bar spring plates, whereby said clevis is made operative to move the pitman in both directions of the draw-bar motion, substantially as set forth. 14th. In a car brake, the combination with the draw-bar, of a telescope forked pitman, constructed of two sections, one sliding within the other one of said sections, provided with a slot in which works a pin from the opposite section, and a spring contained within one of said sections and operating on the other, substantially as described. 15th. In a car brake, the combination with an axle friction collar, and a friction wheel, a pitman having one end embracing the shaft of the friction wheel, and the other end pivoted to a toggle lever having a spring fulcrum, and a connection arranged and adapted to actuate a said lever, and a pitman for the purpose of moving and holding the friction wheel in an operative position, substantially as shown and for the purpose described. 16th. In a momentum car brake the combination with the axle collar B', of the friction wheel M, pitman S, having one end connected directly to the axle of the friction wheel, and its other end connected to a toggle lever T, and a connection having one end attached to the end of the lever T, and the other end to a locking device fixed on the forward end of the car, and adapted to be connected with the preceding car, whereby the friction wheel may be brought into operation for applying the brakes and so held on the breaking loose of the car, substantially as shown and described. 17th. In a car brake, the combination with a friction device apparatus of pitman E, toggle lever T, spring V, and case V, of the rod r, locking lever V, and chain W, the said chain W having one end secured to the lever V, and the other end to the next adjacent car, and arranged to retain its hold upon said lever when the friction device is in-operative, and to slip off when said friction device is brought into operation, substantially as described. 18th. In a car brake, the combination with the draw-bar, pitman operating lever and toothed axle collar, of a rocking lever having double toothed dog and a cam rod pivoted thereto, for breaking the connection between said pitman and operating lever, as set forth.

No. 17,905. Railway Switch.

(*Aiguille de railroute.*)

David H. Hoult, Lansdale, Penn., U. S., 16th October, 1883; 5 years.

Claim.—1st. The combination of a siding having one continuous rail and one broken rail with flexible rail D, locking lever M, a switch lever I, connecting devices to shift said rail D, and a spring to allow of its being moved to complete the continuity of the rails without moving lever I, substantially as and for the purpose specified. 2nd. A main railway track combined with a siding, a spring switch, a rail D, to break the continuity of the rail of said siding at a distance from the ordinary switch, sufficient to arrest the car and prevent a collision and a lock to hold the spring switch rail in opposition to the spring of the said switch when forced out by a passing car so as to make a continuous rail, substantially as and for the purpose specified.

No. 17,906. Hand Corn Planter.

(*Semoir de blé d'inde à la main.*)

Samuel M. Maomber, Grand Isle, Vt., U. S., 16th October, 1883; 5 years.

Claim.—1st. In a hand corn-planter, the combination with the front plate A, having seed box R, of the slide B, provided with the spring-pressed out-off O, adapted to move outwardly as and for the purpose set forth. 2nd. In a hand corn-planter, the combination with the front plate A, having seed box R, of the slide B, formed with a recess J, and provided with a spring-pressed out-off O, the latter extending through an aperture P in the slide, and adapted to agitate the seed in the seed box, and cause the same to pass freely into the recess S, as and for the purpose set forth. 3rd. In a hand corn-planter, the combination with the slide B, of the front plate A, formed with flanges V, and a spring jaw Z, secured at its upper ends to said flanges, as and for the purpose set forth. 4th. In a hand corn-planter, the combination with the slide B, of the front plate A, formed with inclined flanges, provided with recesses W, a cross-bar Y, secured in said recesses, and a spring jaw fastened to the cross-bar, as and for the purposes set forth. 5th. In a hand corn-planter, the combination with the front plate A, having seed box R, of the slide B, provided with the spring-pressed out-off O, and the adjustable gauge K, as and for the purposes set forth. 6th. In a hand corn-planter, the combination with the plate A, and slotted slide B, of the stop C, having a part overlapping the front side of the slide B, the screw E passing said plate, and the nut F, as and for the purposes set forth. 7th. In a hand corn-planter, the combination with the slide B, having recesses J, of the recessed plate A, having flanges V, recessed at W, and inclined on their forward edges, as and for the purpose set forth.

No. 17,907. Sewing Machine. (*Machine à coudre.*)

Alfred A. Fisher, San Francisco, Cal., U. S., 16th October, 1883; 5 years.

Claim.—1st. In combination with a sewing machine, a tucking attachment consisting of the base plate C, and the guard J, adjustable lengthwise, and having a cross head j, over which the goods are folded to form the required width of tuck, substantially as described. 2nd. In a tucking attachment for sewing machines, the base plate C, in combination with the guard J, with its cross head j, and the means for said guard lengthwise, consisting of the pins k and l, through which said pins fit, substantially as and for the

purpose described. 3rd. In a tucking attachment for sewing machines, the base plate C, in combination with the guard J, and the means for holding said guard straight or swinging it out of the way, consisting of the bearing plate m, secured to the outer end of said guard and having a notched end k', the pivot pin k, upon plate I, and the sliding clutch plate n, substantially as described. 4th. In a tucking attachment for sewing machines, the base plate C, transverse inclined pieces D and E, between the adjacent sides of which a slot or groove c is formed in which the measuring tuck travels, in combination with the adjustable and swinging guard J, with its cross head j, around which the goods are folded, substantially as and for the purpose described. 5th. In a tucking attachment for sewing machines, the base plate C, having the transverse inclined pieces D and E, between which is formed a slot or groove c, and having a cross end c', and the stationary plate C₁, in the slotted end of which the cross end c', of plate C, fits and is moved to adjust plate C, lengthwise by means of screw rod c₂, and the pinions i and j, in combination with the inclined bearing plate I, and the swinging and adjustable guard J, with its cross head j, substantially as and for the purpose described. 6th. In a tucking attachment for sewing machines, having a tuck guiding slot or groove c, the combination of the swinging guard J, with its cross head j, and the underlying adjustable tuck securing plate K, with its lip or flanges g, fitting said slot, substantially as and for the purpose described. 7th. In a tucking attachment for sewing machines, having a tuck guiding slot or groove c, the combination of the swinging guard J, with its cross head j, said guard being made in two sections having an adjustable joint V, and the underlying tuck securing plate K, with its lip or flange g, fitting said slot, substantially as and for the said purpose described. 8th. In a tucking attachment for sewing machines, the base plate C, having a transverse inclined piece D, in combination with the transverse inclined piece E, said piece being adapted to move to or from piece D, by means of its slot fitting over screw b, and the adjusting screw b', passing through said pieces D and E, substantially as and for the purpose described. 9th. In a tucking attachment for sewing machines, the combination of the inclined pieces D and E, and the adjustable inclined tuck supporting piece F, between them, substantially as and for the purpose described. 10th. In a tucking attachment for sewing machines, the transverse inclined piece D, in combination with the transverse piece E, between which and piece D, a slot or groove c is formed, and the curved guiding plate or piece d near the lower end of piece E within slot c, substantially as and for the purpose described. 11th. In a tucking attachment for sewing machines, the transverse inclined pieces D and E, and the adjustable and swinging guard J, with its cross head j, in combination with the adjustable and swinging guard H, substantially as and for the purpose described. 12th. In a tucking attachment for sewing machines, having transverse inclined pieces D and E, the adjustable and swinging under guard J, with its cross head j, in combination with the upper guard H, having a slot d, adapted to fit over a screw c, said guard being hinged to the piece E, by the hinge G, and adapted to slide in said hinge whereby it may be folded over upon and adjusted against the cross head j, substantially as and for the purpose described. 13th. In a tucking attachment for sewing machines, the upper guard H, with its upturned cross end h, having vertical slots h', in combination with the angled guide plate H₁, rendered vertically adjustable by means of the screws h₂, passing into it through said slots, substantially as and for the purpose described. 14th. In a tucking attachment for sewing machines, the sliding upper guard H, in combination with the guiding screw e, and the adjustable stop plate e', substantially as and for the purpose described. 15th. In a tucking attachment for sewing machine, the upper guard H, in combination with the upper and lower sliding plate Z and Z₁, substantially as and for the purpose described. 16th. The improvement in tucking goods, consists in feeding them to a tucking device, in an endless band whereby an uninterrupted and continuous tuck may be made, substantially as described. 17th. In combination with a sewing machine and a tucking device, a vertically and laterally adjustable directing board S, whereby the goods may be fed to the tucker with precision, substantially as described. 18th. In combination with a sewing machine and a tucking device, a frame consisting of the adjustable directing board S, and roller S₁, for feeding the goods in an endless band to the tucker, substantially as described. 19th. In combination with a sewing machine and a tucking device, the inclined directing board S, having a rod r₁, journaled in the tops of vertically adjustable rods R₁, and supported by the adjustable brace T, substantially as described. 20th. In combination with a sewing machine and the tucking device described, the table P, with its roller Q, socket bearings R, rods R₁, the inclined directing board S, with its rods r₁, adjustable brace T, and roller S₁, substantially as and for the purpose described. 21st. In combination with a sewing machine and tucker having transverse inclined pieces D and E, forming between them a slot c, in which and over which the goods are directed to the needle, the inclined directing board S, with its roller S₁, and rod r₁, and adjustable brace T, and the table P, with its roller Q, bearings R, and vertically adjustable rods R₁, substantially as and for the purpose described. 22nd. In combination with a sewing machine, the attachment consisting of the plate J₁, with its shoulders n, side flange guides n₂, wide end r₂, and slots q₂ r₂, and the plate L₁, with its side flanges n₂ downturned and h₂, hole m₁, and slot m₁, when arranged and used, substantially as and for the purpose described. 23rd. In combination with a sewing machine having an adjustable presser foot and fixed arm and an oscillating or vibrating needle arm, the strip A₁, pivoted to the presser arm as shown, one end fitting under a screw or projection a₁, on the presser shaft and its other end provided with points B₃ and C₃, having screws b₃ and c₃, fitting under the presser arm and needle arm respectively, substantially as and for the uses and purposes described. 24th. In connection with a sewing machine, having an adjustable presser foot and fixed arm and an oscillating or vibrating needle arm, the combination of the strip A₁, with its arm as shown, whereby its function is that of a lever acting upon the presser foot at each stroke of the needle arm and the attachment consisting of the plate J₁, with its guides and slots, as shown, and its downturned end h₂ when arranged, substantially as and for the uses and purposes described. 25th. In combination with a sewing machine, the combined braiding and felling device consisting of the plate J₁, with its guides, slots and slotted end flange o₁, the plate L₁,

with its down turned end *b2*, and side flange guide *y*, and the plate *P1*, with its hole *g1*, slot *z1*, and extended spring head or end *n1*, having a turned under flange forming a groove *o2*, as shown, when arranged and used, substantially as and for the purpose described.

No. 17,908. Fire Escape. (*Sauveleur d'incendie.*)

James S. Parmenter, Woodstock, Ont., 17th October, 1883; 5 years.

Claim.—1st. As an improved fire escape, a truck provided with wheels or rollers resting upon and supported by a rail or rails attached to or near the roof of the building, in combination with a cage or platform carried by chains or their equivalent passing over rollers journaled in the truck and around a drum similarly journaled but provided with braking mechanism for chucking its revolution in order to prevent the cage descending too quickly. 2nd. As an improved fire escape, a cage or platform suspended by chains or their equivalent from a truck carried on a rail attached to or near the roof of the building, a drum or roller journaled in the truck and upon which the suspending chains are wound in combination with a brake, the application of which to the winding drum is regulated by a governor operated by the revolution of the drum, substantially as and for the purpose specified. 3rd. As an improved fire escape, a cage or platform suspended by chains or their equivalent from a truck carried on a rail attached to or near the roof of the building, a drum or roller journaled in the truck and upon which the winding chains are wound, in combination with a drum actuated by a clock spring and connected to the winding drum, substantially as and for the purpose specified. 4th. In combination with mechanism connected to the drum upon which the ropes carrying the cage are wound, a bell tongue or lever arranged to strike a bell as the said drum revolves, substantially as and for the purpose specified.

No. 17,909. Washing Machine.

(*Laveuse mécanique.*)

James W. Rhoades, Churubusco, Ind., U. S., 17th October, 1883; 5 years.

Claim.—1st. In a washing machine, the combination of a plunger and its shaft, a horizontally adjustable operating-lever therefor, guide rods for the plunger shaft to move in and bolts for connecting said rods to a standard and a support for the several parts, substantially as set forth. 2nd. In a washing-machine, the combination of a plunger and its shaft and lever for operating the shaft longitudinally, adjustable guide rods for the plunger shaft to move in, a supporting arm for the guide-rods and clips for permitting the adjustment of the guide-rods and clamping them to said arm, substantially as and for the purposes set forth. 3rd. In a washing-machine, the combination of a plunger and its shaft and lever for operating the shaft longitudinally, adjustable guide-rods for the shaft to move in, a supporting arm recessed for the reception of the guide rods and clips having one end secured to the arm, and the other end screw-threaded for a nut to clamp the rods to the arm, substantially as and for the purposes set forth. 4th. In a washing-machine, the combination of a plunger and its shaft, a hinged arm with which the plunger is connected, a standard to which said arm is hinged and a pawl pivoted to said standard and adapted to engage with the end of the arm to hold it to the standard, substantially as set forth. 5th. In a washing-machine, the combination of a plunger and its shaft, a hinged arm with which the plunger is connected, provided with a flange adapted to engage with the standard to which the arm is hinged, a standard to which said arm is hinged, and a pawl pivoted to said standard and adapted to engage with the end of the arm and to afford a rest for the arm when thrown back, substantially as set forth. 6th. In a washing-machine, the combination of a plunger and its shaft, a lever for operating the plunger, a stirrup pendent from the operating lever and hinged thereto, a ratchet connected to the plunger shaft within said stirrup and a pawl hinged to the operating lever and adapted to engage with the ratchet, whereby the plunger-shaft is raised and lowered and rotated, substantially as set forth. 7th. In a washing-machine, a frame, a laterally-adjustable plunger connected thereto by fastening and a plate secured between the frame and plunger and provided with flanges bearing against the plunger to prevent it from moving sidewise, substantially as set forth. 8th. In a washing machine, the combination of a two part plunger, a cross-bar for connecting the two parts having slotted ends and serrated edges pins or lugs connected with the plunger and adapted to engage with the serrations of the cross-bar, a nut and bolt for clamping the cross-bar to the plunger and an operating shaft connected to the cross-bar, substantially as set forth. 9th. In a washing-machine, the combination of a two part plunger, a cross-bar connecting the two parts having slotted ends and serrated edges, flanged plates fitting to the apices of the apices of the two-part plunger and provided with cross flanges or shoulders to form a seat for the cross-bar and with pins or lugs to engage with the serrations of the bar, a nut and bolt for clamping the cross-bar, plunger and flanged plate together and an operating shaft connected with the cross-bar, substantially as set forth. 10th. The plunger *I*, divided into several tapering chambers by partitions *P* and *Q*, the partition *Q*, also forming a central air cell tapering from top to bottom, as shown, and communicating with the interior chambers, and an air-inlet at the top of the plunger, substantially as and for the purposes set forth. 11th. In a washing-machine, a plunger divided into a central air-cell and a series of air-chambers by partitions *P* and *Q*, in combination with an air-inlet at the top formed of a removable funnel-shaped cup having inclined edges and a valve, substantially as and for the purposes specified. 12th. The tub supporting frame composed of the bars *C* *D*, diagonal bars *E*, and legs *F*, in combination with the flanges slides *G*, bolts *H*, and thumb nuts *I*, adapted to operate as and for the purposes set forth.

No. 17,910. Washing Machine.

(*Laveuse mécanique.*)

John C. Wilson, Washington, Penn., U. S., 17th October, 1883; 5 years.

Claim.—1st. The combination, with the stationary rubber *c*, arranged in the box, of the suspended swinging box *t*, provided with a series of concave racks *k*, at its ends, and slats *l*, between them,

substantially as described and for the purpose set forth. 2nd. The combination, with the double *A*, frame *a*, board *b*, frame *d*, and suspending-rods *h*, of the right angular sheet-metal pieces *m*, having leaves *n*, and swinging box *t*, having concave rack at its ends, with slats *l* between them substantially as described and for the purpose set forth. 3rd. The combination with the frame *d*, carrying the wing-rolls *e* and hinged leaf supports and guides *a*, of the right angular pieces *m*, having leaves *n*, swinging suspended box *t*, whereby the leaves *n*, perform the double function of guiding the clothes to be wrung and preventing the splashing of the ends, substantially as described. 4th. The stationary rubber *c*, consisting of the vertical end pieces having hooks *c1*, pivoted thereto, and side pieces *c2* pivoted to the end pieces and provided with the eyes *c3*, and parallel slats *c2*, and bottom slats *c3*, pivoted in the side pieces *c1*, substantially as described and for the purposes set forth.

No. 17,911. Method and Apparatus for Signaling of Vessels. (*Manière de signaler les vaisseaux et appareil pour cet objet.*)

Merritt White, North Adams, Mass., U. S., 15th October, 1883; 5 years.

Claim.—1st. The system of signalling for vessels, which consists in the display of colored signals by night or day to indicate the intended course of the signaling vessel, which consists in the employment of a central and two lateral signals arranged above the wheel-house upon a platform or base adapted to be operated from the interior of the wheel-house, and which platform or base when stationary presents in a front view only one of the signals, but when turned or viewed at an angle to the front presents two of the signals, substantially as described. 2nd. The apparatus for signaling, consisting of three lights of different colors, said vane having a front, rear, and two side wings, with the lights arranged respectively, one at the forward end of the front wing and one on each side of the rear wing upon a platform or base pivoted so as to be turned to present the two desired colored signals by night or day, substantially as described. 3rd. A signalling apparatus, consisting of three lights of different colors, and a vane of three different colors, said vane having a front, rear and two side wings, with the lights arranged respectively, one at the forward end of the front wing and one on each side of the rear wing, upon a platform or base arranged above the wheel-house and adapted to be operated by a hand wheel or crank within the wheel-house, substantially as described.

No. 17,912. Car-Coupler. (*Attelage des wagons.*)

Thomas A. Cullinan and Augustus W. Baldwin, Junction City, Kansas, U. S., 16th October, 1883; 5 years.

Claim.—1st. A car coupling constructed, substantially as shown and described, and consisting of the draw-head *C*, the hinged coupling pin *D*, the cross pin *E*, having crank arm *F*, the chain *G*, the rod *I*, having arms *H* *K*, the guard *P*, and the cap-plate *R*, as set forth. 2nd. In a car-coupling the combination with the draw-head *C*, the hinged coupling-pin *D*, and the hinged cross-pin *E*, having crank arm *F*, of the chain *G*, and rod *I*, having arms *H* *K*, substantially as shown and described, whereby the coupling-pin can be readily raised and can be locked in a raised position, as set forth. 3rd. In a car-coupling, the combination, with the draw-head *C*, the hinged coupling-pin *D*, and the hinged cross-pin *E*, of the guard *P*, and its bolt *O*, substantially as shown and described, whereby the said cross-pin will be protected from the entering link, as set forth.

No. 17,913. Time Lock and Mode of Mounting the Same. (*Serrure chronométrique et manière de la monter.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 17th October, 1883; 15 years.

Claim.—The combination with the time movement, or the time movement and other parts of a chronometric lock, a yielding or flexible support therefor, and a lock bolt or dog mounted outside the flexibly supported parts of such lock, and held in the locking position by suitable means also located outside such parts of the lock, substantially as and for the purpose set forth, whereby the clock mechanism will have freedom of motion relatively to the door or wall of the safe without disturbing the action of the lock-bolt, and will itself be protected from injury under the force of an explosion directed against the exterior of the structure.

No. 17,914. Envelope. (*Envelope.*)

Joseph F. McFarlan, Middleborough, Mass., U. S., 24th October, 1882; 5 years.

Claim.—1st. The envelope *A*, provided with the thread *B*, arranged in the form of a loop, one section of the loop passing into the end of the envelope at *a*, and out at *f*, and the other down the inside, as shown at *a*, both sections terminating in the knot *x*, substantially as described. 2nd. The envelope *A*, provided with the thread *B*, the upper end *l* of the thread being centered to the upper edge of the flap *C*, and the lower end *l*, to the interior of the envelope, substantially as specified. 3rd. In an envelope, the thread *B* arranged in the form of a double loop, the sections of the loop passing through the end of the envelope at *a*, and terminating in the knot *t*, substantially as shown and described.

No. 17,915. Machine for Securing Buttons to Material. (*Machine à poser les boutons.*)

Joseph Mattison, Lynn, Mass., U. S., 17th October, 1883; 5 years.

Claim.—1st. In a machine for attaching buttons, the combination of button feeding mechanism and mechanism for first drawing a primary loop of thread through the material, and the eye of a button, secondly, drawing a secondary loop through the material and through the primary loop outside the eye of the button, thirdly, throwing the secondary loop over the head of the button, and finally forming said

loops into a square knot, as set forth. 2nd. In a machine for attaching buttons, the combination of loop forming mechanisms, button-feeding mechanism, whereby a button is presented to the needle, of loop forming mechanism, means for imparting to said needle the primary and secondary feed movements described, whereby first, the primary and secondary loops are drawn respectively through and outside of the eye of the button, and secondly, the material with the partially attached button is advanced and devices for spreading and depressing the secondary loop after the material is advanced, to cause said loop to enclose the button and hold it until tightened by the subsequent action of the loop forming mechanism, as set forth. 3rd. In a machine for attaching buttons, the combination of button-feeding mechanism, a longitudinally slotted presser foot, a loop forming mechanism, means for imparting to the needle and cast-off of the loop forming mechanism, the primary and secondary lateral movements described, means substantially as described, for vertically reciprocating the cast-off at different points in the lateral movement and loop spreading devices, all arranged and operated, substantially as described. 4th. The presser foot, composed of two connected arms separated by a longitudinal slot, the sides of which are adapted to support a button, and having an enlarge near opening to permit the passage of an attached button, as set forth. 5th. The combination with the button feeding and loop forming mechanism, of the loop spreaders and mechanism for inserting said spreaders into the secondary loop and depressing and separating them to depress and spread said loop, as set forth. 6th. The combination of the rod *b*, having an enlargement or collar mechanism for oscillating the same, the spreaders pivoted to said collar and pressed inwardly by springs, the wedge *u*, journalled on the rod and drawn backwardly by a spring *v*, the shoulders *x* *h*, arranged as described, whereby the spreaders are moved forward and in advance of the wedge, and the latter is subsequently moved with spreaders *a*, dog *b*₁, to lock the wedge, and an arm *d*₂, to disengage the dog from the wedge when the spreaders move backwardly, as set forth. 7th. The combination, with the loop spreaders, of the auxiliary loop holding arm and mechanism for raising and lowering the same, as set forth. 8th. The raceway pivoted to a longitudinally movable support *i*, combined with means for oscillating the raceway, and moving it longitudinally, as set forth. 9th. The combination of the raceway, the section *h*₂, supporting the raceway, the longitudinally movable section *l*, having a pivoted connection with the section *h*₂, mechanism, substantially as described, for reciprocating the section *h*₂, mechanism, substantially as described for reciprocating the section *l*, and the parts supported thereby, and the incline *e*₂, and spring *m*₂, whereby the raceway is oscillated when moved longitudinally, as set forth. 10th. The combination, with the needle and cast off bars of the carrier *H*, guiding said bars and horizontally movable in fixed guides, means for giving said carrier first a short and then a longer reciprocating movement, and mechanism, substantially as described, for reciprocating the needle bar, vertically devices on the needle and cast-off bars causing the operation of the latter by the vertical movements of the needle bar, and an independent device operated by the longer lateral movement of the needle bar to depress the cast off bar, as set forth. 11th. The combination of the carrier *H*, reciprocated horizontally as described, the needle and cast off bars guided and moved laterly by the carrier, the oscillating lever *j* having a slot *L*, a slide *M*, in said slot engaged with a stud on the needle bar, the projections *h* *A*, on the cast off bar and the interposed stud on the needle-bar, whereby the cast off is operated during the vertical movements of the needle bar and the lever *3*, pivoted to a fixed support and operated by the longer lateral movement of the needle bar to depress the cast off, as set forth. 12th. The raceway, formed to permit the removal of the buttons from its end and adapted to be moved longitudinally and laterally as described, combined with the spring *v*, projecting partly across the end of the raceway and adapted to hold the lower button with a yielding pressure, as set forth. 13th. The combination with the loop forming mechanism of the movable raceway, adapted to present the eye of the last button it contains to the needle and to hold the button while a loop is being drawn through the eye thereof by the needle and mechanism for moving the raceway backwardly while the said loop is held by the needle, thereby withdrawing the button, from the raceway, as set forth. 14th. In a machine for securing buttons, the combination with the loop forming and feeding mechanism of the narrow elongated work, supporting arm adapted to permit the free lateral and longitudinal movement of a boot or shoe upper, and the presser foot having a slot adapted to support a button while it is being attached, and an enlarged rear opening to permit the passage of the attached buttons, as set forth. 15th. The combination with the laterally movable needle, of the cams *e* *f*, and intermediate devices for moving the needle laterally, said cam being adjustable so as to regulate the feed movements of the needle, as set forth.

No. 17,916. Furnace Mouth.

(*Embrasure de fourneau.*)

Timothy O'Brien, Boston, Mass., U. S., 17th October, 1883: 5 years.

Claim.—1st. In a furnace mouth, substantially as described, the guards or jamps *G*, provided with the perforations *n*, in combination with the plate *B* provided with the perforations *f*, constructed, combined and arranged to operate, substantially as set forth. 2nd. In a furnace mouth, substantially such as described, a guard for protecting the jamb so constructed and arranged as to form a flue for conducting a current of air around said jamb on its outer side, and discharging the same into a corner of the furnace, to produce more perfect combustion of the fuel in that locality, substantially as specified. 3rd. The guard *G*, consisting of the body *a*, piece *t*, and flange *l*, for protecting the jamb of a furnace, substantially as set forth.

No. 17,917. Hoop Cutter.

(*Machine à couper les cercles.*)

Thomas Graydon and John G. Joppling, Courtland, Ont., 17th October, 1883: 15 years.

Claim.—1st. A machine for cutting wooden barrel hoops, made substantially as shown and described, and consisting of a platform carrying knives and adapted to revolve under one or more devices

for holding planks edgewise, as set forth. 2nd. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of devices for holding planks edgewise, and of devices for feeding the planks automatically every time a strip or hoop has been cut from the lower edge of the same, substantially as shown and described, and for the purpose set forth. 3rd. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of devices for holding planks and devices for automatically tilting the plank holding devices at the time a strip or hoop is to be cut from the plank by the knife on the revolving platform, substantially as shown and described, and for the purpose set forth. 4th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of devices for holding planks and devices for automatically tilting the plank-holders before the cut is made and automatically feeding the planks after a strip or hoop has been cut from the same, substantially as shown and described, and for the purpose set forth. 5th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of a device for holding planks and of devices to be operated by hand for feeding the plank after or before a strip or hoop has been cut from the plank, substantially as shown and for the purpose set forth. 6th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform provided with knives for cutting strips or hoops from the edge of a plank and with knives for bevelling the ends of the edge of plank of a device for holding a plank, substantially as shown and described, and for the purpose set forth. 7th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of a frame or box for holding a plank, a board held in the said box and a spring for pressing the board against the planks and thus holding the same in the box, substantially as shown and described, and for the purpose set forth. 8th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform, carrying knives, of a frame or box for holding a plank, a spring-bar provided at the ends with pintles, and of a cam lever for acting on the spring-bar to press the pintles inward or outward, as may be desired, substantially as shown and described, which pintles serve to hold the plank for the time being after the same has been placed in the plank or stockholder. 9th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of the box or frame *E*, the board *G*₁, the spring *G*₂, and cams for pressing the board *G*₁ against the side of the box to which the spring is fastened and thereby compressing the spring and releasing the plank held in the frame and box, substantially as shown and described, and for the purposes set forth. 10th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of the box or frame *E*, the board *G*₁, the spring *G*₂, cams for pressing the board *G*₁ against the side of the box to which the spring is fastened and thereby compressing the spring and releasing the plank held in the frame or box, and of devices for automatically operating the said cams shown, the revolving platform carrying the knives, substantially as shown and described, and for the purpose set forth. 11th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of the frame or box *E*, the board *G*₁, the spring *G*₂, the cam shaft *I*, the bar *J*, connecting them, the rod *O*, the rocking shaft *N*, provided with arms *N* *M*₁, and of the studs *M*, in the revolving platform, substantially as shown and described, and for the purpose set forth. 12th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of the frame or box *E*, the board *G*₁, the spring *G*₂, the cam shafts *I*, the bar *J*, connecting them, the studs *M*, on the revolving platform, and devices for operating the bar *J*, from the studs *M*, substantially as shown and described, and for the purpose set forth. 13th. In a machine for cutting wooden barrel hoops, the combination with the revolving platform carrying knives, of the box or frame *E*, the board *G*₁, the spring *G*₂, the cam shafts *I*, the bar *J*, the rod *O*, the rocking shaft *N*, provided with an arm *N*₁, the shaft *P* provided with a lever *P*₂, and with an arm *Q*, substantially as shown and described, and for the purpose set forth. 14th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of pivoted boxes or frames for holding the planks or stock, substantially as shown and described, and for the purpose set forth. 15th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform carrying knives, of pivoted boxes or frames for holding the stock or planks, which boxes are pivoted at one end to vertically adjustable frames, substantially as shown and described, and for the purpose set forth. 16th. In a machine for cutting wooden barrel hoops, the combination with a revolving platform provided with knives, and with a circular track having raised parts, of pivoted boxes or frames for receiving and holding the stock or planks, and of arms secured to the said boxes or frames and provided with rollers running on the track of the revolving platform, substantially as shown and described, and for the purpose set forth.

No. 17,918. Buggy Tops. (*Soufflets de voiture.*)

Robert McLaughlin, Oshawa, Ont., 17th October, 1883: 5 years.

Claim.—1st. In a buggy-top, provided with a rod extending across the back of the buggy and connecting the bottom end of the back joint on one side of the top, with the bottom end of the back joint on the opposite side, in combination with a lever so attached that both back joints may be simultaneously broken and top thrown back by the occupant of the buggy without moving off his seat. 2nd. In a buggy-top, the combination of a rod extending across the back of the buggy, and connecting the bottom end of the back joint on one side of the top with the bottom end of the back joint on the opposite side, the said rod being journalled in sockets formed upon, or attached to the side rails and provided with a lever extending into the buggy at about right angles to the rod, or on back hinge and within easy reach of the occupant of the buggy, substantially as and for the purpose specified. 3rd. In a buggy-top, a socket or sleeve-piece *B*, set into a hole in the back end of each side rail and forming journals for the rod *D*, in combination with a plate *C*, extending from the inner end of each socket *A*, and provided with buttons for fastening the bottom of the back curtain and quarters, substantially as specified. 4th. In a buggy-top, the plates *C* extending inwardly from each side rail, their inner ends being fastened to the seat of the journals *G*, for the purpose of forming a rigid connection for the bottom of the back cur-

tain and quarters, in combination, with a rod D held in the journals B and G, and connecting the bottom ends of the two back joints E, the said rod being provided with a lever, substantially as and for the purpose specified. 5th. In a buggy-top, a spring H, fixed to the back or side rail in such a position that the back bow of the top will rest upon it when the top is thrown back as shown in Fig. 1.

No. 17,919. Feeding Apparatus for Threshing Machine. (*Appareil d'alimentation pour machine à battre.*)

William H. Lightcap, Hazel Green, Wis., U. S., 17th October, 1883; 5 years.

Claim.—1st. The combination with a thrashing machine, provided with wing A A', of the concave cylindrical casing B armed upon its interior with teeth b and arranged at an incline between said wings, supports or bearings C C' C₂ C₃ and suitable means, substantially as described, for revolving said casing, as and for the purpose set forth. 2nd. The combination with a thrashing machine, of the concave cylindrical casing B armed with teeth b, feed rollers D E, provided with grooves d, d', and mounted at the receiving end of said casing, and suitable means, substantially as described for operating said roller and casing conjointly, as set forth. 3rd. In a thrashing machine, the combination of the distributor B, feed rollers D E, band-cutting knife F, and suitable means, substantially as described and shown, for operating the distributor and feed rollers conjointly from the driving shaft of the thrasher cylinder, as and for the purposes, set forth.

No. 17,920. Ammonia Engine. (*Machine à ammoniaque.*)

George Sweaner and Edward W. Beuthner, Montreal, Que., 18th October, 1883; 5 years.

Claim.—1st. The method of liquefying gas or vapour generated from ammonia or other liquid of low-boiling point and used as the motive force in an engine by bringing it into contact with a column of ammonia, or like fluid, drawn from a separate reservoir into which the liquefied gas falls, all as set forth. 2nd. The combination with an engine of any type in which liquid ammonia is substituted for water, of a reservoir or absorber in which the liquefied gas from exhaust is received and from which the boiler supply is replenished, all as set forth. 3rd. In an engine, the motor-fluid of which is ammoniacal gas, the stuffing-boxes of piston and pump rods, etc., connected with exhaust, all as set forth and for the purposes described. 4th. In an engine, the motor-fluid of which is ammoniacal gas, the safety-valve mechanism connected with main exhaust so that any extra pressure of gas will be drawn off into such exhaust, all as set forth.

No. 17,921. Boots or Shoes. (*Chaussures.*)

George H. Clark and Charles A. Shaw, Boston, Mass., U. S., 18th October, 1883; 5 years.

Claim.—1st. As an improved article of manufacture, a boot or shoe provided with a gore c, inserted into that part of the edge of the upper which is to fit and cover the inside hollow or shank of the foot, whereby the said upper is permanently shaped to conform to the hollow of the inner side of the foot, as shown and described. 2nd. In a boot or shoe, the combination of the quarter-piece which covers the inner side of the foot with a piece of leather c, uniting to the said quarter-piece to form a support or brace the quarter above the shank of the sole of the said boot or shoe, substantially as described.

No. 17,922. Hoe Cultivator. (*Cultivateur à hoe.*)

John S. Getchell and George N. Getchell, Houlton, Maine, U. S., 18th October, 1883; 5 years.

Claim.—1st. The combination with the beam having the longitudinal groove in its under side, of the longitudinally slotted plate secured to the beam by a nut and bolt and having a hooked end working in said slot, as set forth. 2nd. The combination with the central beam and rear transverse beam, of the standards having a lug on the front edge and a top plate rearwardly, extending platforms or strips having a clamping device, clamping plates with bolts and nuts, the hoes pivoted to the standards and provided with rear upwardly extended rods and forward convergent brace-rods, as set forth. 3rd. The combination, with the cross beam B, of the standards having a top plate, and the hoes pivoted at their lower ends, the rearwardly extending platforms secured and clamped between said top plate and the underside of the beams, vertically adjustable rods U U', top clamping plates J J and securing nuts and bolts, as set forth. 4th. The combination with the central longitudinal beam, having a groove in its under surface and provided with a longitudinally adjustable plate, having a hooked end moving therein, of the rear cross-beam, the standards adjustable on the latter by means of clamping plates, and provided with headed lugs on their front edges and the brace-rods secured thereon and extending up over the end of the plate, on the central beam, as set forth.

No. 17,923. Tide Motor for Utilizing the Ebb and Flow of the Tide. (*Moteur pour utiliser la marée.*)

Newton L. Forster, Trafalgar, Ont., 18th October, 1883; 5 years.

Claim.—A weighted float A of sufficient dimensions to sustain by its floating capabilities the weight of its geared spindle, in combination with mechanism arranged to impart movement to the mechanism designed to store the power created by the upward and downward movement of the weighted float when moved by the ebb and flow of the tide, substantially as and for the purpose specified.

No. 17,924. Chimney Top. (*Cape de cheminée.*)

Peter B. Speer, Muscatine, Iowa, U. S., 18th October, 1883; 5 years.

Claim.—The combination with the pipe A, having the conic cap or deflector D, closed at the top, and a draft-opening b, immediately be-

low the cap, of the drum B extended above the cap D and having the enlarged portions c extended below the opening b, and having above the drum the conic deflector C closed at the top and the draft-opening d, immediately below the deflector, C, substantially as and for the purposes described.

No. 17,925. Fluid Meter. (*Hydromètre.*)

Frederick G. Hesse, Oakland, Cal., U. S., 18th October, 1883; 5 years.

Claim.—1st. In a fluid meter, a revolving wheel D provided with a device as d', whereby the direct course of a portion of the water in its passage through the meter is intermittently interrupted, substantially as described. 2nd. A fluid meter provided with chambers C C' and cylinder or vessel E, the chambers C C' being placed in communication with each other by a passage as V₁, while the vessel or cylinder E is made to communicate with chambers C C' by passages as m m' m₂, substantially as and for the purpose described. 3rd. A fluid meter having chamber C C' and cylinder or vessel E, which are placed in communication by openings or passages V₁ and m m' m₂, provided with a weighted valve as V, substantially as and for the purpose described. 4th. In a fluid meter, provided with chambers C C' and cylinder or vessel E, placed in communications by openings or passages V₁ m m' m₂, or their equivalents, the combination, of a measuring water wheel W, a worm S₂, worm wheel D having sector plate d', diaphragm B or its equivalent, and mechanism for transmitting the movements of diaphragm B to registering mechanism, substantially as and for the purpose described. 5th. The combination of the cylinder or vessel E, provided with passages or openings m' m₂, and revolving wheel D having sector plate d', substantially as and for the purpose described. 6th. The vessel or cylinder E, provided with passages or openings m' m₂ and the revolving wheel D having sector plate d', in combination with a passage or opening V₁ and a water wheel W, or its equivalent, substantially as and for the purpose described. 7th. The combination of cylinder or vessel E, passages or openings m' m₂, worm wheel D carrying sector plate d', elastic diaphragm B, or its equivalents, water wheel W, having worm S₂ on its shaft, weighted valve V₁, and suitable connecting mechanism between the diaphragm and registering mechanism, substantially as and for the purpose described. 8th. Cylinder or vessel E, passages or openings m' m₂, revolving sector d', in combination with an elastic diaphragm, or its equivalent, substantially as and for the purpose described. 9th. The combination with the wheel W having curved buckets r, of stationary ribs r₂ r₂ and two sets of curved buckets r₁ r₁, one set being applied on one side and the other on the opposite side of the wheel, and both sets placed in reversed position with respects to buckets r, substantially as and for the purpose described.

No. 17,926. Cord Holding Mechanism for Grain Binders. (*Appareil à tenir les liens des lieuses.*)

William Deering, (assignee of John W. Webster), Chicago, Ill., U. S., 19th October, 1883; 15 years.

Claim.—1st. The combination of the wheel B provided with the knoter operating segment and the holder operating segment, with the knotting and holding devices and the worm shaft and worm gear-pinion, whereby the knoter is rotated and the holder advanced to a new position during each rotation of the wheel B and there retained, substantially as described. 2nd. The intermittently revolving card holding device combined with the worm and worm gear wheel J, as means for advancing and retaining the said holding device, substantially as described. 3rd. The holding disc and the worm-gear-pinion and worm shaft combined with means, substantially such as described, whereby the said parts are given intermittent movement, as set forth. 4th. The holding disc, the worm and gear pinion, the locking pinion d, and its operating segment b, and the delay rim of the wheel B, all combined and operating substantially as set forth. 5th. The knoter driving wheel B having its segment b₂, the knoter shaft having its pinion in proper relation thereto, the said wheel having also the segment b, the shaft D₁ located beneath the said knoter shaft and having its pinion d₁ properly located in relation to the wheel so as to be operated by the segment b, all combined and supported by suitable bearings in the frame, substantially as described. 6th. In a knotting and holding device, the frame A forming a bearing for the wheel shaft, the wheel B adjacent thereto, the said frame having journal bearings for the knoter shaft and holder driving shaft, substantially on the same plane as regards the said wheel and the plane of movement of the needle whereby the said shafts through a proper pinions receive their rotations from the said wheel and are out of the path of the said needle, substantially as described. 7th. In a knotting and holding device, the frame having the bearings supporting the knotting and holder driving shaft and the recess for the holding plate there-between, substantially as shown and described. 8th. The frame A having the journal bearings for the knoter driving shaft and holder driving shaft and for the holder shaft, all combined and arranged substantially as described. 9th. The frame A having the bearing for the knoter shaft and holder driving shaft and the bearing a₄, for the holder supporting shaft, the holding disc over said bearing and the pinion J, beneath said bearing by which arrangement the screw-shaft is so far removed from the knoter shaft that the two said shafts may be upon the same plane in relation to the movement of the needle and the driving gear for the purposes specified, substantially as described.

No. 17,927. Pipe Wrench. (*Cle à tuyaux.*)

John E. Morrison and Hugh A. Jones, (assignees of Joseph P. Haigh), Pittsburg, Penn., U. S., 19th October, 1883; 5 years.

Claim.—1st. The pivoted gripping clutch C, having gripping surface c, flattened shank c₁, with a groove or depression c₂, in the back edge of the shank, in combination with the mortised lever A and clock-spring E secured within the recess c₂ and the mortise of the lever, substantially as set forth, whereby the clutch C is closed by a direct pulling force. 2nd. The gripping clutch C having a covered shank c₁ widened toward its extremity, in combination with mortised lever A, a pivot-connection between the inner corner of the end of the shank and the back edge of the mortise walls and a clock-spring

E, secured to the outer corner of the end of the shank and to the front end of the mortise-walls, substantially as set forth. 3rd. In combination with lever A, pivoted clutch C, and spring E having bent inner end *e*, a fastening-pin T, having longitudinal slot *i*, and cross end groove *l*, and steady-pin *u*, substantially as and for the purposes set forth.

No. 17,928. Steam Pumping Engine.

(*Machine d'équipement à vapeur.*)

George M. Conway, Milwaukee, Wis., U. S., 23rd October, 1883; 5 years.

Claim.—1st. An auxiliary valve-chamber having an inlet port leading from the inside of the main valve and outlet ports leading to the main valve chamber outside of the heads of the main valve, in combination with a cylindrical auxiliary valve having a port through its transverse center, as set forth. 2nd. The auxiliary valve having a slot through its transverse center, depressions *e e* and partitions *g g* l, in combination with the chamber C, having inlet 5 leading from the interior of the main valve and ports 1 and 2 leading to the ends of the main valve chamber outside of the heads of the main valve and ports 3 and 4 leading to a common exhaust, as set forth. 3rd. The cylindrical auxiliary valve having a slot extending through its entire length to a point below its longitudinal center to receive its stem I, and having a transverse slot through it to admit steam through it to its outlet ports, as set forth. 4th. The main valve D having slots *d d d*, and grooves *d* 2, in combination with its cylinder having ports *k k* and the main cylinder having ports B K and 6, as set forth. 5th. The hollow cylindrical main valve adapted to take steam into its center and having ports leading from its inside through the chamber in which it works to an auxiliary valve chamber and other ports leading to the main cylinder, substantially as described. 6th. In a pump, the suction and middle chambers, in combination with a removable horizontal suction valve plate that separates them, as set forth. 7th. The cylinder O, partitions *o* and bridges *o* and *p* 3, in combination with suction valve plate A1 and chamber S1, as set forth. 8th. In a pump, the combination of the suction-chamber having suction port N, cylinder O, and cylinder port *p* 2, and above the same horizontal suction valve plate A1, above this double middle chamber S1 provided with top valve plate and above this the discharge chamber, all substantially as set forth.

No. 17,929. Binding Machine. (*Lieuse.*)

John Pell and D. McLeod, Artemesia, Ont., 23rd October, 1883; 5 years.

Claim.—1st. In a self-binder, a series of revolving forks carried on a shaft supported on ground wheels and flexibly connected to the main frame, in combination with a shaft carrying similar forks but journaled on the main frame and geared with the ground wheel shaft so that the shafts shall revolve in opposite directions. 2nd. In a self-binder, a series of circular revolving forks carried on the shafts A B C and D, arranged in the frame of the machine one above the other and made to revolve in opposite directions so that the grain raised from the ground by the revolving forks A, will be taken up by the forks on B, and so on till the grain reaches the forks on D, which forks throw the grain onto the travelling belts for conveying it to the binding mechanism, in combination with the fenders V, substantially as and for the purpose specified. 3rd. In a binding machine in which a series of travelling belts convey the grain from the elevating forks to the binding mechanism, the combination of the fenders V, arranged between the belts for the purpose of supporting the grain, substantially as and for the purpose specified. 4th. In a binding machine in which a series of travelling belts convey the grain from the elevating forks to the binding mechanism, a series of arms extending between the belts all connected to the same shaft operated by a foot lever, in combination with a series of crooked fingers extending over the end of the travelling belts and operated by the said foot lever so that by pressing down the said foot lever, the arms are raised above the travelling belts and the crooked fingers are simultaneously brought down so as to arrest the movement of the grain into the grain receptacle. 5th. In a binding machine, in which the movement of the grain into the grain receptacle is arrested by the arms *h*, and fingers *w*, as specified, the combination of a weighted catch arranged to hold the said arms and fingers in position during the knotting operation, substantially as and for the purpose specified. 6th. In a binding machine in which the binding mechanism is driven from a shaft driven by and deriving a continuous motion from the main carrying wheels of the machine, a bevelled spur-wheel held by and revolving loosely on the said driving shaft M, and gearing with a bevel spur-wheel keyed to a shaft Z, running at right angles to it, in combination with mechanism arranged to connect the spur-wheels to the shaft and automatically release it after making one revolution. 7th. In a binding machine, in which the band for binding the sheaf is taken from the grain within the grain receptacle, a head for grasping the band carried on a frame below the grain receptacle, in combination with the mechanism arranged to carry the head to the end of the grain pause for an instant at that point and then return to its initial position, the said motion being performed during one revolution of the binding mechanism, substantially as and for the purpose specified. 8th. In a binding machine, in which the band for binding the sheaf is taken from the grain within the grain receptacle, the head for that purpose being carried on a frame below the grain receptacle, the combination of mechanism arranged to raise the head at the end of the sheaf and to drop down when the grain to form the band has been grasped by the head, as specified. 9th. In a binding machine in which the band for binding the sheaf is taken from the grain within the grain receptacle by a travelling frame set below the grain receptacle and arranged to divide the strand taken from the grain, in combination with mechanism arranged to revolve the head in order to twist the ends of the strands together. 10th. In a binding machine, in which the band for binding the sheaf is taken from the grain within the grain receptacle by a travelling head mechanism for tilting the head so as to throw the portion of it which grasps the band against the sheaf, in combination with mechanism arranged to tuck in the end of the band, as specified. 11th. In a binding machine in which the band for binding the sheaf is taken from the grain within the grain receptacle by mechanism

arranged to grasp a strand, divide it into two bands and to twist together the ends of the band below the grain, the combination of two curved and expanding arms arranged to descend over the sheaf, grasp the band on either side thereof, reascend carrying the bands with it and twisting them together on the top side.

No. 17,930. Saw Set. (*Tourne-gauche.*)

John T. East, Castana, Iowa, U. S., 23rd October, 1883; 5 years.

Claim.—In a saw-set, the standard A, formed with guide-arms B C, in combination with the cam *p*, crank E, spring *k*, plunger D, screws *a b* and adjustable gage F, provided with guides *u*, substantially as and for the purpose set forth.

No. 17,931. Harvester Reel.

(*Râteau de moissonneuse.*)

Frederick F. Kanne, Waterville, Minn., U. S., 23rd October, 1883; 5 years.

Claim.—1st. The combination with reel arms, bell-cranks pivoted to the outer ends of the reel arms, and beaters secured to the outer ends of the bell-cranks, of an adjustable cam or eccentric rock shafts mounted in the reel and constructed to engage with and to be actuated by the cam or eccentric, and hooks connecting the bell-cranks on opposite sides of the beaters with arms on opposite ends of the rock shafts, substantially as set forth. 2nd. The combination with the reel shaft journaled in suitable bearings and provided with reel arms and flat rings or disks, a cam loosely hung on the said shaft, bell crank levers pivotally secured to the outer ends of the reel arms, beaters rigidly secured to the bell cranks, rock shafts journaled in the flat rings or disks, and hooks connecting the said rock shafts and bell cranks, all of the above parts adapted to operate as described. 3rd. In combination with an overhanging reel shaft provided with reel arms and flat rings or disks *p*, a cam or eccentric loosely hung on the said shaft, a lever for adjusting the inclination or pitch of the said cam or eccentric, bell crank levers pivotally secured to the outer ends of the reel arms, beaters rigidly secured to the bell cranks, rock shafts journaled in the flat rings or disks and having cranked ends one of which latter engaged with the cam or eccentric, and hooks connecting said rock shafts and bell cranks, all of the parts adapted to operate, as described. 4th. In combination with the overhanging reel shaft and upright standard, an inclined brace provided at its upper end with a pulley, and a rope passing over said pulley and provided at one end with a weight and at the opposite end with a metallic bearing for said shaft. 5th. The combination of the reel shaft, reel arms, wings or disks *p*, the cam provided with a cam groove, a lever for adjusting the cam, the rock shafts, the bell crank levers, pivotally secured to the outer ends of the reel arms, the beaters secured to the bell cranks and the hooks connecting the rock shafts and bell cranks. 6th. In combination with an overhanging reel shaft, journaled as described, the reel arms, flat wings or disks *p*, a cam provided on its inner face with a cam groove, a lever for adjusting said cam, the rock shafts having crank arms, rollers secured to the said crank arms on the cam side of the machine, and adapted to move in the cam groove, bell cranks pivotally secured to the outer ends of the reel arms, beaters rigidly secured to the bell cranks and hooks connecting the said rock shafts and bell cranks. 7th. The combination with the reel shaft provided with angular faces as described, of the reel arms secured to the said shaft on the angular faces and the eye bolts for securing the reel arms together, substantially as set forth. 8th. The combination with the reel shaft provided with a single set of radial arms, of bent levers pivotally secured to the outer ends of the radial arms, toothed slats or beaters secured to the bent levers, cranks journaled in the radial arms near their inner ends, links connecting the bent arms and cranks, and an eccentric loosely placed on the shaft and provided with a cam groove in which one end of the cranks move all of the above parts, being combined and adapted to operate, as described. 9th. The combination, with the shaft, radial arms, and an adjustable eccentric, provided with a handle, and having a cam groove of the two part bent levers constructed as described, the toothed slats or beaters, and the intermediate mechanism for feathering the blades, substantially as described.

No. 17,932. Shingling Bracket.

(*Echafaudage pour couvrir en bardeau.*)

Patrick W. Ryan, Marlborough, Mass., U. S., 23rd October, 1883; 5 years.

Claim.—1st. In a shingling bracket, the base piece *c*, provided with a screw bolt B, secured thereto and adapted to project up through the space between two contiguous shingles, in combination with a clamping nut G, applied to the bolt B, all constructed and arranged to operate, substantially as and for the purpose set forth. 2nd. In a shingling bracket, the combination with the base piece *c*, provided with a screw bolt B, adapted to project up through the space between two contiguous shingles, of the holding plate D, provided on its under side with spurs or projections *h*, adapted to enter the shingles and the clamping nut G, all constructed to operate, substantially in the manner and for the purpose described. 3rd. In a shingling bracket the base piece *c*, adapted to be inserted beneath the shingles, and provided with a screw bolt B, having a flattened neck *q* at its lower end, in combination with the clamping nut G, and the plate D, provided with an aperture *h* having grooves *i* on opposite sides thereof, to adapt it to fit over the neck *q* of the bolt B, substantially as and for the purpose set forth. 4th. In a shingling bracket, the combination with the slide I, made adjustable upon the portion *w*, of the portion *p*, provided with an inwardly projecting hook or lip *g*, substantially as and for the purpose described. 5th. In a shingling bracket, the base piece *c*, provided with slots *k k* enlarged at their lower ends, substantially as and for the purpose set forth.

No. 17,933. Harrow. (*Herse.*)

William Tinney, Cavan, Ont., 23rd October, 1883; 5 years.

Claim.—1st. A harrow, composed of sections of the three sided bent bar frame A, connecting bars B B, bent to a right angle at or

near the ends, double ended teeth C, bent to a right angle and clips D D1 D2 D3, as set forth. 2nd. The harrow teeth C, bent at the middle to a right angle, and pointed at the ends whereby the teeth can be reversed end for end when worn, as set forth.

No. 17,934. Artificial Stone. (*Pierre artificielle.*)

Peter F. Haverty, Shenandoah, Penn., U. S., 23rd October, 1883; 5 years.

Claim.—The composition for the manufacture of artificial stone, consisting of a mixture of sand, cement, marble dust, plaster of paris, sal ammoniac, hartshorn, washing-soda, benzine, glue and water.

No. 17,935. Hank. (*Anneau de voilure.*)

James B. Cook, Yarmouth, Mass., U. S., 23rd October, 1883; 5 years.

Claim.—1st. The improved hank described, the same consisting of and sections A B, jointed at X, and bent to form the rings C D, the section A, being provided with the hook K, and stud G, having the groove m, and the section B, with the hook L, slot H, grooves d, holes a n, and string J, constructed, combined and arranged to operate, substantially as set forth. 2nd. In a hank substantially such as described, the section B, provided with a string J, adapted to engage a stud or projection on the section A, and thereby lock the two sections of the hank together, substantially as described. 3rd. In a hank substantially such as described, the sections A B, pivoted or jointed at X, and bent to form the large or stay ring C, and small or grummet ring D, in combination with means, substantially as described, for locking the sections together when the hank is in use, substantially as specified.

No. 17,936. Stone Dressing Machine.

(*Machin à tailler la pierre.*)

Howard D. Wallace, St. George, N. B., 23rd October, 1883; 5 years.

Claim.—1st. In a stone cutting machine, the combination of suitable uprights or supports, a reciprocating frame attached to the guides, a rotating standard to which the calling disks are connected and a screw placed in the frame for regulating the distance between the cutting disks, substantially as shown. 2nd. In a stone cutting machine the combination of the posts A, of the reciprocating frame attached to the guides, the end pieces D of the reciprocating frame having suitable recesses in their inner sides, the partially rotating rod II having the disks C secured to its ends and fitting in the recesses in the parts D, the cutting disks and a screw for regulating the distance between them, substantially as described.

No. 17,937. Knotting Device for Harvester Binder. (*Lieuse de moissonneuse.*)

Peter Patterson, Patterson, Ont. 23rd October, 1883; 5 years.

Claim.—1st. In a knotter for harvester binder in which the cord carried around the sheaf is directed by the needle over the top of the bill hook into the holding wheel, a flaring flange or horn formed on the outer surface of the stripper so as to extend obliquely across the needle slot in the breast plate in order to direct the cord carried by the needle into the recess in the stripper and prevent the said cord mounting the back of the stripper, substantially as and for the purpose specified. 2nd. In a knotter for a harvester binder in which the cord carried around the sheaf is directed by the needle over the top of the bill hook into the holding wheel, a stripper having a flaring edge formed so as to direct the cord close to the crotch of the bill hook, and recessed so as to permit the point of the bill hook to pass the stripper below the flaring edge which extends over the point of the bill hook. 3rd. In a knotter for a harvester binder in which the cord carried around the sheaf is directed by the needle over the top of the bill hook into the holding wheel, a stripper having a flaring flange or horn extending from the string guiding edge of the stripper obliquely across the needle slot in the breast plate, the said string guiding edge being formed so as to direct the cord close to the crotch of the bill hook and recessed so as to permit the point of the bill hook to pass the stripper below the flaring edge which extends over the point of the bill hook. 5th. In a knotter for a harvester binder in which the cord is carried into a notch made in a wheel arranged to carry the cord between jaws for gripping the said cord, the combination of the said wheel with a holder having flaring jaws, and held towards the wheel by a spring. 5th. In a knotter for a harvester binder in which the cord is carried into a notch made in a wheel arranged to carry the cord between jaws for gripping the said cord, the combination with the jawed holder of a wedge-shaped notched wheel, the taper extending from a little below the notches to the periphery of the wheel, substantially as and for the purposes specified. 6th. In a knotter for a harvester binder in which the cord is carried into a notch made in a wheel arranged to carry the cord between jaws for gripping the said cord, a holder having flaring jaws, in combination with a wedge-shaped notched wheel, the taper of the wedge extending from a little below the notches to the periphery and corresponding with the taper of the flaring jaws. 7th. In a knotter for a harvester in which the cord before knotting is gripped between a notched wheel and a flanged holder, a holding wheel having one side of each notch chamfered off, so as to hook one point of the notch.

No. 17,938. Sash-Holder. (*Arrête-croisée.*)

Augustus A. Nicholson and James G. Berret, Washington, Col., U. S. (Assignee of, William P. Clason, Annapolis, Maryland, U. S.) 23rd October, 1883; 5 years.

Claim.—1st. The combination of one or more wedge-shaped or inclined stops adapted to be attached to the side of a window casing, with reversed wedge-shaped or inclined stops adapted to be attached to the sash, whereby the sash is wedged and held, substantially as described. 2nd. Combined with the frame and sash and the stops e, and f, the pin h, for the purpose set forth.

No. 17,039. Nut Fastener. (*Ecrou de sureté.*)

William Dunn, D. B. Ruffner and Gideon S. Bolton, Philadelphia, Penn., U. S., 23rd October, 1883; 5 years.

Claim.—1st. A nut fastener consisting of a spring formed of a rod-bar or piece of metal of S or serpentine form with eyes at the ends, and bent to throw out the ends from the rail to be fished, substantially as and for the purpose set forth. 2nd. A spring for nut fasteners consisting of an S or serpentine piece of metal with eyes at the ends and bent centrally, forming the bearings of the spring, substantially as and for the purpose set forth. 3rd. The bent spring having a central bearing part and eyes at the end, the extreme end or angle of each of which project outwardly, so as to bite the back of the nut, substantially as and for the purpose set forth.

No. 17,940. Pipe Wrench. (*Cle à tuyaux.*)

Isaac S. Lake, (assignee of Henry B. Williams,) Fremont Centre, Mich., U. S., 23rd October, 1883; 5 years.

Claim.—A pipe wrench consisting of the jaws A D, tang B having notches F, and spring G fixed upon the handle and operating on the girt E, constructed substantially as described.

No. 17,941. Corset. (*Corset.*)

Frederick Crompton, (assignee of Isaac M. Vanstone,) Toronto, Ont., 23rd October, 1883; 5 years.

Claim.—1st. In a corset, an elastic insertion C, composed of two thicknesses of textile fabric F G, sewn to form tubular pockets, and inserted rubber strips D, re-enforced at the ends by inelastic cloth tips E, cemented thereto, the ends of the strips secured either to the inserted fabric F G, or to the corset material, whereby the fabric F G, will be shirred by the contraction of the elastic strips D, and the cemented or re-enforced portion of the strips re-enforce the stitched portion when expanded in a corset, as set forth. 2nd. An elastic insertion C, composed of a textile fabric in which pockets are formed extending wholly or partly across the fabric, and rubber strips D inserted therein, having their ends re-enforced by inelastic cloth cemented thereto and retained in the pockets by sewing through the re-enforced ends, whereby the contraction of the elastic strips will draw the material into gathers or folds, substantially as shown and described for the purpose set forth. 3rd. In a corset, the elastic rubber bands or strips D, having the ends re-enforced by an inelastic material or cloth cemented thereto, and inserted in tubular pockets formed by stitching together two textile fabrics F G, in parallel lines, so that when stitched into a corset the stitches pass through the re-enforced ends of the elastic strips, the cemented portion taking the direct strain to prevent the rubber or elastic strips or bands breaking away at the seam, as described.

No. 17,942. Tile Ditcher.

(*Machin de drainage en tuile.*)

Thomas B. Fagan and William Smith, Van West, Ohio, U. S., 23rd October, 1883; 5 years.

Claim.—1st. In a ditching-machine, the combination of a bifurcated frame or mud-boat, an adjustable frame pivoted thereto, and a cutting and pressing wheel journaled in the adjustable frame, substantially as shown and described. 2nd. In a ditching machine, the combination of the mud-boat A, having standard B, the adjustable slotted frame C, the cutting and pressing wheel D and the pulley e, and rope or chain g, substantially as shown and described.

No. 17,943. Fertilizer Distributer.

(*Distributeur d'engrais.*)

John F. Keller, Martinsburg, West Virginia, U. S., 14th October, 1883; 5 years.

Claim.—1st. The combination of the swinging stiners provided with flanges G, the pivot plates T attached to the hopper, the keepers M and coupling-bar J, all arranged to operate together, substantially as and for the purpose set forth. 2nd. The above described stiner, consisting of the cast-iron body P, moulded upon the wrought-steel fingers, said body having the hook p and projection R cast thereon, and the finger S inserted into said projection, substantially as and for the purposes set forth. 3rd. In a fertilizing machine, the feed-slides K, forming the S-shaped feed-opening and having the sharp edges L, Fig. 4, in combination with the steel fingers Q having sharp edges, and mechanism for operating said fingers, substantially as and for the purposes set forth.

No. 17,944. Filtering Faucet. (*Robinet-filtre.*)

James Aborn, Providence, Rhode Island, U. S., 24th October, 1883; 5 years.

Claim.—1st. The combination, substantially as herein before described, of a faucet-body, a suitable plug and a filtering chamber containing filtering matter, and provided with an interior central partition extending from the neck of the chamber adjacent to the faucet-body to the opposite end of said chamber and with a water-passage adjacent to the inner end of said partition, as set forth, whereby water flowing through the faucet may be introduced and discharged from opposite sides of said partition. 2nd. The combination, substantially as herein before described, of a faucet-body, a suitable plug and a filtering chamber provided with a central partition extending from the neck of said chamber to near its opposite end, and with a water passage at or near the inner end of said partition and rotatively mounted with relation to the faucet-body, whereby said chamber may be reversed as set forth. 3rd. The combination of the faucet-body, the rotative plug longitudinally divided internally and the filtering chamber provided with the central partition and mounted upon said plug, substantially as described. 4th. The combination of the faucet-body, the filtering chamber, the rotating plug carrying said chamber, the ratchet teeth on said plug and the handle provided with the pawl, substantially as described.

No. 17,945. Rolling Mill. (Laminoir.)

John R. Hersey, Montreal, Que., 24th October, 1883; 5 years.

Claim.—1st. The combination of the rolls C D and E, with the channel *e*, substantially as shown and described for the purposes set forth. 2nd. The combination of the rolls C D and E, with the channel *e*, having side pieces *c* forming guides, substantially as shown and described for the purpose set forth.

No. 17,946. Ice Cream Refrigerator.*(Congélateur pour crème glacée.)*

John Alexander, Toronto, Ont., 24th October, 1883; 5 years.

Claim.—1st. An ice cream refrigerator, in which the freezing compound is contained in a movable box placed within the chamber containing the cream cans, substantially as and for the purposes specified. 2nd. In an ice-cream refrigerator, a detachable can or box, arranged to contain the freezing compound within the refrigerator, in combination with an aperture made in the bottom of the can and leading to the drain pipe in the bottom of the refrigerator, for the purpose of carrying away the water produced by the melting of the freezing compound. 3rd. In an ice-cream refrigerator, in which the ice-cream cans are suspended within the refrigerator in a rack provided for the purpose, the combination of detachable cans placed within the refrigerator in proximity to the ice-cream can rack, and having holes made in their sides to permit the free escape of the cold air produced by the freezing compound. 4th. In an ice cream refrigerator, in which the cream cans A are suspended in a suitable rack, the combination of a series of holes *e* made in the cans A, substantially as and for the purposes specified.

No. 17,947. Lager Beer Refrigerator.*(Réfrigérant à bière allemande.)*

John Alexander, Toronto, Ont., 14th October, 1883; 5 years.

Claim.—In a lager beer refrigerator, a vertically-sliding door having a notch cut in its bottom rail to fit over the faucet protruding from the keg, in combination with a rail extending from the bottom of the door to the bottom of the chamber containing the keg, and so hinged that it may be folded outwardly for the purpose of permitting the keg to be slipped in, without being lifted above the level of the chamber's floor.

No. 17,948. Backs for Pictures.*(Dos d'images.)*

Lorenz A. Deuther, Buffalo, N. Y., U. S., 24th October, 1883; 5 years.

Claim.—A back for picture or other frames, composed of strips or blocks of wood, or other rigid material, and sheets or strips of paper or cloth, glued or cemented to opposite sides of said strips or blocks, whereby said strips or blocks are firmly connected and drawn against each other, the whole forming a light and rigid plate of uniform thickness throughout, substantially as set forth.

No. 17,949. Locomotive Engine.*(Machine locomotive.)*

Mathias N. Forney, New York, N. Y., U. S., 24th October, 1883; 5 years.

Claim.—1st. The combination, substantially as set forth, of a locomotive engine, a tender and a truck, or "bogies" which is adapted to support a portion of the weight of both the engine and tender, and to which the engine and tender are connected with the capacity of movement about a pivot or vertical axis upon the truck, independently of each of the other. 2nd. The combination substantially as set forth, of a locomotive engine, a tender and a truck or bogie adapted to support a portion of the weight of both the engine and tender, these members being combined for joint operation so that either the engine or the tender, or both shall have the capacity of lateral movement on or in relation to the truck. 3rd. The combination, substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support a portion of the weight of both the engine and tender, and mechanism whereby the weight of the engine supported by said truck can be removed or relieved to a greater or less degree therefrom, at will, during the operation of the engine. 4th. The combination, substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support a portion of the weight of both the engine and tender, and mechanism for varying the load upon the leading truck of the engine at will, during operation. 5th. The combination, substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support a portion of the weight of both the engine and tender, and two separate sets of springs, bearing upon said truck, and carrying respectively such portions of the weight of the tender and the weight of the engine as are applied to said truck. 6th. The combination substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support through separate sets of springs respectively, portions of the weight of the engine and of the tender, and a steam or air cylinder having its piston connected with the springs of said truck which support the weight of the engine to be removed or relieved in greater or less degree from said springs at the will of the operator. 7th. The combination, substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support portions of the weight of the engine and of the tender, and a steam or air cylinder having a piston of substantially different areas on its opposite sides, said piston being adapted to receive pressure either upon its greater area or on both sides, and being connected with the truck which supports part of the weight of the engine. 8th. The combination, substantially as set forth, of a locomotive engine, a tender, a truck or bogie adapted to support a portion of the weight of both the engine and tender, and equalizing mechanism between the driving wheels and said truck, for transferring weight from the former to the latter, or vice versa. 9th. In a locomotive engine, the combination, substantially as set forth, of a pair of main frames located inside the driving wheels, a pair of supplemental frames located outside the driving wheels, and connected

rigidly to the main frames in advance of the rear driving axle and a fire box, the forward portion of which is located between the rear driving wheels, and which is laterally extended in rear thereof to a width greater than the distance between the driving wheels. 10th. In a locomotive engine, the combination, substantially as set forth, of an equalizing lever having one of its ends supported upon an axle box, and the other by a spring which rests upon an adjoining axle box and sustains the weight carried thereby, and a spring which is connected at its ends to the engine frame, and which forms a fulcrum or bearing for the equalizing lever. 11th. The combination substantially as set forth, of a locomotive engine, a tender and a draw-bar connected at its front end to the tender, these members being so combined as that, first, the lateral movement of the engine on a curve will incline the draw bar from its connection with the tender, towards the outside of the curve, and second, that the forward tractive force of the engine will induce a compressive strain on the draw-bar and a tendency to force the rear end of the engine outwardly and the front end inwardly in passing around a curve. 12th. The combination substantially as set forth, of two locomotive engines and an interposed tender, each end of which is supported by a truck or bogie adapted to sustain a portion of the weight of the adjacent engine.

No. 17,950. Belt Fastener.*(Joint de courroie.)*

Charles I. Humphrey, Boston, Mass., U. S., 24th October, 1883; 5 years.

Claim.—1st. A belt fastener consisting of a metallic plate B, provided on its two sides with two series of studs *d d*, and with a central rib or fin D, having vertical prongs or ribs transversely thereto, substantially as described. 2nd. A belt fastener consisting of a metallic plate B, provided on its two sides with two series of studs *d d*, and with a central rib or fin D, substantially as described. 3rd. A belt fastener, consisting of a metallic plate B, provided with a central rib or fin D, and on either side of said rib with a series of internally threaded studs *d d*, in combination with the screws C C, substantially as and for the purposes described.

No. 17,951. Fire-Escape. (Sauveteur d'incendie.)

John Zerr, Keokuk, Iowa, U. S., 24th October, 1883; 5 years.

Claim.—1st. A ladder having the foot piece B, with ring D, and the cross piece H, in combination with the chain E, permanent brace F, pulley L and ropes N R, as shown and described. 2nd. The combination with the ladder A, having the foot piece B, of the ring D, the cross piece H, having a loop J, and the latch K, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, with a series of ladders A, of the pulley D, the ropes N, having the hooks O, and the guy ropes R, substantially as herein shown and described and for the purpose set forth. 4th. The combination, with a series of ladders A, of the pulleys L, the ropes N, having the hooks O, the guy ropes R, and the belt P, on the ropes N, substantially as herein shown and described and for the purpose set forth.

No. 17,952. Time Controlling System.*(Système pour régler l'heure.)*

William F. Gardner, Baltimore, Maryland, U. S., 24th October, 1883; 5 years.

Claim.—1st. The method of transmitting correct time signals, and automatically setting a system of clocks to such correct time, which consists in comparing an independent transmitting with a standard time piece, and detecting and recording their variation, by connecting said time pieces with a chronograph, so that the seconds indications are made on the record sheet, simultaneously and in parallel lines, the correct time thus obtained being transmitted to a series of clocks automatically set to the same or different times by means of a signalling, repeating and setting mechanism, as set forth. 2nd. In a clock controlling system, a standard clock, the daily error of which is known, a chronograph for comparing clocks, a transmitting and control clock, a repeater and a series of controlled clocks, electrically connected, the control clock containing means for automatically transmitting preparatory and controlling signals, substantially as and for the purpose described. 3rd. In a clock controlling system, a standard clock, a chronograph, a control clock, a repeater and a series of controlled clocks, electrically connected as described, the controlling clock containing means for automatically transmitting preparatory signals to the stations containing the controlled clocks and at the end of said signals, setting the hands of the controlled clocks to their local or other determined time, substantially as set forth. 4th. In a clock controlling system, a series of controlled clocks, in circuit with a transmitting clock containing mechanism for automatically sending preparatory signals to the controlled stations and setting the hands of the controlled clocks at such stations, the controlled clocks containing a hands train independent of the setting mechanism, so that the last corrected time will be indicated and carried on by the hands on such clocks, whether the setting mechanism fail to act or the line be broken, as set forth. 5th. In a clock controlling system, a series of clocks in a main line circuit, a controlling clock in a local circuit, a repeater having one or more make or brake arms and contacts, said controlling clock and repeater being switched into the main line at the time of sending preparatory signals, and switched out after said signals have been sent, and the clocks set to their local or other times. 6th. A clock controlling system, containing a transmitting and one or more controlled clocks in electric circuit, the controlled clocks having their hands and one or more cams mounted as described, the hands being adjusted to local or other time and the cams so centered or adjusted that the push points of a cam lever will bear on their respective centres at the same time, whereby through the intervention of a magnet and armature in electric circuit with the clocks, said controlled clocks may be automatically set to the same or as many different times as there are clocks, substantially as and for the purpose set forth. 7th. A clock controlling system, in which two or more clocks in the same electric circuit can be automatically and simultaneously set to different

times by one signal from the transmitting clock, substantially as described and for the purpose set forth. 8th. A clock controlling system, as described, in which the hour, minute and second hands are controlled on any part of the dial, the error being corrected and each clock set to the same or a different time at the same instant, substantially as set forth. 9th. In a clock controlling system as described, a transmitting clock provided with a dial train, one or more cams mounted as described, a circuit breaking wheel G, on the seconds hand arbor, one or more circuit breaking springs and springs bars, said spring being provided with a jewel to engage with the teeth on said wheel, and a contact point engaging with a disk attached to the spring bars, a lever for actuating the cams, a magnet armature to actuate said lever, the magnets and spring being in circuit with a standard clock and a repeater A, substantially as and for the purpose set forth. 10th. A time mechanism in which the hour, minute and seconds hands are simultaneously set or brought to a zero point from any position on the dial, by two or more cams suitably connected with said hands, said cams being controlled by a current of electricity through the intervention of suitable mechanism, substantially as and for the purpose set forth. 11th. In a clock controlling system as described, a controlled clock, having a dial train, one or more cams F P, mounted as described, a cam actuating lever and a magnet for actuating the cam lever, said magnet being in circuit with a signal transmitting clock, as and for the purpose set forth. 12th. In a transmitting clock for the purpose herein described, a circuit breaking wheel G, mounted on the sleeve carrying the seconds hand, and having one or more teeth removed from one part of its periphery for an intermediate break during the minute and nine teeth, more or less, removed previous to the beginning of the next minute, whereby a time is afforded for making proper circuit connections, substantially as and for the purpose set forth. 13th. In a transmitting clock as described, a circuit breaking wheel G, having a projecting pin H, substantially as and for the purpose set forth. 14th. In a signal transmitting clock for the purpose described, the circuit breaking springs B B₁, insulated from each other and provided with jewels h, and contacts l, said springs having a vertical and horizontal adjustment, as and for the purpose set forth. 15th. The spring bars B₂ B₃, provided with the adjusting screws b and l₁, and disks β, as and for the purpose set forth. 16th. In a signal transmitting clock as described, the combination with the springs B B₁, having the contacts h, of the springs bars B₂ B₃, having the disks l, said springs and bars having a vertical adjustment, as and for the purpose set forth. 17th. In a transmitting clock as described, the combination with the springs B B₁, and spring bars B₂ B₃, of the wheel G, as and for the purpose set forth. 18th. In a transmitting clock as described, the combination of the springs B B₁, spring bars B₂ B₃, and wheel G, with the repeater A, as and for the purpose set forth. 19th. In a controlled clock, in a clock controlling system, the combination with the magnet D, of a balanced armature lever C, as set forth. 20th. In a controlled clock, in a system of clock control, the combination with a magnet D, of the lever C, for actuating the cams, said lever having an armature c, through the intervention of which the lever is actuated by the magnet, as set forth. 21st. The combination with the dial train, cams mounted as described, circuit breaking springs, magnet and armature, of the cam actuating bar I, provided with the projections I₁ I₂ I₃, by means of which the cams are acted upon vertically and positively, substantially as and for the purpose set forth. 22nd. A clock provided with cams mounted on the minute and seconds hands arbor and hour hands arbor, said cams being actuated by a lever, so as to turn them and at the same time turn the hands, as set forth.

No. 17,953. Brake Rim for Car Wheels.

(*Jante de roues pour freins des wagons.*)

Thomas B. Howe, Scranton, Penn., U.S., 24th October, 1883; 10 years.

Claim.—1st. The combination with a car wheel, of an independent brake rim constructed in sections which are not joined together at their meeting edges but are bolted or otherwise securely connected separately to the wheel, substantially as described. 2nd. The combination with a car wheel, of a brake rim bolted to the wheel, and separate and distinct from the supporting tread of the wheel, and a non-conducting material interposed between the brake rim and the wheel, substantially as described. 3rd. The combination with the car wheel, of the independent sectional brake rim, the non-conducting material interposed between the rim and the wheel, and the transverse securing bolts, the whole arranged and operating, substantially as described.

No. 17,954. Steam Condenser.

(*Condenseur à vapeur.*)

Louis Schutte and John Goehring, Philadelphia, U.S., 24th October, 1883; 5 years.

Claim.—1st. A steam condenser, consisting of a central water nozzle, an induction tube having lateral inlets inclined in the direction of the current, and a discharge tube, combined with a central steam nozzle located above the water nozzle and arranged as described, so that the suction or inductive action produced by the steam jet is confined to the space above the water nozzle. 2nd. In combination with the combining tube B, having a bore of uniform diameter, and a series of forwardly inclined inlets, the water nozzle A, the feed pipe O, the steam nozzle located in the feed pipe above the water nozzle, and a chamber or conductor, substantially as described for supplying steam around the exterior of the combining tube. 3rd. In combination with the perforated combining tube constructed as described, the steam nozzle joined to the end of said combining tube in inclosing jacket I, the water pipe O, communicating with the water nozzle, and the steam nozzle F, located above the water nozzle as described. 4th. In combination with a jet condenser, a check valve opening toward said condenser, and a steam pipe or conductor, constructed substantially as described with ports or passages leading from its opposite edges toward the condenser, whereby a valve is caused to rise and fall without side motion. 5th. In combination with the jet condenser, a steam inlet pipe, the check valve D and the two ports or passages leading from above said valve on

opposite sides into opposite sides of the condenser, whereby a free action of the valve and a uniform distribution of the steam within the condenser are secured. 6th. In combination with a jet condenser, a steam supply pipe provided with an outwardly opening relief valve adapted to open under the pressure of the steam, whereby the steam is caused to pass through the condenser during the maintenance of a vacuum therein, but permitted to escape without passing through the condenser in the event of the failure of the vacuum. 7th. In combination with the jet condenser, the steam supply pipe, the relief valve E, and the operating lever M, connected thereto by means, substantially as described, adapted to permit a lost motion between the two, whereby the valve may be operated positively or permitted to operate freely as a check valve at will. 8th. In combination with a jet condenser, a starting valve located in or below the discharge tube and above the discharge water level. 9th. In combination with a jet condenser, a direct passage or communication between the suction and discharge passages. 10th. In combination with a jet condenser, a suction or supply passage, its delivery passage, a direct passage or communication between the suction and discharge passages, and a valve for controlling the communication. 11th. In a jet condenser, the combination of the water supply or feed pipe, a water discharge pipe and means substantially as described, whereby a portion of the water may be returned from the discharge pipe directly to the feed pipe, whereby a condenser of given dimensions may be caused to condense economically a greater or less quantity of steam.

No. 17,955. Combination Wood Work.

(*Combinaison d'ouvrage en bois.*)

Sylvester C. Bigford, Toronto, 24th October, 1883; 5 years.

Claim.—1st. Cutting by the action of a saw or revolving knife driven by steam or other motive power, a series of grooves formed longitudinally with the grain of the wood before it is shaped into the form of the article it is intended for, and forcing into the said grooves strips of wood of different quality or color, and the rough block thus prepared may be turned, planed, or otherwise formed into the article it is desired to produce. 2nd. A block of wood provided with grooves of substantially equal distances from the centre of the block and having strips of material of a different color or quality inlaid in said grooves, and adapted to be turned in a lathe to produce an ornamental turned article, substantially as described. 3rd. A block of wood, polygonal in cross section, having sides at substantially equal distances from the center, and having inlaid strips of different color or quality, substantially in the centres of said sides, adapted to be turned in a lathe, substantially as described.

No. 17,956. Car-Coupler. (*Attelage des wagons.*)

Pierre Mayrand, Montreal, Que., 24th October, 1883; 5 years.

Claim.—1st. In a railway car coupler, the transverse shaft C, having the hand wheels c c, the lifting arm d, connected with the coupling pin b, the lever lever D, fixed rigidly to the shaft C, the latch lever E, spring f, and the bar g, substantially as shown and described. 2nd. In a railway car coupler, the shaft C on which is fixed the lifting-arm d, connected with the coupling link a by the eye-bolt h, so that the link may be raised by operating the hand wheels c c, or the lifting-rod e, as shown and described. 3rd. In a railway car coupler, the combination of the lifting rod e with the coupling link a, lifting arm d, and shaft C, substantially as described. 4th. The combination of the lifting-rod e with the coupling-pin b, lifting-arm d, shaft C, lever D, latch lever E and spring f, substantially as shown and described.

No. 17,957. Muzzle for Animals.

(*Muselière d'animaux.*)

James D. Crockett, Ripley Miss., U.S., 24th October, 1883; 5 years.

Claim.—1st. The combination of a muzzle, composed of two hinged or pivoted parts, and an operating rod which extends below the muzzle, and which is connected with the two movable parts, so as to open outward, substantially as described. 2nd. The combination of the part A, which is fastened to the animal's head by a cord or strap B, with the two parts of the muzzle which are connected thereto, and operating rod for opening the two parts of the muzzle, substantially as set forth. 3rd. The combination of the muzzle, composed of two hinged or pivoted parts, an operating rod provided with suitable locking hooks, and suitable loops or staples, which are secured to the movable parts, so that they can be locked together, substantially as specified. 4th. A muzzle having the two hinged portions, combined with the operating lever provided with a barb, substantially as shown. 5th. A muzzle having the two hinged parts, and the operating lever, the operating lever being pivoted to the band or ring which encircles the lower part of the animal's head, and connected to the upper edge of the hinged parts, substantially as described. 6th. The combination of a muzzle, having the two pivoted parts and the pivoted operating lever with a blind, which is connected both to the muzzle and to the operating lever, substantially as set forth.

No. 17,958. Rat and Game Trap.

(*Piège à rat et à gibier.*)

Joseph C. Hull, New York, N. Y., U.S., 24th October, 1883; 5 years.

Claim.—A jaw or trap consisting of a base, of an upright mounted upon said base, of a bolt located behind the upright and attached to the base, of a wire choker-bow wound around said bolt to form a spring and the ends resting against the back of the upright, of hooks attached to the upright for holding the ends of the spring in place, and of a catch and trigger for holding the choker in an upright position, all combined and arranged, substantially as set forth.

No. 17,959. Steam Water Elevator.

(*Élévateur d'eau à vapeur.*)

Ezra W. Vanduzen, New Port, Kentucky, U.S., 24th October, 1883; 5 years.

Claim.—In a steam water elevator or ejector, the conical shell A,

having the upturned pipe D, terminating centrally therein, the internal radial brackets E, having the inclined faces e_3 , the plain cylindrical surface e_1 , and the screw-threaded surface, in combination with one or more tapering nozzles F, of increasing diameters, having the radial arms F₁, and an annular space between its larger end and the upper end of the pipe, and the conical nozzles i_7 , having the annular flange T, at its lower end, and the cylindrical pipe i_1 , at its upper end, substantially as described.

No. 17,960. Rack for Umbrellas.

(*Porte-parapluies.*)

Charles M. Boynton and Theodore M. Togs, Concord, N. H., U. S., 24th October, 1883; 5 years.

Claim.—1st. In a rack for umbrellas and parasols, the tubes or wires C C₁ E F, and the upright supports B connected with the base A, having holes I in the longitudinal center thereof, and the longitudinal strips H and the strips H₁, placed at right angles thereto on the outside, all constructed substantially as shown and so arranged as to be readily taken apart, as and for the purpose specified. 2nd. In a rack for umbrellas and parasols, composed of tubes or wires B C C₁ E and F, all arranged substantially as shown, the combination with the rack E, of the hooks G, as and for the purpose described and set forth.

No. 17,961. Club Foot Apparatus.

(*Appareil orthopédique.*)

James Burns, Chicago, Ill., U. S., 24th October, 1883; 5 years.

Claim.—1st. The combination of belt B, containing lever B₁, connected by joints t and u , with the thigh splint A, and strap B₂, as and for the purpose set forth. 2nd. The curved plates A and A₂, telescoped, the screw n_1 and nut n_2 , as and for the purposes set forth. 3rd. The plates a_1 , with a pinion a_2 , and toothed rack a_3 , as and for the purposes set forth. 4th. The screws S₂ and nuts S₃, stirrup C₁, hinges n and n_1 , with standards m , as and for the purposes set forth. 5th. The hinge w_1 , with screws v and v_1 , also the plate e_2 , in the sole of the shoe, as and for the purposes set forth. 6th. The brace rod z , as and for the purposes set forth. 7th. The plate O, with straps a and a_1 , shaft a_2 , ratchet a_4 , prop n , as and for the purposes set forth.

No. 17,962. Coat Hook. (*Patère.*)

George H. Mills, Boston, Mass., U. S., 24th October, 1883; 5 years.

Claim.—1st. The locking coat-hook described, the same consisting of the body A, provided with the brackets B C, pad D, and spring catch H, all constructed and arranged, substantially as and for the purpose set forth. 2nd. The support E, arranged horizontally within the jaws or pads of the hook, in combination with the brackets C B, locking spring H, and pads J B, substantially as and for the purpose set forth. 3rd. The bracket C, provided with the yielding cushion J, at its outer end, or its equivalent, bracket D, and spring catch H, constructed and arranged to operate, substantially as described. 4th. The shank G, provided with the annular groove z , in combination with the spring catch H, substantially as and for the purpose specified. 5th. The chain L, provided at its free end with the spool or clutch f , in combination with the body A, pad D, and bracket B, provided with the hole or aperture g , for receiving and holding the clutch, substantially as and for the purpose specified. 6th. The locking pad D, having its inner face inclined as shown in Fig. 4, in combination with the wedge-shaped cushion M, cushion J, brackets B C, and catch H, substantially as and for the purpose specified.

No. 17,963. Seeding and Drilling Machine.

(*Semoir-traceur.*)

Jesse O. and Wareham S. Wisner and Edward L. Gould, (assignee of James S. Heath, Brantford, Ont., 24th October, 1883; 5 years.

Claim.—1st. In a seeding machine, in which independent drag-bars are used, a head-block pivoted on the drag-bar and provided with suitable locking mechanism in combination with a T or dovetail slot, for the purpose of providing a simple means for detachably connecting the hoe or cultivator tooth. 2nd. In a seeding machine, in which independent drag-bars are used, a curved spring-tooth detachably connected to the drag-bar, in combination with a locking device arranged to lock the head-block, to which the spring-tooth is attached, substantially as and for the purpose specified. 3rd. In a seeding machine, in which independent drag-bars are used, the combination of a curved spring-tooth detachably connected to the drag-bar.

No. 17,964. Spool. (*Bobine.*)

Albert A. Merrick, Montreal, Que., 24th October, 1883; 5 years.

Claim.—1st. In a thread spool, the cushion C, made of suitable soft porous material inverted in the hollow core of the spool, as shown and specified. 2nd. The combination, with the spool A, of the cushion C, placed in the central opening of the spool, substantially as shown and described.

No. 17,965. Iron Fence. (*Clôture en fer.*)

The E. T. Barnum Wire and Iron Works Co'y, (assignee of John L. Thomson,) Detroit, Mich., U. S., 25th October, 1883; 5 years.

Claim.—1st. A metallic washer, formed with an elongated opening, one section of which corresponds with the cross-section of the post or picket, with parallel sides extending from the sides thereof, enclosing a space of less diameter and terminating in an angle fitting the sides of the post or picket, and adapted to slide in notches in the corners of the post or picket, substantially as described. 2nd. In an iron fence, the combination of the metallic washer D, formed with an opening of the character as described, the notched picket A, stringer B and washer b , the whole united and secured, substantially as described.

No. 17,966. Flax Thrasher.

(*Machine à battre le lin.*)

Andrew Hullinger, Oberlin, Ohio, (assignee of Alfred Wannamaker, West Salem, Ohio,) U. S., 25th October, 1883; 5 years.

Claim.—1st. In a flax thrasher, a cylinder composed of yielding sections consisting of cylindrical caps G, springs H, perforated block F, the shaft E, securing-strips K, and recessed disks I t , keyed to the journals of said shafts, substantially as specified. 2nd. The combination with the shaft E, of a roller section composed of the cap G, having the flange g and an annular spring support incased therein, and adapted to be slipped upon the shaft, substantially as specified.

No. 17,967. Hydro-Carbon Engine.

(*Machine à hydro-carbure.*)

The Brayton Petroleum Engine Co'y., Hartford, Conn., (assignee of Amos S. Stetson, South Abington, Mass.,) U. S., 25th October, 1883; 5 years.

Claim.—In a hydro-carbon-motor, a cylinder prolonged beyond the working stroke of the piston sufficiently to prevent the combustion against the working-face of such piston from directly heating that portion of the cylinder beyond such working-stroke, in combination with a trunk-piston so extended as to present a designedly large surface to such prolonged and unheated portion of such cylinder, and a water-circulation, substantially as shown and described.

No. 17,968. Cultivator. (*Cultivateur.*)

Daniel C. Van Brunt, Horicon, Wis., U. S., 25th October, 1883; 5 years.

Claim.—1st. The combination with a cultivator-beam provided at its rear end with a curved arm, rigidly secured thereto, of a slip-tooth clamped to the said curved arm, with its upper end resting on, or getting its support from, the rear end of the beam, substantially as set forth. 2nd. The combination with a cultivator-beam, having a slotted curved arm (one or more) rigidly secured to its rear end, of a slip-tooth clamped to said curved arm or arms, the upper end of the tooth being held against displacement, substantially as set forth. 3rd. The combination with a cultivator-beam, having a slotted curved arm (one or more) rigidly secured to the rear end of the beam and a clip or loop, of a double-pointed slip-tooth, one end of which engages in a clip or loop while its shank is clamped to the curved arm or arms, substantially as set forth.

No. 17,969. Snow Shovel. (*Pelle à neige.*)

Henry C. Cole, Wallingford, Vt., U. S., 25th October, 1883; 5 years.

Claim.—1st. The combination with the blade B, having in each side edge the groove b , and the rabbet c , on its under surface of the U-shaped strengthening-plate C, one edge of which is inserted in the groove and the other edge of which underlaps the blade and rests in the said rabbet, and rivets d , or like devices, substantially as described. 2nd. The combination of the blade B, the edge-blade D, the handle A secured to the front or upper surface of the blade and overlapping said plate D, the rivet g , or like device, inserted through the blade B, the edge-plate D, and the handle A, and the cap g_1 for protecting the end of the handle, substantially as described.

No. 17,970. Grate. (*Grille.*)

Lewis Merriman, Beloit, Wisc., U. S., 25th October, 1883; 5 years.

Claim.—The combination with a fire pot provided with a discharge orifice and with draft-holes, of a concave or dish grate set obliquely therein, and provided with a pin extending through the wall of the pot, whereby the grate can be rotated to bring the fresh charge of coal beneath the surface of the fire, substantially as set forth.

No. 17,971. Combination Tools for Cutting Wire and Tin Seals off Railway Cars. (*Combinaison d'outil pour couper le fil de fer et les cachets des wagons.*)

Ingersoll T. Torrey, Beeton, Ont., 25th October, 1883; 5 years.

Claim.—1st. The combination tool shown and described, consisting of the cross pivoted blades A B, cutting edges c e , screw driver f , and bows a b , formed respectively with the hammer-head i and claw g , substantially as described. 2nd. In a combination tool having cross pivoted blades, the bow b , formed with the claw g , substantially as and for the purposes set forth. 3rd. In a combination tool having cross pivoted blades, the bow a , formed with the hammer-head i , substantially as and for the purposes set forth. 4th. In a combination tool having cross pivoted blades, the bows a b , formed respectively with the hammer-head i , and claw g , substantially as and for the purposes set forth. 5th. In a combination tool having cross pivoted blades, the short cutting portion c , in combination with the cutting portion e , reduced to form a screw-driver f , substantially as described.

No. 17,972. Locomotive Driving Gear.

(*Communication de mouvement de locomotive.*)

William Crippen, Cadillac, Mich., U. S., 25th October, 1883; 5 years.

Claim.—1st. The locomotive gearing e p p_1 , arranged on the axles in a vertical plane passing through the longitudinal middle of the trucks, in combination with a diagonal crank-shaft m , having universal joints and end pinions, and adapted to slide in said pinions, as and for the purpose specified. 2nd. The combination, in the running-gear of a locomotive, of inside truck-frames c , branched center pins f , truck-bolsters i , pedestal frames j k , roller-supports and the locomotive-frame e , substantially as described.

No. 17,973. Car Roofing. (*Toiture de wagon.*)

William H. Paige, Cleveland, Ohio, U.S., 25th October, 1883; 5 years.

Claim.—1st. In car roofing, the combination of the described prepared paper, with the rafters A and outer roofing forming an impervious ceiling to the car, substantially as described. 2nd. In car roofing, the combination with the outer-roofing and a wooden ceiling, of the interposed prepared paper and the cut-away perlines and plates, substantially as described. 3rd. The combination in car roofing, of the within described prepared paper, substantially as and for the purpose specified. 4th. As a new article of manufacture, the prepared paper provided with corrugations for giving additional strength and for the better means of securing said sheets together and to the roof, substantially as specified. 5th. The lapped corrugated edges of the paper sheets, whereby said sheets are capable of being united and firmly held by the overlying ridge piece perlines and plates without nailing, as shown and described.

No. 17,974. Oven Doors. (*Portes de fourneau.*)

J. J. Quinn, London, Ont., 25th October, 1883; 5 years.

Claim.—1st. In combination with inner-rim B, of an oven door A, and lining C, the projections or studs D D for holding the lining in place and allowing of its adjustment and withdrawal, substantially as shown and specified. 2nd. The described punch for forming the studs in the sand in the process of moulding the oven-doors, said punch consisting substantially of a flat face E, having ledge E' projecting at an angle therewith provided with a raised stud D, and handles F, substantially as shown and specified.

No. 17,975. Liquid Carbonic Acid Gas Motor. (*Moteur à gaz d'acide carbonique.*)

A. Gateau, Chicago, Ill., U.S., 25th October, 1883; 5 years.

Claim.—1st. In a gas-motor, the generator consisting of a shell B, containing a series of integrally-formed tubes A, in which smaller tubes A₁ are secured, forming annular independent spaces for generating the gas, communicating with chambers A, in combination with a central passage A₂, by which the tubes, and inclosing shell, a double return-passage is formed for the hot air, substantially as set forth. 2nd. The generator herein described, consisting of a series of integral tubes A, connected at their upper and lower ends to an annular pipe A₃, the upper one communicating with a dome A₄, and a central passage A₂, in combination with the tubes A₁, the heads C₁, and an inclosing-casing B, all substantially as specified. 3rd. In a motor, a cylinder consisting of a central part G₁, attached to a casing B, and having the ends F F, provided with liquid-chambers I I, secured to said central part, substantially as specified. 4th. The central cylinder-section G₁, having a space for a packing-fluid and the packing-rings u, arranged, substantially as shown, and for the purpose set forth. 5th. The combination of the cylinder ends F F, with the piston-rods a a, the packing-rings u, the intermediate perforated rings a₂, the chambers I I, and the screw-heads F, all substantially as herein set forth. 6th. In a motor, the rack-bar M₁, and gear-wheel M₁, in combination with the part M₂, the pump-rod r₁, and rack-bar M₂, having stop pins and springs L, and the main valve, substantially as and for the purpose specified. 7th. The combination of the rack-bar M₂, and wheel M₂, with the projection M₃, tappets v, lock-pins r, and springs s, and the main valve, substantially as set forth. 8th. The combination of the rack-bar M₂, gear-wheel M₂, and shaft z with the gear-wheel S₁, rod S₁, and yoke Q, substantially as shown and described. 9th. In combination with the piston G, and the cylinder part G₁, and end sections F F, the packing-rings u, consisting of annular rings u, having part u₁, with lateral flanges u₂, all constructed substantially as specified. 10th. In a motor, the combination, with the piston-rod a, of the yoke Q, having gear-faces on diagonally opposite sides between which the gear-wheels R, revolve, and the main shaft S₁, substantially as described. 11th. The combination, with the piston-rod a of the yoke Q, having gear-faces on diagonally opposite sides and the gear wheels R, provided with rollers I B, arranged in the ratchet notches of the shaft S₁, to alternately revolve the wheels and the shaft continuously, substantially as specified. 12th. In a motor, the condenser herein described, consisting of a casing containing a series of horizontal separate coils arranged above each other, and having a common vertical connection with the exhaust passage from the motor cylinder, substantially as and for the purpose specified. 13th. In a motor, the condenser herein described, consisting of a casing provided with open panels and a series of coils arranged above each other in horizontal planes, and having a common connection with the exhaust passage and the suction-pipe of the pump, as specified. 14th. In the motor herein described, the combination of the condenser, having a series of coils arranged above each other in horizontal planes, and open panels P₁, with the lamp O, and central passage A₂, of the generator, substantially as and for the purpose herein set forth. 15th. In a gas-motor, the gas inlet passage controlled by two union-joints D D, and an inclined opening or passage, in combination with the throttle-valve D, substantially as specified. 16th. The method of operating a motor by means of gas generated from carbonic acid triple-heated, then passing said gas to a working cylinder, thence to a condenser, and finally returning it to the generator, substantially as and for the purpose set forth. 17th. In a motor, a pump arranged to extend into the casing or gas-chamber to prevent leakage of gas toward the outside, substantially as specified. 18th. In combination with the generator, working-cylinder, gas-chamber, and working parts of a gas-motor, the casing L₁, entirely surrounding said parts and forming a space for the products of combustion, and said casing provided with a hinged front section having a lap-joint for gaining access to the parts, substantially as shown and specified.

No. 17,976. Double Acting Safety Locking Hay Elevator and Carrier. (*Elevateur porte-foin à double effet avec arrêt de sûreté.*)

Mitchell T. Buchanan, Ingersoll, Ont., 25th October, 1883; 5 years.

Claim.—The combination of the pivotal jaws H H, pivoted on the carriage frame A, and provided with arms G G, frame F, provided with enlarged globular head F₁, pulley D, rope E, and cord R, with locking bolt K, provided with arms K₁ K₁, and slot O, bolt N, flanges L L, and latching block J, secured to the track C, and provided with flanges J₁ J₁, and groove P, substantially as shown and described and for the purpose specified.

No. 17,977. Sled Brake. (*Frein de traineau.*)

Oliver Pelky Arnot and Augustus J. Webster, Williamsport, Penn., U. S., 25th October, 1883; 5 years.

Claim.—The sliding bars f, connecting the brake levers g, of the front sled with the tongue rollers, arranged in slots c, and extended to the rear end of said sled, and jointed coincidentally with joints t to the yoke m, with which the brake levers of the hindmost sled are connected, substantially as described.

No. 17,978. Car Wheels. (*Roues de wagons.*)

William I. Lindsay, Cleveland, Ohio, U. S., 26th October, 1883; 5 years.

Claim.—1st. A car wheel tire rolled with two grooved steps, the one upon its outer and the other upon the middle portion of its inner surface to adapt it to be applied to or interlocked with a wheel body formed with corresponding steps upon its periphery, substantially as and for the purposes described. 2nd. A car wheel body formed with two grooved steps upon its periphery, the one upon its outer edge and the other upon its middle portion to adapt it to be applied to or interlock with a tire formed with corresponding steps upon its inner surface, substantially as and for the purpose described. 3rd. In a car wheel, the combination of the body and tire formed with interlocking, tongue and grooved steps upon the outer and middle portions of their bearing surfaces and a screw bolt passing through the one into the other, substantially as and for the purposes described. 4th. In a car wheel, the combination of the body formed with a flange upon its outer side, a tire with a corresponding recess in its outer face and inclined screw bolts passing radially through its rim inwardly into the tire, substantially as and for the purpose described. 5th. The combination of the car wheel body A, the tire B, the interlocking inclined faces of the steps a a, b b, the corresponding inclined screw bolt c and the bracket D formed with an inclined face at right angles to the axis of the screw bolt, substantially as and for the purpose described. 6th. The combination of the screw bolt with a soft metal locking pin, substantially as and for the purpose described. 7th. The combination of the car wheel body A, the tire B, the screw bolt C and soft metal pin E constructed and arranged, substantially as and for the purpose set forth.

No. 17,979. Magazine Stove. (*Poêle à charbon.*)

Samuel Smyth, Pittston, Penn., U.S., 26th October, 1883; 5 years.

Claim.—1st. The combination, with the magazine in a stove, of two cut-off plates, axis for the same and gears to connect the axis, substantially as specified. 2nd. Two segmental cut off plates geared together and provided with a handle or wrench to partially rotate such cut offs, whereby the fuel is either supported by the cut offs or the required amount fed down to the fire bed, substantially as set forth. 3rd. The combination with the magazine of downwardly projecting cheek pieces, cut off plates, axis and gearing, substantially as specified. 4th. The combination, with revolving cut offs, of the magazine having a ledge above, the cut offs and the cheeks extending below the bottom of the ledges, substantially as specified.

No. 17,980. Burglar Alarm. (*Alarme-voleurs.*)

Bernard Fay, Pittsburg, Penn., U.S., 26th October, 1883; 5 years.

Claim.—1st. The combination of the shank of the door knob with the lever f, the chains connected to its ends, the triangular lever, the connecting rod or chain, the lever x and pivoted end piece, the lever b₂, suitable springs connected to the levers x and b₂ for returning them to position and the alarm, substantially as shown. 2nd. The combination of the door-pull, the connecting rod or wire, the lever g having the projection A, the lever z provided with the pivoted end piece, the lever b₂, suitable springs for returning the levers to position and the alarm, substantially as shown.

No. 17,981. Traction Engine.(*Machine de traction.*)

Williard A. Clarke, Stillwater, Minn., U. S., 26th October, 1883; 5 years.

Claim.—1st. In a traction engine, the combination, with the main engine shaft, of a friction clutch, one member of which is adapted to be held stationary, relatively to the shaft, the bracket C secured to the boiler and carrying one of the bearings for the shaft and the clutch support secured to said bearing-bracket and arranged to support independently of the shaft that part of the clutch which can be held stationary, substantially as set forth. 2nd. The combination of the main engine shaft, the friction clutch thereon, one member of which can slide the bracket secured to the boiler which provides a bearing for the shaft, a stationary sleeve secured to said bearing bracket and adapted to loosely support the sliding part of the clutch, substantially as set forth. 3rd. The combination of the main engine shaft, the friction clutch thereon of which clutch one member slides, the bearing bracket secured to the boiler which provides a bearing for the shaft, the flange or plate c₃ c₃ rigidly secured to said bracket, the stationary sleeve K which provides a loose mounting for the sliding part of the clutch and the flange k rigidly secured to said sleeve and to the parts c₃ c₃, substantially as set forth. 4th. The combination of the main engine shaft, the friction clutch of which one member slides, the means for moving said member and the threaded rod having two threaded engagements, the two threads being of opposite inclination, substantially as set forth. 5th. The combination of the main shaft, the friction clutch of which one member slides, the means for moving said sliding member and the forked bar situated partly above and partly below the engine shaft, substantially as set forth.

No. 17,982. Carriage Harness.*(Harnais de voiture.)*

William Mulloy, Great Falls, N.H., U.S., 26th October, 1883; 5 years.

Claim.—1st. The combination of the deflecting shield, substantially as described, consisting of the bent or arched plate and its loop and hook, with the harness breeching supporter, having its part A, provided with an eye or hole *c* to receive the said hook, all being arranged and to operate, as and for the purpose set forth. 2nd. The buckle deflecting shield, consisting of the bent or arched plate, and its loop or hook arranged, as and for use, substantially as set forth. 3rd. The combination with a harness breeching supporter, of a shield to extend from it over its buckle, substantially as and for the purpose set forth.

No. 17,983. Steam Boiler Furnaces.*(Fourneaux de chaudières à vapeur.)*

John Abell, Woodbridge, Ont., 26th October, 1883; 5 years.

Claim.—1st. In a furnace designed for burning straw, a box arranged to carry the straw and provided with rollers for feeding the same, in combination with the furnace door hinged in the usual manner and having an aperture through which the straw is fed to the furnace from the straw box which is fastened to the door, substantially as and for the purpose specified. 2nd. In a furnace designed for burning straw in which the straw is fed from a box fastened to the door of the furnace, the combination of a chaff-flue leading from below the feed rollers to the ash pan, substantially as and for the purpose specified. 3rd. In a furnace designed for burning straw in which the straw is fed through an aperture in the furnace door by revolving rollers working within the straw box, the combination of an adjustable cover designed to close the aperture in the furnace door when straw is not being fed through it. 4th. In a furnace designed for burning straw, a series of grate bars extending the full length or width of that portion of the furnace intended to receive the fuel, in combination with a series of shorter bars arranged between each of the longer bars and hinged so that they can be tilted vertically for the purpose of keeping draught spaces between the grate bars. 5th. In a furnace designed for burning straw, the auxiliary bars H hinged between the bars G and connected together by the link H3 in combination with the crank levers L and L1, substantially as and for the purpose specified. 6th. In a furnace, the combination of a bridge wall extending across the furnace and situated a short distance from the mouth of the tubes, the said bridge having a hollow passage way leading from the ash pan to a point a short distance from the crown of the furnace for the purpose of discharging a current of air on the burning straw to intensify its combustion. 7th. In a furnace, a bridge wall M hinged at N within the furnace and provided with an air space M1 leading from the ash pan to a point near the top of the furnace. 8th. In a furnace in which a bridge wall is placed a short distance from and in front of the tube shut, the combination of the hinged bottom Q, closed by the action of an arm fixed to and operated by a rod extending to the fire box.

No. 17,984. Electric Light Apparatus.*(Appareil à lumière électrique.)*

Charles Lever, Bowdon, Eng., 26th October, 1883; 5 years.

Claim.—1st. In an electric arc lamp, the combination of the clip or clutch B on the carbon-holder C, which clip separates the carbons by means of spring D and lever A, and an electro magnet F inserted in a shunt circuit of considerably greater resistance than that of the arc from which it is derived and serving to counteract the force of the said spring and to regulate the arc, substantially as described with reference to Figures 1 and 1A. 2nd. In an electric arc lamp, the combination of the clip or clutch B on carbon-holder C, which clip separates the carbons by means of spring D, and an electro magnet F inserted in a shunt circuit, substantially as described with reference to Figures 5 and 7. 3rd. In an electric arc lamp, the combination of the springs B B on each side of carbon-holder C, which springs separate the carbons, and an electro magnet F inserted in a shunt circuit, substantially as described with reference to Figures 3 and 4. 4th. In an electric arc lamp, the combination of the springs B B on each side of carbon-holder C, which springs separate the carbons, the lever K, core F1 and solenoid F inserted in a shunt circuit, substantially as described with reference to Figures 3 and 4. 5th. In an electric arc lamp, the combination of the springs B B, coupling armatures A A and an electro magnet F inserted in a shunt circuit, substantially as described with reference to Figure 5. 6th. In an electric arc lamp, the cut-out device or switch consisting of projection P on carbon-holder *c*, which moves cam *m* on rod M, mounted in bracket N with slot *n*, the said M being provided with spring M1 and metallic piece M2, in combination with insulated metallic piece O and bar Q, connected with carbon-holder B1, or the negative binding screw of lamp, substantially as described with reference to Figures 7 and 7A. 7th. In working electric arc lamps on the principle described in series, by means of a self-exciting continuous current dynamo electric-machine, the combination of the pivoted armature A with spring J, and contact-piece C adapted to form a shunt circuit through metal stud S from the dynamo of a resistance R about equal to the resistance of the arcs L, the magnetized part Z to attract said armature when the dynamo has excited itself, thus breaking said shunt circuit and allowing the current to actuate the shunt electro magnets or solenoids in the lamps and form their arcs, substantially as described with reference to Figure 8. 8th. In working electric arc lamps on the principal described in series, by means of a continuous current self-exciting dynamo electric-machine, a shunt circuit for enabling the dynamo to excite itself when the resistance in the main circuit and lamps is too great to enable it to excite itself through the resistance and for breaking the said shunt circuit when the dynamo has excited itself and thus allowing the current to actuate the shunt electro magnets solenoids in the lamps and to form their arcs, substantially as described with reference to Figures 9, 10 and 11.

No. 17,985. Padlock. (Cadenas.)

Charles C. Dickerman and Roland G. Usher, Boston, (assignees of Daniel Powers, Shelburne Falls,) Mass., U. S., 26th October, 1883; 5 years.

Claim.—1st. The described padlock, consisting of the shell A, the hasp F, the locking dog A2, the sliding-tumbler carrier O4, the tumbler X, the tumbler springs O1, the safety guard A7, the fence E5, and the tumbler-carrier cover O2, locking devices, the numeral plates E1, the pawl hearing lever A5, the pawls G, and the spring dogs E3 registering devices all made and arranged in relation to each other, substantially as described. 2nd. In a padlock, in combination with the shell hasp and locking dog, the sliding-tumbler carrier O4, tumbler carrier cover O2, and tumblers X, made substantially as described. 3rd. In a padlock, in combination with a shell hasp, locking dog tumbler carrier O4, tumblers X and tumbler carrier cover O2, the safety guard A7, and the fence E5, made substantially as described. 4th. A registering device for padlocks and other purposes confined in a suitable case or shell, consisting of a series of concentric circular numerals, bearing plates E, the pawls G, the spring dogs E4, and the lever A9, in combination with any suitable devices for actuating the lever. 5th. The shell of a padlock having an inner rim or shell M with a space N between the two, substantially as described.

No. 17,986. Holders for Knives, Pencils, Penholders, etc. (Manches de couteaux, porte-crayons, porte plumes, etc.)

Henry Berolzheimer, (assignee of C. W. Bowman,) New York, N. Y., U. S., 26th October, 1883; 5 years.

Claim.—1st. In combination, the following elements, first, the case or handle, second, the knife or other analogous article having a shank or tang, third, the spring controlled mechanism, fourth, the spring controlled longitudinally, movable pressure caps, and fifth, the device for preventing the tang and the knife, or other analogous article, from dropping out of the handle, these parts being constructed and operating substantially in the manner and for the purposes described. 2nd. In combination with a spring, controlled locking mechanism, and a longitudinally movable pressure cap, a knife or analogous article having a tang, the device for preventing the article from dropping out of the handle, and a tube projecting beyond the locking device, in which a part of the tang fits and is supported, intending to claim none of these elements separately, but only the combination of all of them, substantially in the manner described.

No. 17,987. Parallel Vise. (Etau parallèle.)

Henry F. Read, Brooklyn, N. Y., U. S., 26th October, 1883; 5 years.

Claim.—1st. The combination in a vise, of the screw *f*, having the unthreaded cylindrical end *i*, the fixed rack *e*, and the sliding rack-nut *g*, formed with end inclines *p* *r*, with a sliding locking device *i*1, having a concave end *i*2, adapted to slide over the end *i* of the screw, a spring *j* for projecting said sliding locking device, a spring bearing *m*, for the sliding rack-nut and the fixed inclines *h*1 *h*2, substantially as described for the purpose specified. 2nd. The combination in a vise, of a screw having the unthreaded end *i*, the fixed rack *e*, the sliding rack-nut *g*, formed with end inclines *p* *r*, and its bearing spring *m*, with the sliding locking device *i*1, having a concave end *i*2, adapted to slide over the end *i* of the screw, and a fixed guide-box *h* for said stem having end inclines *h*1 *h*2, and a spring *j* for projecting said sliding locking device, substantially as described for the purpose specified. 3rd. The combination, in a vise, of the screw having the unthreaded cylindrical end *i*, the fixed rack *e*, and the sliding rack-nut *g*, having the end inclines *p* *r*, with the sliding locking device *i*1, having a concave end *i*2, adapted to slide over the end *i* of the screw, the fixed inclines *h*1 *h*2, the springs *m* and *j*, and a plate-slide *n*, arranged to be projected in position under the sliding rack-nut to hold it out of engagement with the fixed rack in the operation of separating the inclines for the purpose specified. 4th. In combination in a parallel vise, the fixed rack *e*, the sliding rack-nut *g*, having the end inclines *p* *r*, the screw having the unthreaded cylindrical end *i*, the plate spring *m*, the fixed guide-box *h*, the sliding plate-slide *n*, fitted within said fixed box, and its spring *j*, all constructed and arranged for co-operation, substantially as described for the purposes specified. 5th. The combination in a vise, of the base-plate A, having the central rimmed projection B, and the surrounding annular way E, and the fixed jaw-part having the central hub projection D, with the square-headed bolts F F, and the jointed lever nuts G G, adapted to receive said screw-bolts, substantially as described for the purpose specified. 6th. In a swivelling vise, the fixed jaw-part having the bottom hub projection D, and the top recessed seats or sockets around the bolt-heads, in combination with the screw-bolts F F, the cylindrical nuts G G, the levers G1, jointed to said nuts and the base-plate A, having the top central rimmed projection B and the annular way E, all constructed and adapted for use, substantially as described for the purpose specified.

No. 17,988. Wheels for Potato Diggers.*(Roues aux arrache patates.)*

William McKenzie, Mount Herbert, P. E. I., 26th October, 1883; 5 years.

Claim.—The bevelling of the tire or rim and faces of the catches on the wheel of a potato-digger as represented in the accompanying drawings, figures A B and C, substantially as and for the purpose set forth.

No. 17,989. Treatment of Fish and other Animal Offal for the Production of Guano. (Manière de faire du guano de poisson et de viandes de rebut.)

Maximilian Zingler, Belize Park, Eng., 26th October, 1883; 5 years.

Claim.—1st. The described process for the treatment of fish and other animal offal, which consists in first soaking the material in a

solution of alum, ammoniac, and borax, then adding crude turpentine and tannin to the mass, then boiling the whole to pulp and finally pressing out the liquor and drying the residuum. 2nd. The process for separate treatment of fish bones, which consists in first boiling in water and turpentine emulating by treatment with a tannic solution, bleaching with tartar emetic, washing, again, dissolving and finally drying.

No. 17,990. Railway Switch.

(*Aiguillère des railroutes.*)

Martin O'Grady, Toronto, Ont., 26th October, 1883; 5 years.

Claim.—1st. In a railway switch, constructed with one or more shifts, the combination of an auxiliary safety switch-lock composed of sliding bars or tongues with pins by which they are moved into and lock in apertures in an iron bar in front of the main block and below the stationary rails of the switch and operated by any suitable mechanism for this purpose. 2nd. In a railway switch, constructed with one or more shifts, an auxiliary safety switch lock composed of the tongues B B, with pins *b b*, the cross bars P P, constructed with apertures *p* in which the tongues slide in order to lock into the apertures B in front of the main block B, the eccentrics *c c*, as secured on shaft D, with a universal coupling F, and squared portion *d*, and journal plates D, the boss head *h*, the lever E and stop *e*, the whole arranged and operating in combination, substantially as and for the purpose specified.

No. 17,991. Carriage Jack. (*Cric à voiture.*)

Andrew J. Church, Sherborn, Mass., U. S., 26th October, 1883; 5 years.

Claim.—1st. The improved carriage-jack described, the same consisting of the base A, standards B B, sliding bar E, pitman G, lever C, serrated retaining bar D, stop-pin *a*, pivots *h r* and guide-pins *f f*, constructed, combined and arranged to operate substantially as set forth. 2nd. In a carriage-jack, substantially such as described, the serrated bar D, and pin *a*, in combination with the lever C, arranged to operate substantially as and for the purpose specified. 3rd. In a carriage-jack, substantially such as described, in combination with the lever, a retaining bar or device for locking said lever when it is depressed, said bar or device and lever being adapted to be grasped at the same time and operated by one hand to unlock the lever and permit it to rise and the wheel to fall, substantially as set forth.

No. 17,992. Stock Car. (*Char à bestiaux.*)

George D. Burton, Boston, Mass., U. S., 26th October, 1883; 5 years.

Claim.—1st. A stock car having a trough L, placed under the center door way E of the car, with a pipe leading from the outer edge of the trough, substantially as described and for the purpose set forth. 2nd. A stock car having raised inclined floors with grooves M, substantially as described and for the purpose set forth. 3rd. A stock car having stanchions C, with levers *h*, pivoted on the cross-beam *t*, one end of the said levers moving in a slot *r* in one of the stanchions, in combination with the chains *m*, attached to the key-bar *m*, of said stanchions and the roof of the car, and the doors *p p*, substantially as described, and as for the purpose set forth. 4th. A cattle stanchion, consisting of a fixed upright combined with a movable upright having a lateral movement at both ends relative to the said fixed upright, and a locking device therefor, and a supporting-beam provided with a series of notches co-operating with the said locking device, substantially as described.

No. 17,993. Pitman Connections for Mowers. (*Bielle de raccordement pour machine à faucher.*)

William Gause and John H. Bass, Fort Wayne, Ind., U. S., 26th October, 1883; 5 years.

Claim.—1st. The short bifurcated pitman, in combination with the friction roller and the knife-head, or the equivalent thereof, connected with said pitman, substantially as and for the purposes described. 2nd. The combination with the crank shaft of the pitman, the grooved friction roller connected with said pitman by a pin or pivot arranged about in the same horizontal plane, with the end of the actuating crank-shaft with which it is connected by said pitman and a fixed track or way for said roller, substantially as described. 3rd. The combination, with the crank shaft, of the short bifurcated pitman, the grooved friction roller, the fixed rail or track for said grooved roller, the knife-head, or the equivalent thereof, connected with said pitman and friction roller, and provided with the heel extension serving in connection with a lip, or the guide-rail plate, to guide and steady the movement of the knife-head, all substantially as described. 4th. The short bifurcated pitman, provided with the hemispherical half socket, in combination with the adjustable half-socket connected therewith and the staple bolt or screws for adjusting the same, substantially as described.

No. 17,994. Horse Hay Rake.

(*Râteau à cheval.*)

The Hoosier Drill Company, (Assignee of John McMahon, Westcott, and A. C. Conner,) Richmond, Ind., U. S. 26th October, 1883; 5 years.

Claim.—1st. A lifting device for dumping a horse rake composed essentially of the bell crank lever hinged to the tilting rake-head and pivoted to a travelling lever fulcrum meshing with the teeth of the segmental rack, said members being combined to operate, substantially as described. 2nd. A lifting device for a horse rake composed essentially of the bell crank lever hinged to the tilting rake-head and pivoted to a travelling lever fulcrum working in the arc of a circle, substantially as described. 3rd. A dumping device for a horse rake, composed of a combined hand and foot lever connected by means of a link to the rake-head and pivoted to a travelling lever fulcrum meshing with the teeth of the segmental rack, said members being

combined for operating, substantially as described. 4th. In a horse rake, the combination with the frame E, and the bell crank lever connected with the rake-head, and having at its forward end the serrations *a*, of the serrated plate V attached to the serrated part of the lever and provided with the foot piece *d*, and slot *c*, and the connecting bolt, substantially as set forth.

No. 17,995. Washing Machine. (*Laveuse.*)

William Park and John S. Parker, Fredonia N. Y., U. S., 26th October, 1883; 5 years.

Claim.—An article of manufacture, a washing machine consisting essentially of an oblong basin A, having partitions A¹ A², and head B, and a handle C, with handle frame D, said frame being provided with socket E, brace F, valve casings *i*, lugs *g*, ducts G, and central valve casing *h*, each of the said casings being fitted with a valve I, and escape passages *g*, the whole being constructed, and arranged for operation, substantially as and for the object stated.

No. 17,996. Hot Water or Steam Radiator. (*Calorifère.*)

Lewis S. Daniels, Yarmouth, N. S., 26th October, 1883; 5 years.

Claim.—1st. The radiator described, consisting of the vertical columns B and G, the hollow horizontal heating pipes A A² or more having within a steam or water passage in the form as shown in Fig. 3, the internal return D, the diaphragm C, the supply I through the foot J, and the return K through the foot J, substantially as and for the purpose set forth. 2nd. The vertical column B, with the internal return D, and diaphragm C, to be used for the seat of valve H, and as and for the purpose set forth. 3rd. The internal return D in the column B in combination with the horizontal heating pipes A¹ and A², and connecting nipples *a* and *a*, substantially as and for the purposes set forth. 4th. The diaphragm C in the column B to be used for the seat of the valve H, as shown in Fig. 3 5th. The sectional form of the horizontal heating pipe, as set forth. 6th. The use of the column G, in combination with, and used to support the ends and bosses *b b b* of the horizontal heating pipes A A², and to conceal the return bend E, the side outlet return bend F, the return K through the foot J, substantially as and for the purposes set forth. 7th. The making the feet J and J¹, in sections to allow of the connections with the boiler to be made through the foot J at the supply I, and through the foot J¹ at the return K, substantially as and for the purposes set forth.

No. 17,997. Mechanical Telephone Exchange. (*Système d'échange mécanique aux téléphones.*)

George F. Shaver, New York, N. Y., U. S., 26th October, 1883; 5 years.

Claim.—1st. In a system of mechanical telephone lines, the combination with a series of converging lines at the point of convergence thereof, of the following elements: a series of telephones which are severally connected with the said several converging wires and are provided with means, substantially as shown, for connecting therewith an extension line, an angle hanger located centrally with relation to said converging lines and their attached telephones, and finally the lines *x* and *y*, for connecting two of said telephones together through said angle hanger, substantially as and for the purposes set forth. 2nd. In a system of mechanical telephone lines, the combination with a series of converging lines at the point of convergence, of an angle hanger located centrally with relation to said line termini, which is provided with branch lines *x* and *y* which can be attached and detached from any of said line termini, and thereby form a circuit with any two of said lines, substantially as and for the purposes set forth. 3rd. A universal angle hanger for use as a switch board for a system of mechanical telephone lines, which consists of a hoop A, guys E, and ring D, arranged together, substantially as and for the purposes set forth. 4th. In a system of mechanical telephone lines, the combination of a universal angle hanger constructed, substantially as shown, and mounted in a frame with means, substantially as shown, for securing the same at various points within said frame, for the purpose of drawing the connected lines, as set forth.

No. 17,998. Apparatus for Utilizing the Power of Flowing Water in Rivers. (*Appareil pour utiliser la force de l'eau courante des rivières.*)

Nicholas Yagn, St. Petersburg, Russia, 26th October, 1883; 5 years.

Claim.—1st. The combination of stationary or floating pulleys or drums placed independently and at a variable distance from each other, with one or more flexible ropes or bands led around the said pulleys or drums, which ropes or bands are provided on their whole length at convenient intervals with collapsing buckets which according to their position with relation to the direction of the stream are distended or collapsed by the action of the current, all constructed and arranged to operate, substantially as described. 2nd. The buckets above mentioned, made by preference of a soft or flexible material (such as sail-cloth), in the form of parachutes through the centre of which is passed the endless rope of the hydrometer and which by staying-cords fastened to the edge of the parachutes and to the rope, are prevented from turning over when they are distended by the action of current of flowing water and collapse when the heads are directed against the stream, substantially as described. 3rd. The combination of the endless rope provided with parachutes or buckets, with pulleys or drums arranged independently round which the said rope is led, and which whether stationary or floating are connected only by this rope, substantially as described. 4th. The combination of the endless parachute rope of the hydrometer with a floating steering device consisting of a framing, carrying a pulley to support the loop of the parachute rope, and rollers for guiding the said rope, which framing being provided with a float and a weight can be placed at any desired depth of water, and is provided with a single parachute

rope, bearing at its extremity a flat vertical rudder which can be placed at any angle to the direction of the parachute rope in order to keep the stretched parachute rope at a more or less acute angle to the direction of current, substantially as described. 5th. The combination of the endless parachute rope, provided with the steering device, with stationary or floating power transmitting mechanism of any suitable construction. 6th. Pulleys or drums placed or arranged in stationary structures or on floating vessels in lieu of the tension and steering device described, whereby power is obtained by the parachute hydromotor at the same time from both its extremities and transmitted by means of suitable mechanism to any desired point. 7th. The use of one or more pulleys or drums arranged independently of each other between the two extremities of the said rope round which pulleys or drums the endless parachute rope passes, for the purpose specified. 8th. The rope friction mechanism, in combination with the endless parachute rope, and mechanism for transmitting power, all constructed and arranged to operate, substantially as described.

No. 17,999. Broom Band. (*Courroie de balai.*)

James Smith, Boston, Mass., U. S., 26th October, 1883: 5 years.

Claim.—1st. The improved broom band described, the same consisting of the elastic strip C, non-elastic strap D, flexible straps E, and holders G, constructed, combined and arranged to operate, substantially as set forth. 2nd. In a broom band, substantially such as described, the wire-holder G having the inwardly-projecting hook K at its upper end, and the loop H and inwardly-projecting stud J, at its lower end, substantially as shown. 3rd. In a broom band, substantially such as described, an elastic strap and a non-elastic strap connected by side straps, in combination with means for detachably connecting them to the broom, substantially as set forth.

No. 18,000. Thrashing and Separating Machines. (*Batteuse-vaneuse.*)

Peter Kaufmann, Normal Township, Ill., U. S., 26th October, 1883: 5 years.

Claim.—1st. In a thrasher and separator, the combination, with the thrashing cylinder and concave, of the hinged frame C₁, the platform or foot-board C₁₁, the frame C₂, hinged feed tables C₁₂, and mechanism for securing them in a lowered or elevated position, substantially as and for the purpose specified. 2nd. In a thrasher and separator, the combination with the thrashing cylinder and concave, of the hinged frames C₁ C₂, connecting-links C₃ C₄, stationary and hinged floors C₁ C₁₂, and mechanism for securing said floors in a lowered or elevated position, substantially as and for the purpose specified. 3rd. In a thrasher and separator, the combination of the machine-casing, tailings, conveyers arranged upon opposite sides of the machine casing and inside thereof, and a thrashing cylinder constructed with the bands at each end, and the flanges arranged a short distance from the ends of said cylinder, substantially as and for the purpose specified. 4th. In a thrasher and separator, the combination of the machine casing tailings, conveyers arranged upon opposite sides of the machine casing and inside thereof, and a thrashing cylinder constructed with the bands at each end, and the corrugated flanges arranged a short distance from the ends of said cylinder, substantially as and for the purpose specified. 5th. In a thrasher and separator, the combination with the concave bottom, of the brackets G₁, provided with the annular arms G₄ G₅, and the frame-timbers A₅ A₆ meeting each other at an angle, substantially as and for the purpose specified. 6th. In a thrasher and separator, the combination of the bracket d, constructed with bearing-boxes d₃, extended lower part d₁ and bolt holes d₂, the cylinder shaft R, bracket V constructed with boxes d₄, extended lower portion and bolt holes d₅, the concave floor and the cross-rod d₄, substantially as and for the purpose specified. 7th. In a thrasher and separator, the combination of the cylinder extension C₇, cylinder shaft R₂, cylinder G, pinion R₁ on cylinder shaft R₂, inside of the extension G₇, the wheel R projecting through the machine-case A and meshing in gear with pinion R₁ inside of the cylinder extension G₇, and a suitable shield for said gearing connected to the machine-case, substantially as and for the purpose specified. 8th. In a thrasher and separator, the combination, with the cylinder G, constructed as described, and journal boxes d₃ d₅, of bracket bearings d and v, having on their upper ends projections and the set screws to prevent the boxes d₃ d₅ from slipping, as shown and described. 9th. In a thrasher and separator, the combination, with the cylinder and concave, the timber base A₄ and bracket bearings d and v, of the cylinder boxes d₃ d₅ bolted laterally thereto, supporting set screws for said boxes, the concave brackets G₆ formed with projecting bolt-arms G₄ G₅, and frame timber A₅ A₆ secured to brackets d and v, forming a combined frame support for the cylinder and concave, substantially as herein shown and described. 10th. In a thrasher and separator, the combination of the casing, two inside elevators, inside frame-timbers e and A₅ A₅, flanges G₂, the cylinder and concave arranged with their ends in the space between the elevator bands G₇, grain and straw carriers H and H₁, and the two shoes K and K₁, all arranged and constructed, substantially as herein shown and described. 11th. In a thrasher and separator, the combination, with the grain belt or carrier H₁ and the top shoe K, of the floor H₂, of the grain belt or carrier, said floor having the horizontal part H₄ extending backward under the front end of said top shoe, substantially as specified. 12th. In a thrasher and separator, the combination of the endless straw-carrier H₁, sprocket drier H₅ and oval sprocket chain beaters H₇ H₈ and H₉, the top chains being alternately accelerated and retarded by means of the oval sprocket-beater or wheel H₆ in rear of the sprocket-driver H₅, whereby the upper carrier H₁ becomes stretched and slacked twice with each revolution of the oval sprocket beater or wheel A₉, substantially as and for the purpose herein shown and described. 13th. In a thrasher and separator, the combination with the concave floor G₃ and the shoe K, of carrier belt H, the floor H₆ arranged inside of said carrier and constructed with a series of slats H₅ with openings between them, the bottom floor H₂ having its lower curved end connected with the concave floor G₃, and its upper end projecting backward under said shoe K, substantially as and for the purpose specified. 14th. In a thrasher and separator, the thrashing-cylinder G constructed with the bands G₇ at each end thereof, and the flanges G₂ arranged near the end thereof, and corrugated

upon their opposite sides, in combination with a toothed concave extending the entire width of the machine, substantially as and for the purpose specified. 15th. In a thrasher and separator, the combination with the cylinder G, the concave floor G₃, brackets G₆, having annular projecting bolt arms, and the brackets for connecting and supporting the cylinder and concave, substantially as and for the purpose specified. 16th. In a thrasher and separator, in combination with the cylinder G, the concave floor G₃, brackets G₆, the timber base A₇ and the bracket bearings d and v, forming a frame support for the cylinder, substantially as and for the purpose herein shown and specified. 17th. In a thrasher and separator, the combination of the casing, the thrashing cylinder, the stationary-inside inclined conveyer boxes e₁ extending from the lower rear end to the upper front end of the machine and the carrier belts, the upper ends of said boxes being provided with spouts e₂ for discharging the tailings on to the end of the cylinder, as shown and described. 18th. In a thrasher and separator, the elevator mechanism consisting of the endless chains, the open-spoked sprocket-wheels and guide sheave-wheels, the sprockets of the wheels J₂ extending through the chain a short distance into the guide sheave-wheel J₃, and the projections j on the chains adapted to extend towards the hub of each wheel J₂ in between the sprockets in the openings a, substantially as and for the purpose specified. 19th. In a thrasher and separator, the elevator chains provided with projections j at suitable intervals, in combination with the open spoked sprocket wheels, the beater and crank shaft E₇, the guide sheave wheels J₃ and stud bearings for said wheels fastened to machine-case, substantially as described. 20th. In a thrasher and separator, the combination of the beater and crank shaft E, means for actuating the same, and sprocket wheels mounted on said shaft for the actuating of the elevator chains, whereby motion is communicated to the elevator chains J, substantially as shown and described. 21st. In a thrasher and separator, the combination of the machine-casing, the conductors e₂ extending to the front end of the machine-casing A, the cylinder flanged heads G₂ and extensions G₇, the machine-casing forming the outsides of the conductors e₂, substantially as shown and described. 22nd. In a thrasher and separator, the combination, with the thrashing cylinder concave G₃ and shoe K, of carrier belt H and the bottom floor H₂, having its lower curved end connected with the concave G₃ and the upper end of said concave projecting backward under said shoe K, substantially as and for the purpose specified. 23rd. In a thrasher and separator, the combination, with the straw-carrier H, of the straw-pitching device consisting of the forks I, the shaft I₁, the arms m₁ and links m₂ m₃, as and for the purpose specified. 24th. In a thrasher and separator, the combination, with the straw-carrier H, of the straw-pitching device consisting of the forks I and the shaft I₁, the arm m and the link m₂ and m₃, the shaft a₄ with crank E₅, the rod E₂ and crank wheel E, the several parts arranged to operate, substantially in the manner as shown and described. 25th. In a thrasher and separator, the combination of the frame and casing thereof with the jointed stacker connected to the machine and adapted to be folded inside of the casing thereof, substantially as shown and described. 26th. In a thrasher and separator, the combination of the frame and casing thereof, of the jointed stacker connected to the machine and constructed with the adjustable section C₁₀, said jointed stacker adapted to be folded inside of the machine, as shown and described. 27th. In a thrasher and separator, the combination, with the frame and casing thereof, of the jointed stacker connected with the machine and constructed with the adjustable section C₁₀, said jointed stacker adapted to be folded inside of the machine, and a pair of doors c and c₁, adapted to close the ends tightly when the machine is not in operation and when opened to form side-boards to prevent the wind from blowing the straw in passing over the stacker, substantially as shown and described. 28th. In a grain separator, the combination of the longitudinally shaking spouts O₂ O₅, the rocking bars P₃ P₄, the spouts O₁, the rods y₄, the arms y₃, the vertical rocking shaft Q, the arm y and the link y₁, substantially as shown and described. 29th. In a grain separator, the combination of the lower shoe K₁, having two parallel floors K₃ K₅ with a wind space between the collecting spout O at the rear end of the floor K₅, formed with a center discharge and inclined central spout O₁, substantially as and for the purpose specified. 30th. In a grain separator, the grain spout O₂ and tailings spout O₅, in combination with the stacker and inclined central discharge spout O₁, the tailings spout being above the latter and under the end of the section e of the stacker, substantially as and for the purpose specified. 31st. In a thrasher and separator, the combination of the casing, the adjustable stacker frame pivoted within the casing and the rear end of the straw-carrier H₁, adjustable to make room for the section of the stacker adapted to be folded inside of the casing, the straw-carrier H₁ and the upper end of the stacker being coupled together, substantially as and for the purpose described. 32nd. In a thrasher and separator, the combination, with the casing of the machine, of the hinged feed-table frame C₂ and the folding floor C₁₂, adapted to close the front end of the machine when not in operation, substantially as and for the purpose specified.

No. 18,001. Railway Car.

(*Wagon de railroute.*)

Charles S. Smith, Bath on the Hudson, N. Y., U. S., 31st October, 1883: 5 years.

Claim.—1st. In cars, the pivoted stairs secured to the bottom of cars, and revolving on a curved guide-rail so as to be moved outward or inward, as shown and for the purpose set forth. 2nd. The combination of the pivoted stairs revolving on a curved guide-rail, with a pivoted hand-rail arranged, substantially as described. 3rd. The combination of the pivoted stairs E, the curved guide rail a, pivoted hand rail c, and lever l, all arranged substantially as and for the purpose herein specified. 4th. The combination of the pivoted stairs E, having recess b, to fit over the curved guide rail a, and the stops f and g, as shown and for the purpose set forth. 5th. In cars, the combination of the pivoted stairs E, having recess b, the curved guide-rail a, and stops f and g, with the inclined or angled doors B C, arranged substantially as shown and specified. 6th. In cars, the doors B C, arranged at an angle of about forty five degrees, in the corners of the car, in combination with the revolving stairs E, substantially as set forth.

No. 18,002. Adjustable Hood for Car Platforms. (*Bâche automatique pour wagons de railroutes.*)

Charles S. Smith, Bath on the Hudson, New York, U.S., 31st October, 1883; 5 years.

Claim.—1st. In combination with ends of cars, the adjustable hoods E Et, made of flexible material supported on a suitable frame-work, and provided with doors in their ends, substantially as shown and set forth. 2nd. In combination with the ends of cars, the adjustable hoods E Et made of flexible material supported on suitable frame-work, and provided with an auxiliary hood F, pivoted to one of the main hoods, substantially as shown and described. 3rd. In combination with the ends of cars, the adjustable hoods E Et, made of flexible material secured to a suitable frame work, and provided with end doors *g g*, and auxiliary hood F, all arranged substantially as specified. 4th. In combination with ends of cars having doors C D, the adjustable hoods E Et, made of flexible material, secured to a suitable frame work *b*, and provided with doors *g g*, in their ends, and an auxiliary hood F, all arranged substantially as shown and specified.

No. 18,003. Horse Shoe. (*Fer à cheval.*)

Erastus A. Carroll, Bloomfield, New York, U.S., 27th October, 1883; 5 years.

Claim.—1st. A calk for horse shoes having the vertical polygonal portion F forming a nut face, the reception of a wrench, a pointed portion B extending from the vertical walls F, outward a shoulder C, hemispherical or convex in form, and a threaded shank D, all for the purpose and substantially as described. 2nd. The combination, with a horse shoe, of a pointed calk having a rounded shoulder adapted to fit into and fill a corresponding counter sink in said shoe, a threaded shank upon said rounded shoulder screwing into said shoe and vertical polygonal sides for the application of a wrench, all substantially as and for the purpose described. 3rd. The combination, with a horse shoe, of a calk screwing into said shoe, a perforated screw-shank adapted to receive a horizontal pin or clinch nail, and a pin or clinch nail penetrating the shoe and shank, substantially as and for the purpose described.

No. 18,004. Process for Extracting Metals from their Ores. (*Procédé pour extraire les métaux de leurs minerais*)

Albert D. Ancel and Jean Marie A. Thiollier, Paris, France, 27th October, 1883; 5 years.

Claim.—1st. The hereinbefore described process of treating metalliferous ore by electricity, for the purpose of extracting the metals therefrom, using the ore itself as a soluble electrode, and immersing it in a reducing electric bath under the conditions described. 2nd. In the hereinbefore described treatment of metalliferous ores, the employment of electrodes such as electrodes composed of agglomerated plumbago or other analogous materials, proof against the action of the chemical agents. 3rd. In the hereinbefore described treatment of metalliferous ores, the employment of basic electric baths in the manner and for the purpose indicated. 4th. In the hereinbefore described process, the employment of the apparatus enabling the whole mass of ore to constitute a soluble positive or negative electrode without the necessity for the intervention of mechanical agitation, substantially as hereinbefore described and illustrated in the accompanying drawings. 5th. Each separately and distinctly the several various modifications of the hereinbefore described process to render it applicable for the treatment of various or particular metalliferous ores, all substantially as hereinfore described.

No. 18,005. Sulky Harrow. (*Herse à siège.*)

Thomas G. Cook, Brockville, Ont., 27th October, 1883; 5 years.

Claim.—1st. In combination with the sulky frame A provided with a fixed draft bar E bracketed below the frame, the harrow sections H H, hingedly connected to said bar E by upwardly bent straps I, as described. 2nd. In a sulky harrow, the harrow constructed in two sections, each section independently hinged to a draft bar E bracketed under the sulky frame A by straps I I, whereby the line of draft will be in a direct line or nearly so from the horses neck to the teeth of the harrow sections. 3rd. The combination, with shaft N provided with lever P, of the quadrants M having a rearward arm U and projection W therefrom entering a gothic shaped slot T in bearings O carrying said shaft N, whereby the fulcrum of lever P is transferred from the shaft to the projection, from the arms of the quadrants for lifting the harrow sections from the ground by raising shaft N as set forth.

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

77. A. KERR. and L. SILVERMAN, 2nd 5 years of No. 9432, from 2nd day of December, 1883. Improvement on Valves and Spindles, 3rd October, 1883.
78. S. WHEELER, 2nd 5 years of No. 9230, from the 14th day of October, 1883. Article of Manufacture in Wrapping Paper, 8th October, 1883.
79. W. DAWSON, 2nd 5 years of No. 9296, from the 30th day of October, 1883. Feed Water Heaters, 8th October, 1883.
80. C. E. PATRIC, 2nd 5 years of No. 9276, from the 30th day of October, 1883. Spring Hoes for Grain Drills, 10th October, 1883.
81. E. DAVIES, 2nd and 3rd 5 years of No. 12,228, from the 18th day of January, 1886. Steam Engine Injectors, 10th October, 1883.
82. J. ROURK, 2nd 5 years of No. 2788, from the 10th day of October, 1883. Propulsion and Steering of Boats by Steam, 10th October, 1883.
83. E. H. J. METCALFE and E. DAVIES, 2nd and 3rd 5 years of No. 10,233, from the 14th day of July, 1884. Steam Engine Injector, 10th October, 1883.
84. T. N. KIRKHAM, et al., 2nd and 3rd 5 years of No. 9304, from the 30th day of October, 1883. Apparatus for Condensing, Washing, and Purifying Gas and other Vapors, 12th October, 1883.
85. D. K. HICKOK, 2nd 5 years of No. 9297, from the 13th day of October, 1883. Clothes Driers, 12th October, 1883.
86. T. A. EDISON, 3rd 5 years of No. 11,520, from the 19th day of July, 1890. Electric Lamps, 13th October, 1883.
87. T. A. EDISON, 3rd 5 years of No. 11,527, from the 21st day of July, 1890. Electric Systems for Light, Steam and Power, 13th October, 1883.
88. THE EDISON ELECTRIC LIGHT CO., 2nd and 3rd 5 years of No. 10,654, from the 17th day of November, 1884. Electric Lamps, 13th October, 1883.
89. THE EDISON ELECTRIC LIGHT CO., 2nd and 3rd 5 years of No. 10,791, from the 10th day of January, 1885. Electric Lamps 13th October, 1883.
90. THE EDISON ELECTRIC LIGHT CO., 2nd and 5 years of No. 10,931, from the 23th day of May, 1884. Method and Means for Developing Electric Currents and Lighting Electricity, 13th October, 1883.
91. J. SHUTTLEWORTH, 2nd 5 years of No. 9236, from the 14th day of October, 1883. Portable Fences, 13th October, 1883.
92. P. PUECH, 2nd 5 years of No. 9230, from the 19th day of October, 1883. Process for Treating the Wool upon the Skins, 13th October, 1883.
93. J. B. ARMSTRONG, 2nd and 3rd 5 years of No. 13,419, from the 17th day of September, 1886. Punching Metal Plates, 13th October, 1883.
94. S. R. BEAM, 2nd 5 years of No. 9284, from the 19th day of October, 1883. Portable Fence Posts, 13th October, 1883.
96. H. COLLARD, 2nd 5 years of No. 9241, from the 14th day of October, 1883. Wrought Iron Fences, Gates, Railing and Crestings, 13th October, 1883.
95. T. H. GIFFORD, et al., 2nd 5 years of No. 9225, from the 14th day of October, 1883. Boot and Shoe Sole Pressing Machine, 13th October, 1883.
97. The Guelph Carriage Goods, 2nd and 3rd 5 years of No. 16,784, from the 17th day of September, 1886. Vehicles, 13th October, 1883.
98. W. J. HAMILL, 2nd 5 years of No. 9273, from the 19th day of October, 1883. Trotting Sulkies, 19th October, 1883.
99. F. I. ROULEAU, 3rd 5 years of No. 2301, from the 19th day of October, 1883. Electro Iron Separation, 17th October, 1883.
100. T. A. EDISON, 2nd 5 years of No. 9282, from the 19th day of October, 1883. Phonographe, 17th October, 1883.
101. D. H. BURRELL, et al., 2nd 5 years of No. 9372, from the 22nd day of November, 1883. Hoop Machine, 22nd October, 1883.
102. L. COTE, 2nd and 3rd 5 years of No. 9286, from the 23rd day of October, 1883. Measuring Instruments, 22nd October, 1883.
103. H. J. SMITH, 2nd 5 years of No. 9511, from the 24th day of December, 1883. Magneto-Electric Machine, 25th October, 1883.
104. W. STITT, 2nd 5 years of No. 2962, from the 15th day of November, 1883. Attachment for Removing Scum, etc., from Steam Boilers, 30th October, 1883.

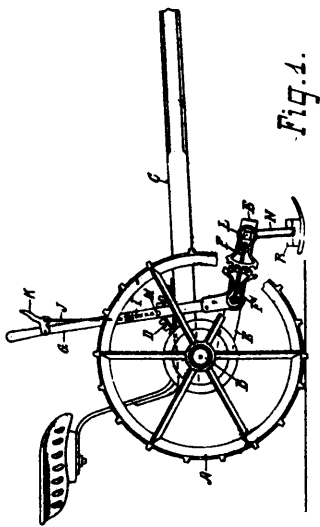
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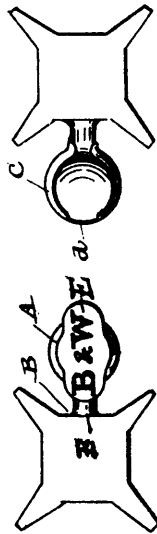
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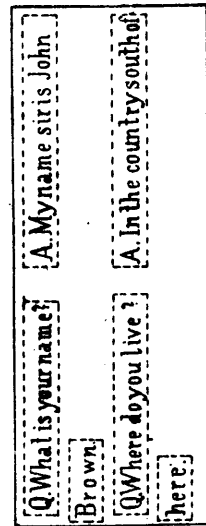
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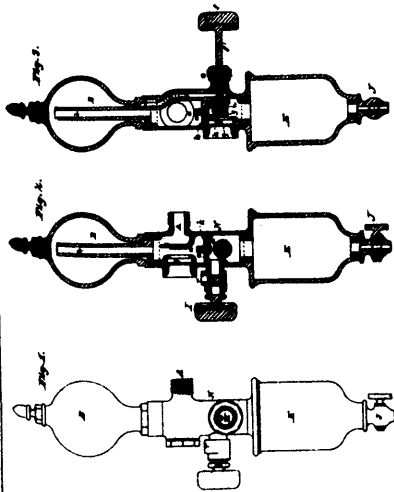
17787 Robtson's Mower Cutting Bar Tilter.



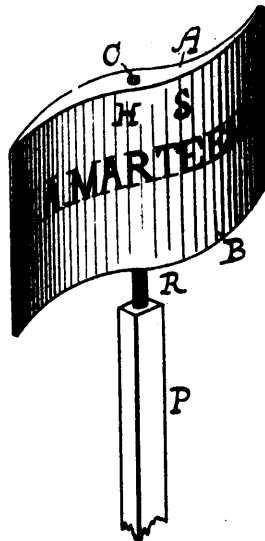
17788 Wild's Glove Fasteners.



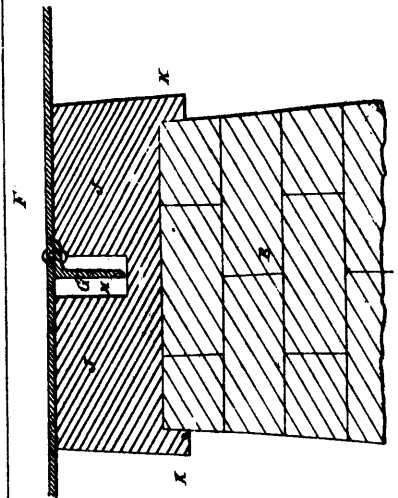
17789 Dement and Lane's Matrix Forms.



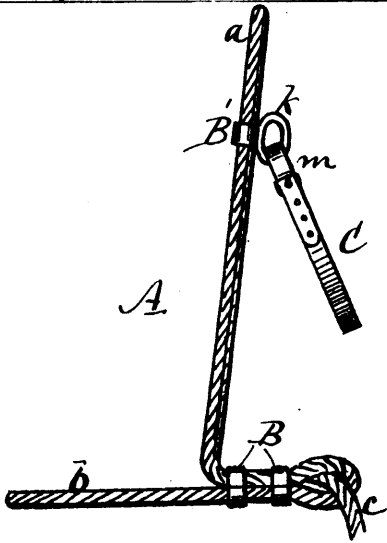
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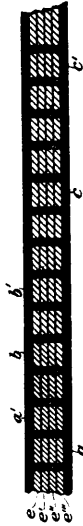
17791 Marteeny's Revolving Sign.



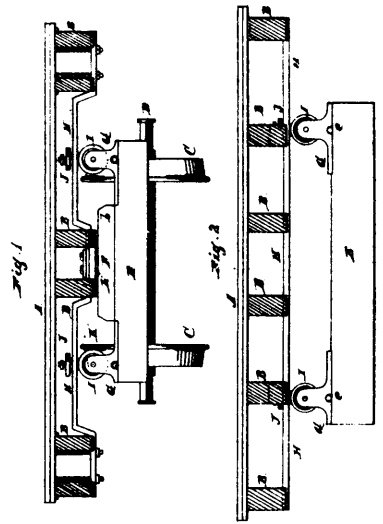
17792 Duncan's Evaporator.



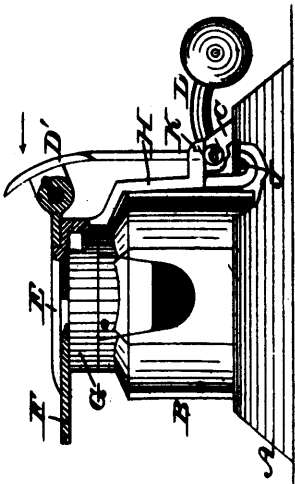
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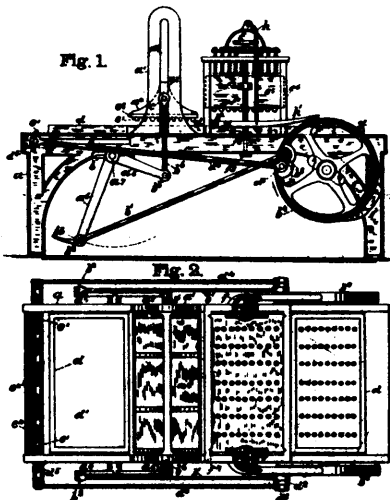
17784 Murphy's Manufacture of Belting.



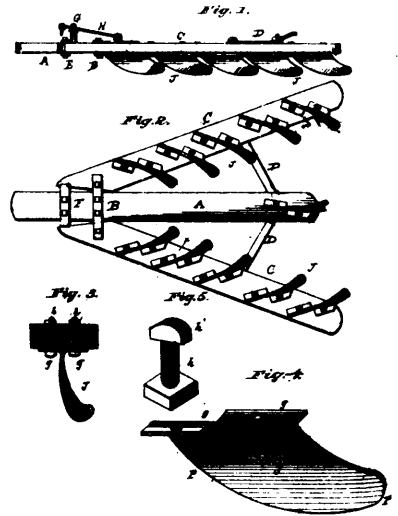
17795 Finlay's Truck.



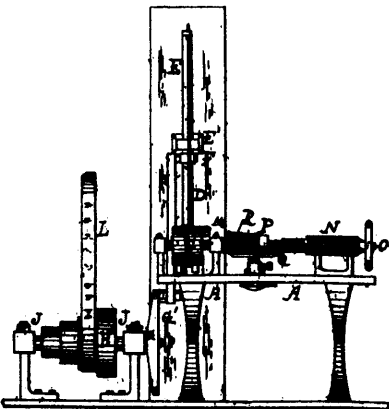
17796 Brooke's Inkstand.



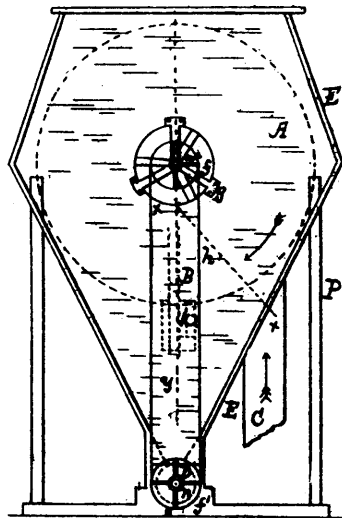
17797 Butted's Machine for Making Confections.



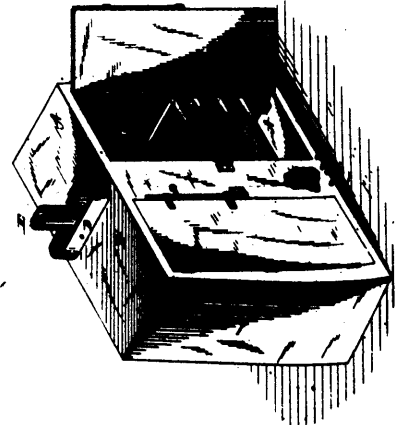
17798 Fillebrown's Cultivator Teeth.



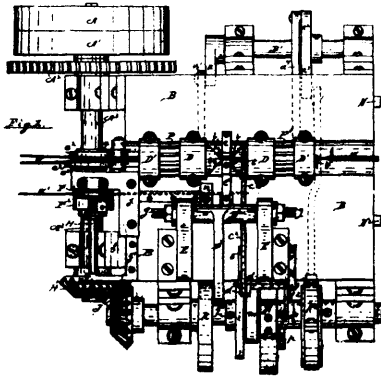
17799 Valentine and Biggin's Burnishing Machine.



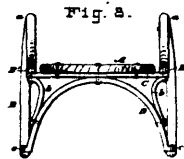
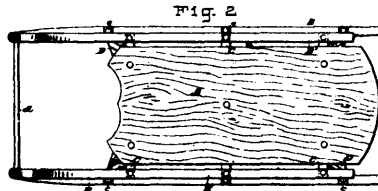
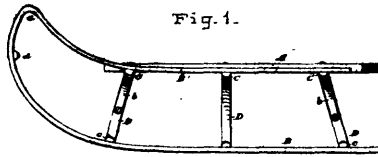
17800 Smith's Dust Collector for Flour Mills.



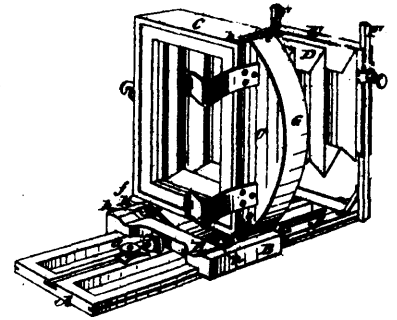
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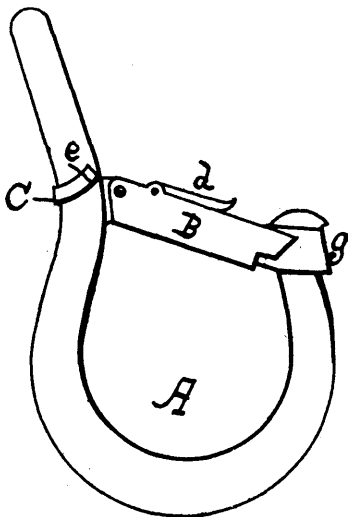
17802 Dillman and Knowlton's Machine for Making Barbed Wire.



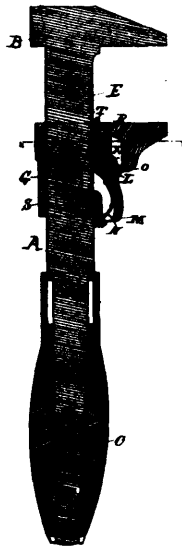
17803 Russel and Kimble's Sled.



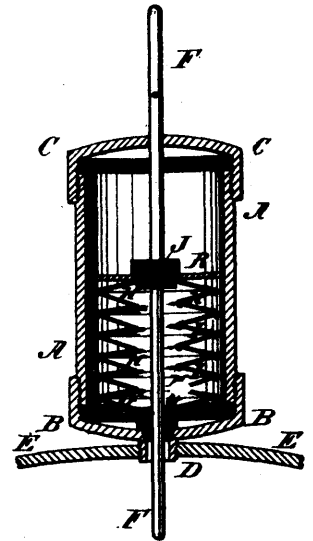
17804 Barker's Photographic Camera Box.



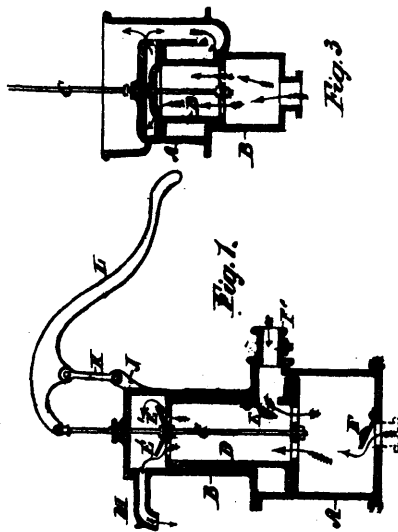
17805 Hammond and Page's Mousing Hook.



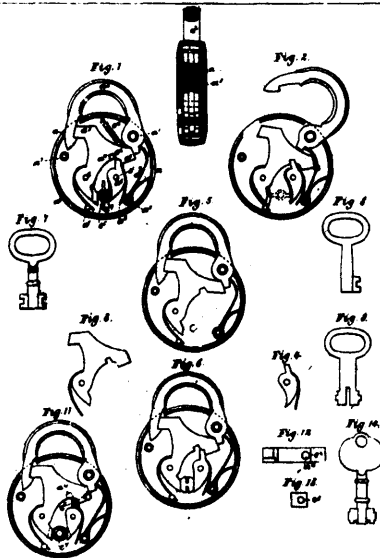
17806 Blomquist's Wrench.



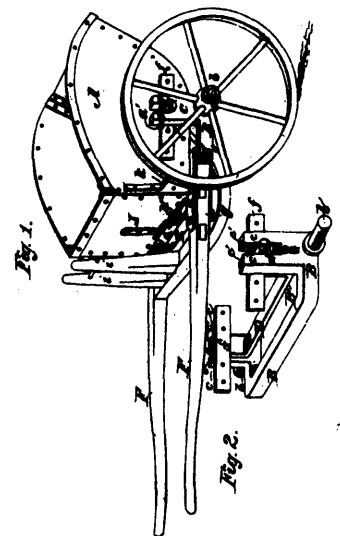
17807 Cumberbatch's Damper Regulators for Steam Boilers



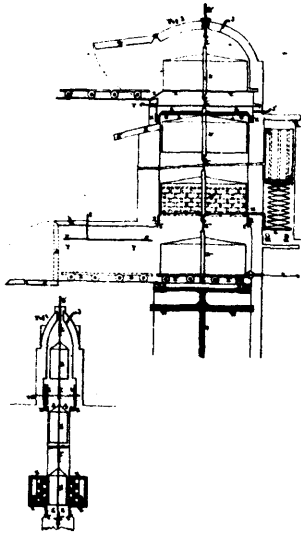
17808 Mumford's Pump.



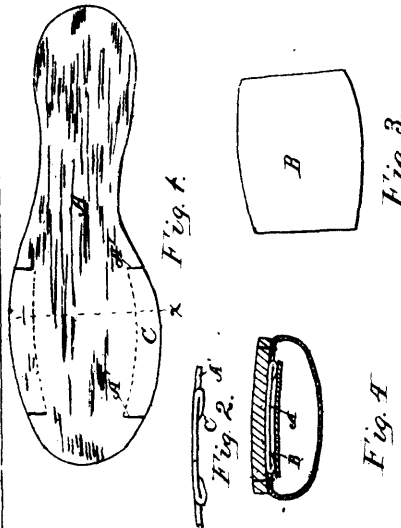
17809 Dickerman's Padlock.



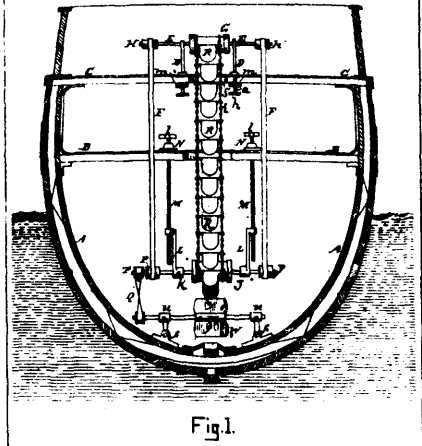
17810 Hill's Dumping Cart.



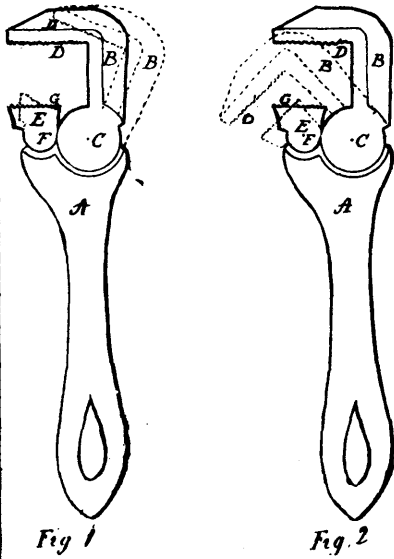
17811 Wurts' Apparatus for Dry Destructive Distillation.



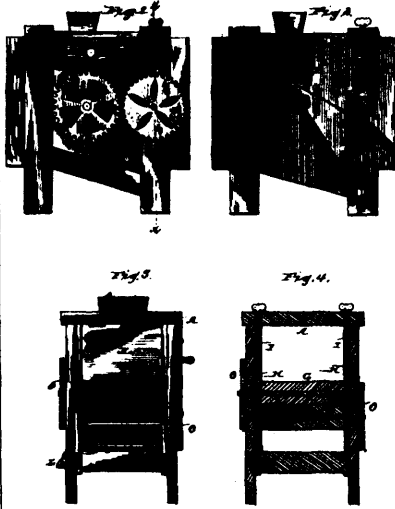
17812 Rogers' Shoe.



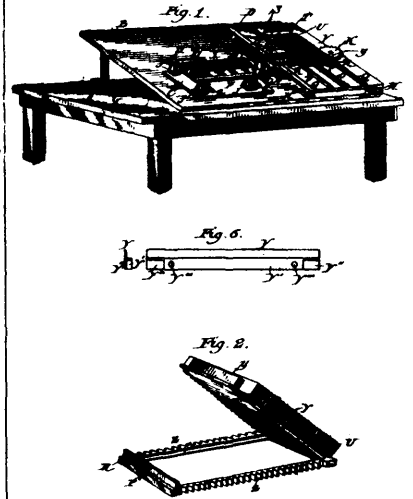
17813 Bardeen's Grain Elevator.



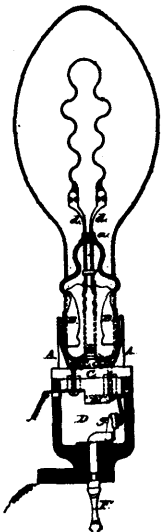
17814 Hoffman's Nut and Pipe Wrench.



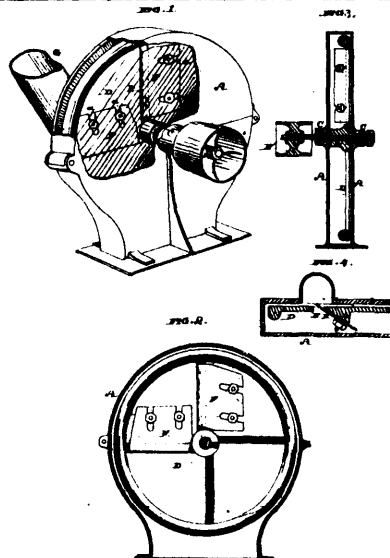
17815 Campbell's Wine and Cider Press.



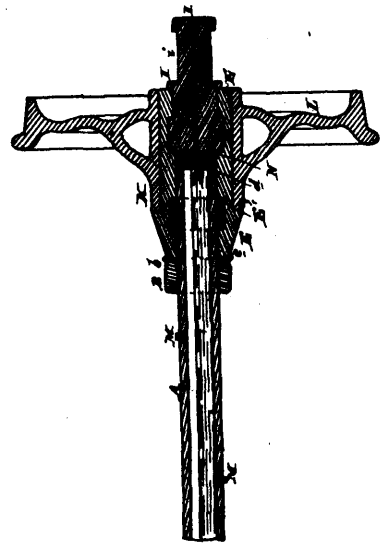
17816 Dement's Paging Machine.



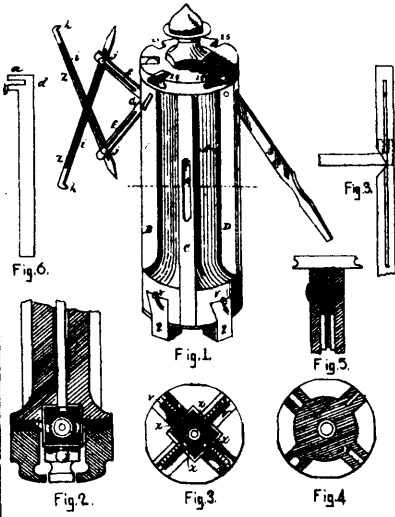
17817 Perkins' Switch for Incandescent Lamps.



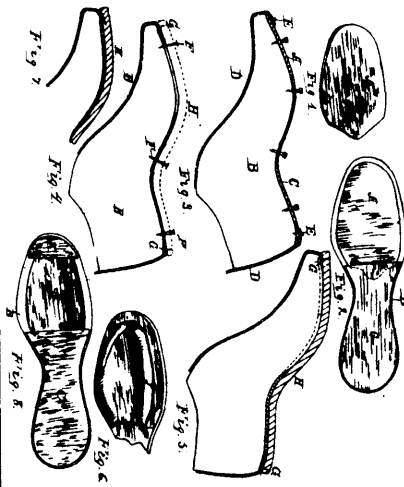
17818 Haggerty's Bark Cutting Machine.



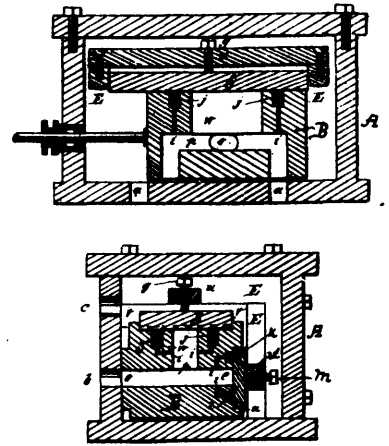
17819 Orne's Car Wheel Axle.



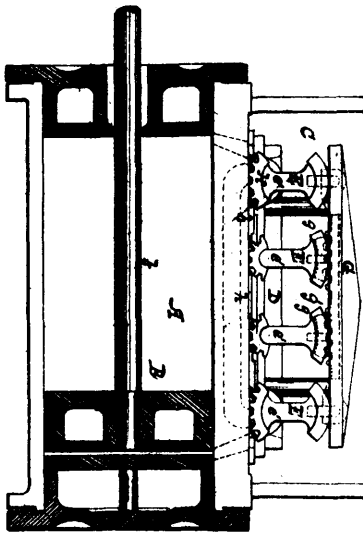
17820 Nelson's Combination Tools.



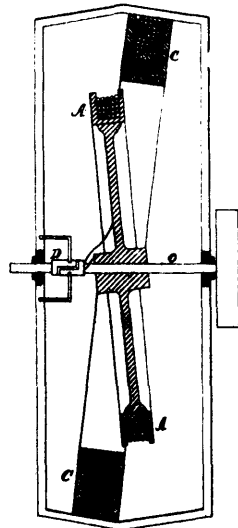
17821 Rogers' Shoe.



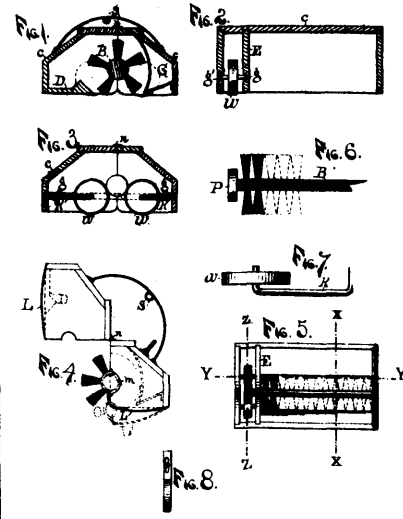
17892 Turman's Slide Valve for Gearing.



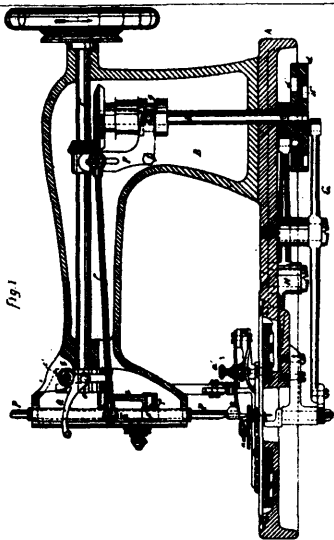
17823 Reaser's Balanced Slide Valve



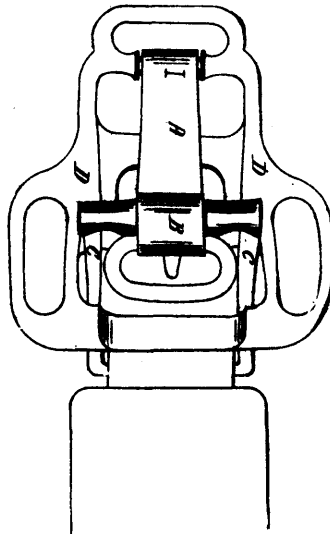
17825 Jablochkoff's Dynamo Electric Machine.



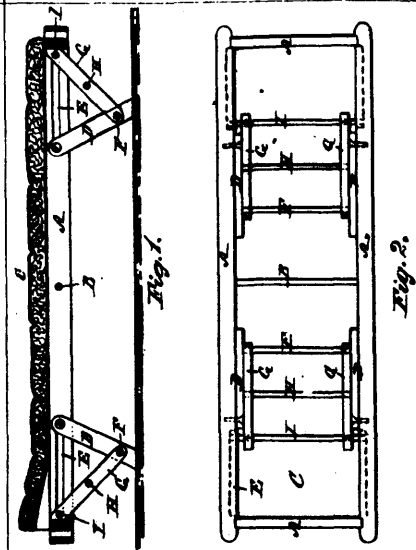
17827 Gates's Carpet Sweeper.



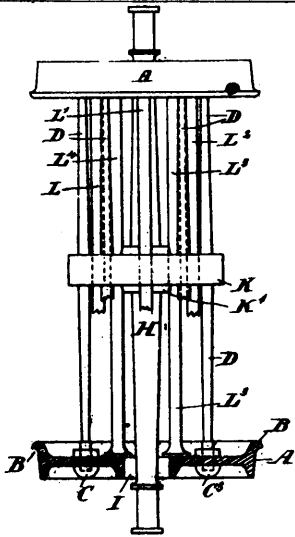
17828 Diehl's Sewing Machine.



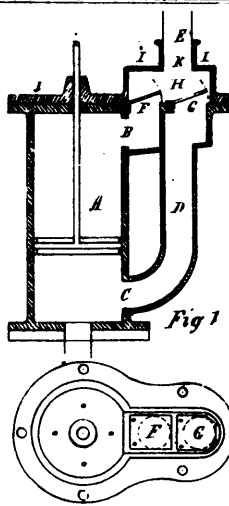
17829 Kraft's Trace Buckle.



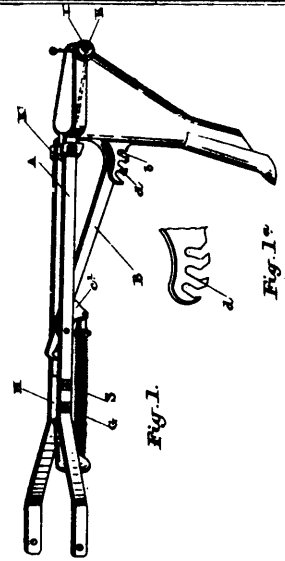
17830 Chaney's Cot Bed.



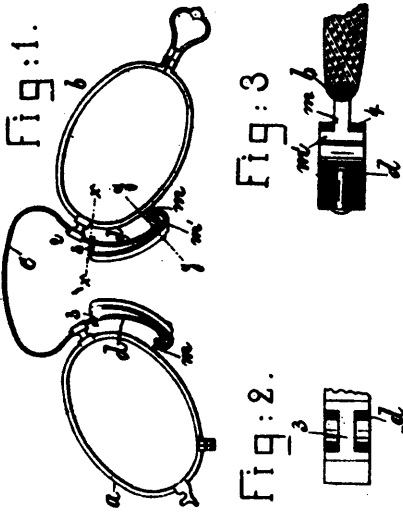
17831 Findlay's Car Wheel, Axle and Spring.



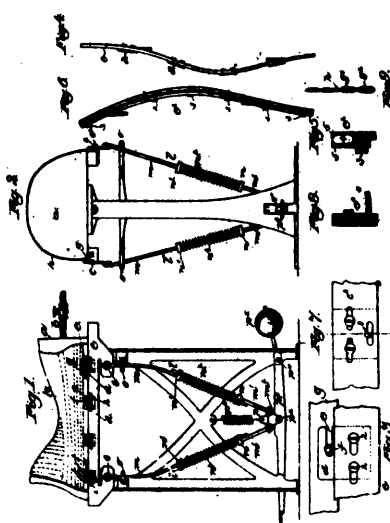
17832 Brigg's Double Action Force Pump.



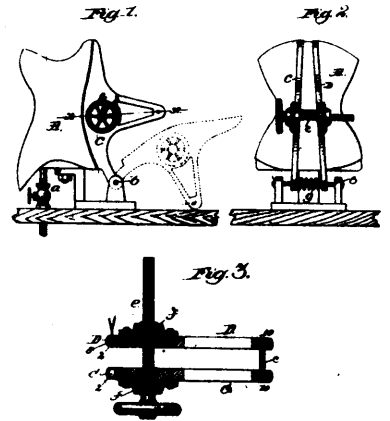
17833 Heath's Spring Hoes.



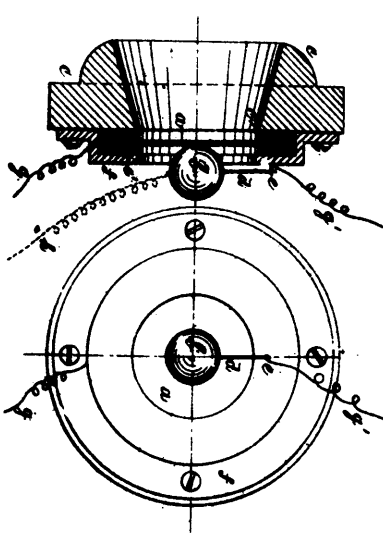
17834 Baris's Eye Glasses.



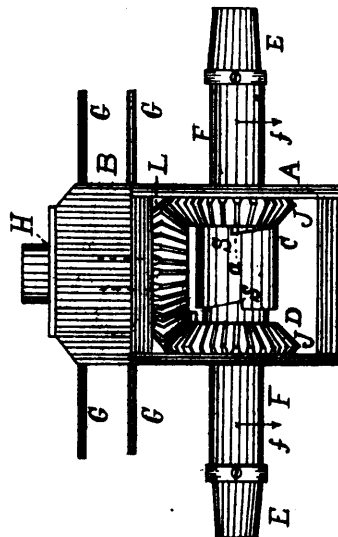
17835 House's Apparatus for Shaping and Forming Corsets



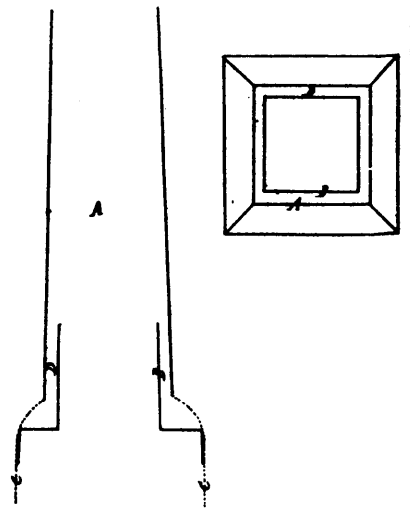
17836 House's Apparatus for Shaping Corsets.



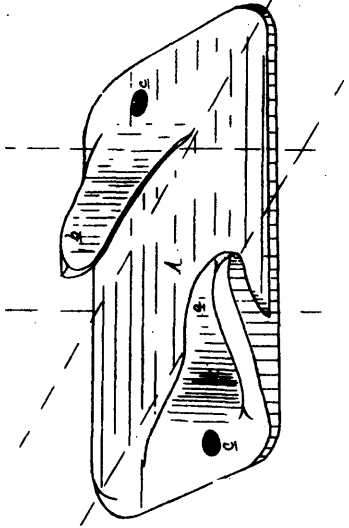
17837 St. George's Telephone Signals.



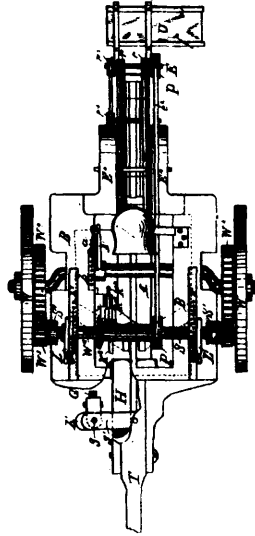
17838 Bemis' Lathes for Turning Lasts.



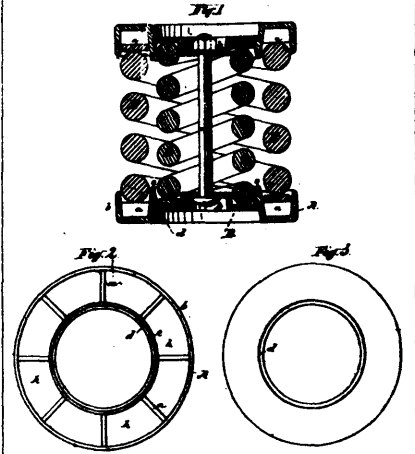
17839 English's Chimney Tops.



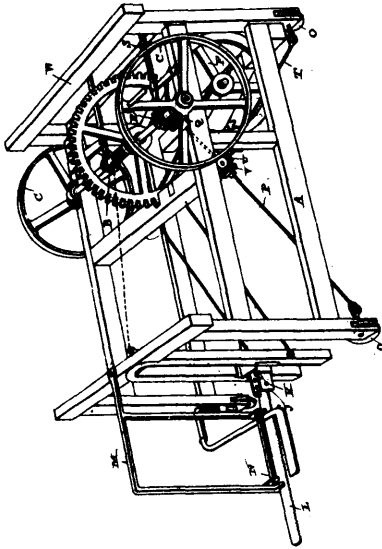
17840 Mark's Railway Chairs.



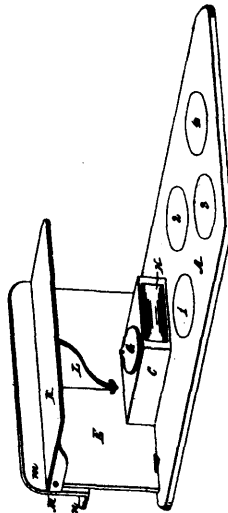
17841 Fulcher's Turnip Harvester.



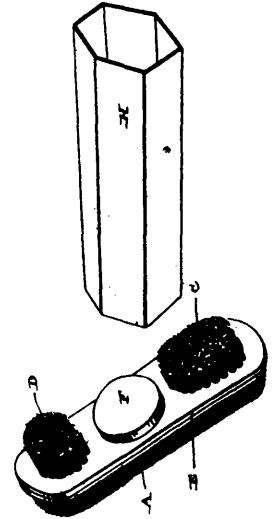
17842 Cliff's Spiral Spring Cage.



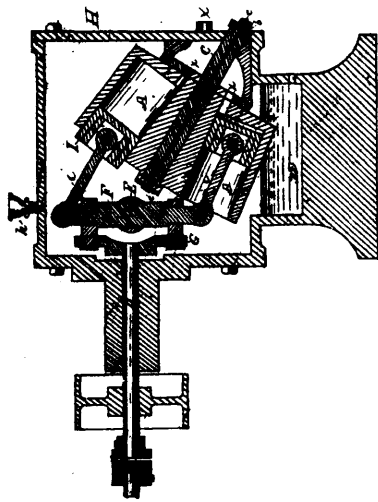
17843 Hason's Sawing Machine.



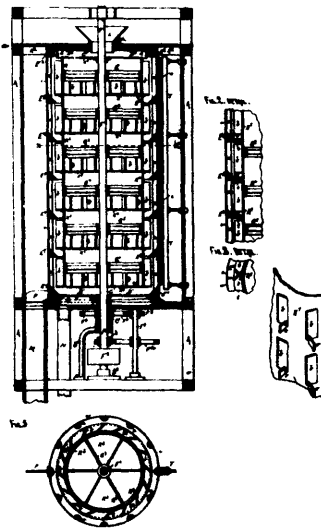
17844 Price's Stove.



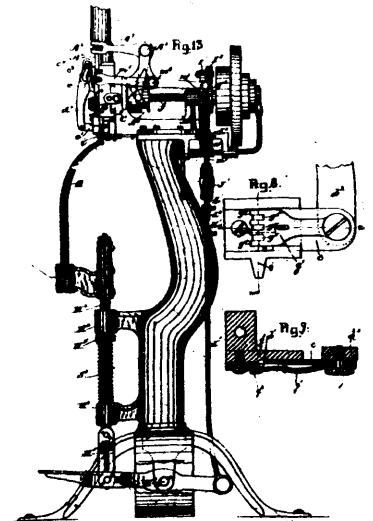
17845 Boeckh's Boot Brush.



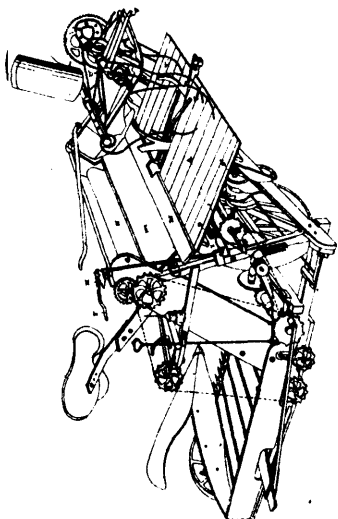
17846 Hunter's Revolving Cylinder Engine.



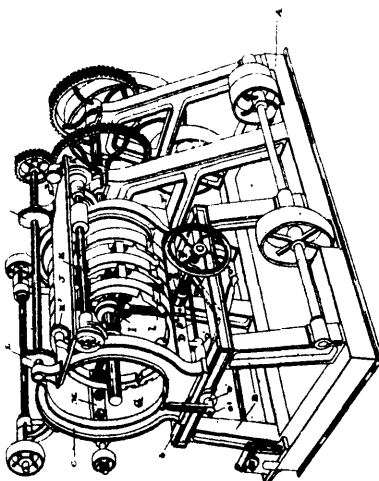
17847 Schuts's Flour Dressing Machine.



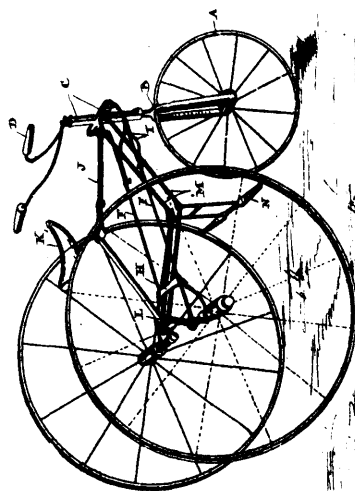
17848 Eppler and Bacon's Nailing Machine.



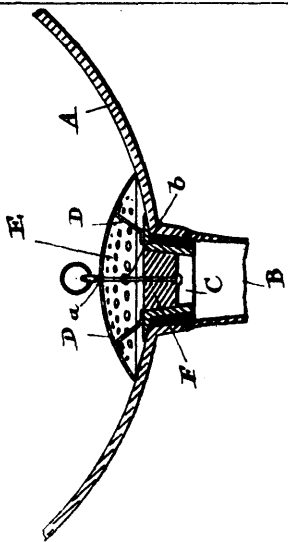
17849 Harris and Lucas' Self Binding Harvester.



17850 Massie's Barrel Making Machine.



17861 Bailey and Thorne's Tricycle.



17852 Iredale's Combined Plug and Strainer for Sinks.

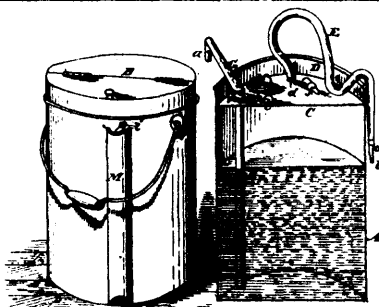


Fig. 1.

Fig. 2.

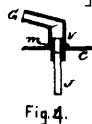


Fig. 4.



Fig. 3.

17853 Garland's Filling Cans.

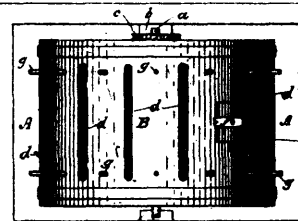


Fig. 1.

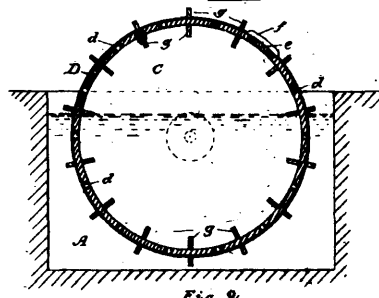


Fig. 2.

17864 Braun's Tanning Apparatus.

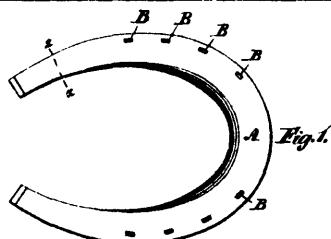


Fig. 1.

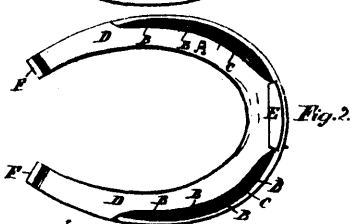


Fig. 2.

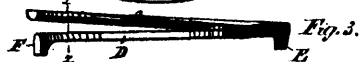
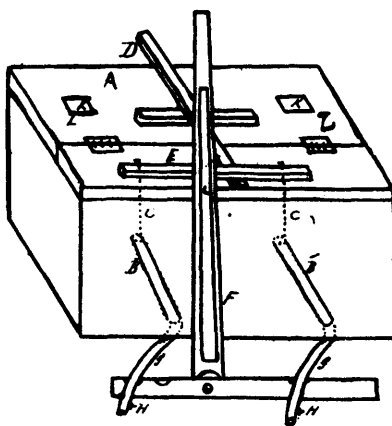
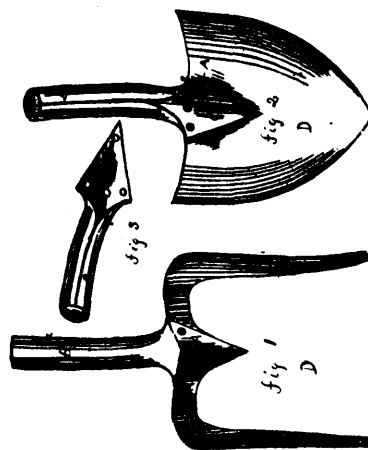


Fig. 3.

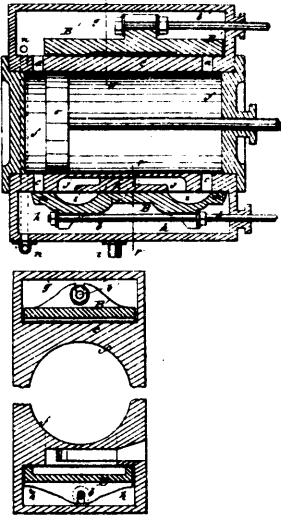
17856 Deaming's Horse Shoe.



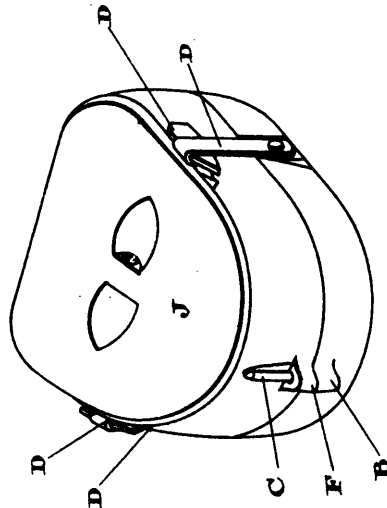
17858 Kinney's Potato Bug Sprinkler.



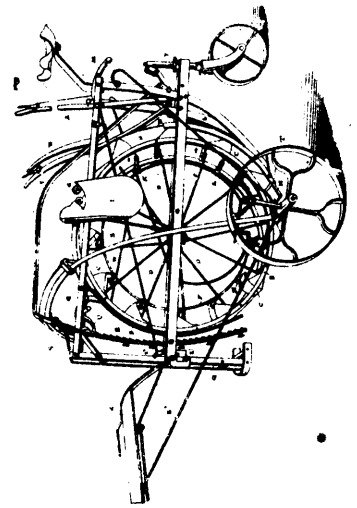
17857 Fenerty's Shovel.



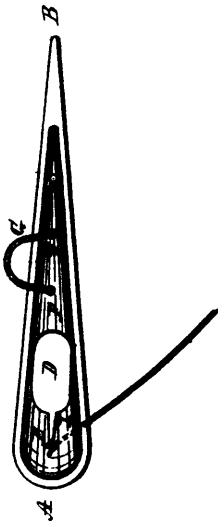
17859 Doty's Valve.



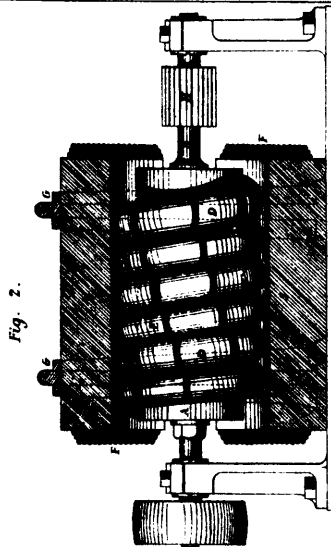
17860 Elliot's Dentist Flask.



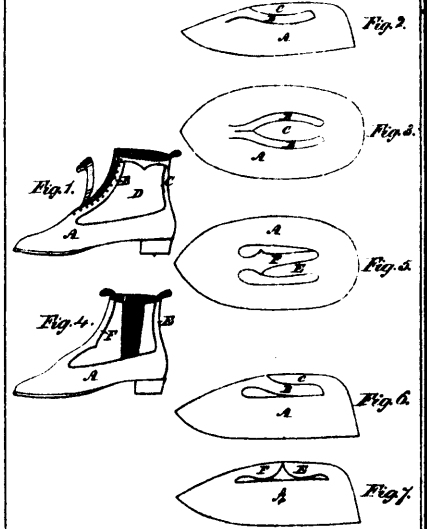
17861 Rennie and Carter's Ditching Machine.



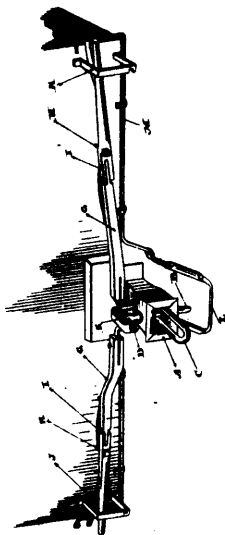
17862 Lynde's Grain Binder and Corn Husker.



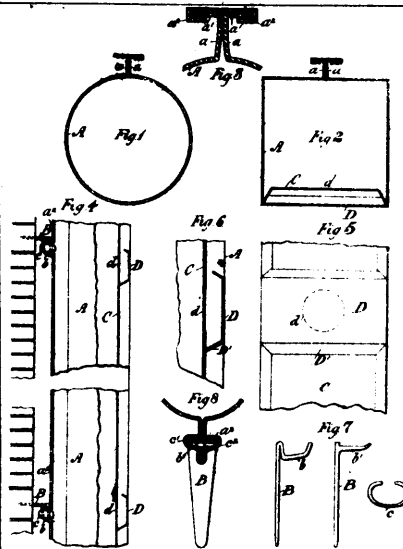
17863 Andrew's Dynamo Electric Machine.



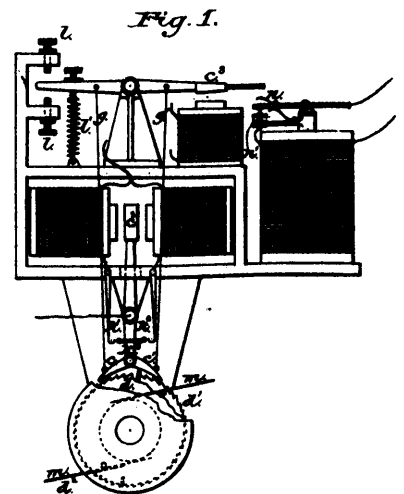
17864 Marshall's Upper Boot and Shoe.



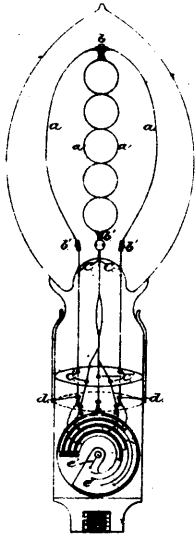
17865 McLeod's Car Coupler.



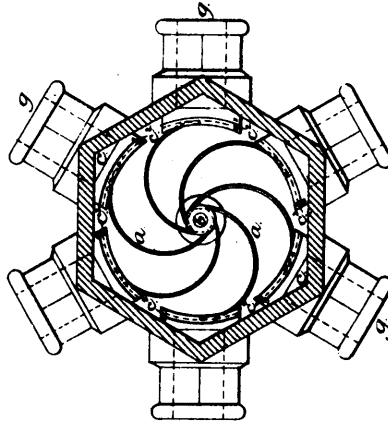
17866 Sander's Water Conducting Pipes.



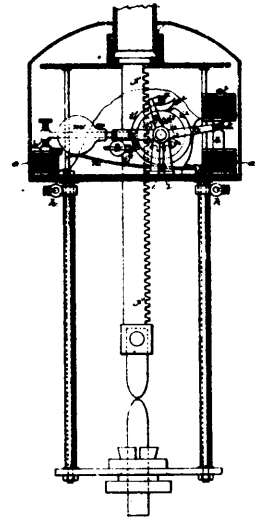
17867 Perkins' Electric Current Regulator.



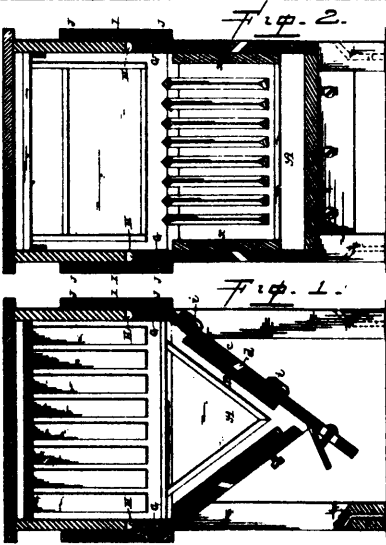
17868 Perkins' Incandescent Lamp.



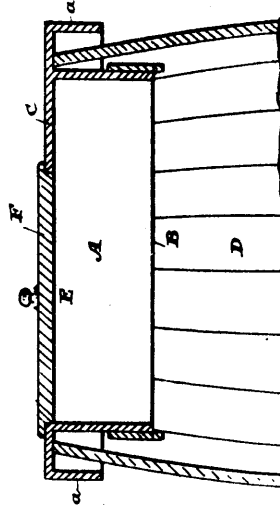
17869 Perkins' Switch for Incandescent Lamp.



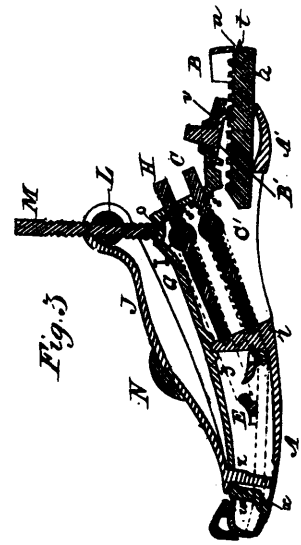
17870 Perkins' Electric Lamp.



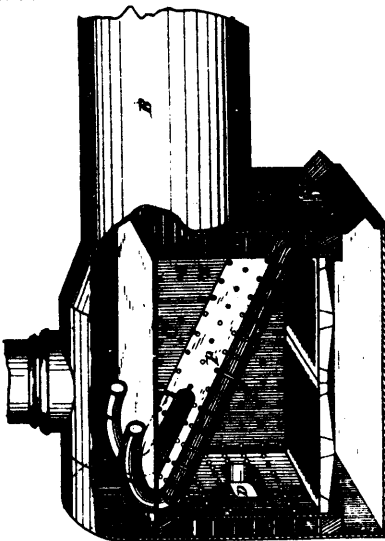
17871 Bailey's Bee Hive.



17872 Booth's Cylindrical Sifter.



17873 Myers' Boot Stretcher.



17874 Gano's Furnace.

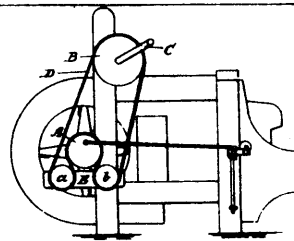


Fig. 1

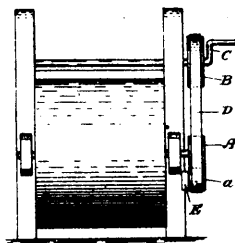
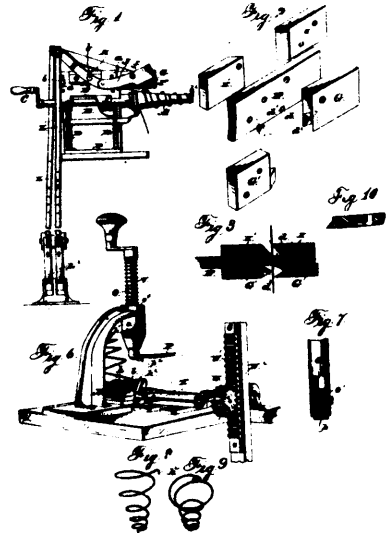
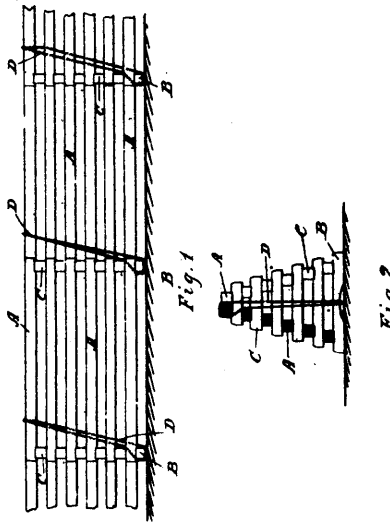


Fig. 2

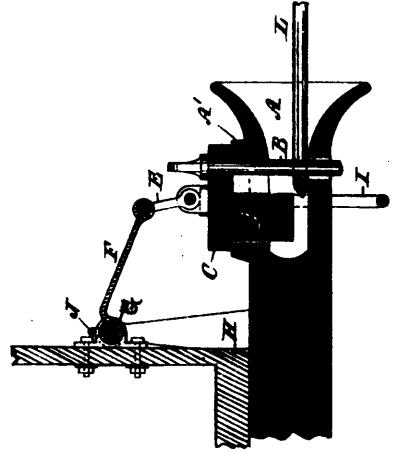
17875 Bessette's Fanning Mill.



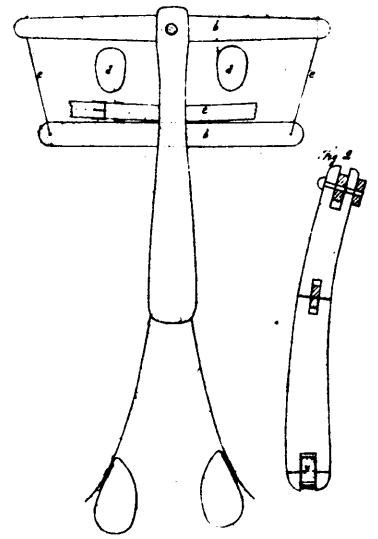
17876 Poster's Spiral Spring Machine.



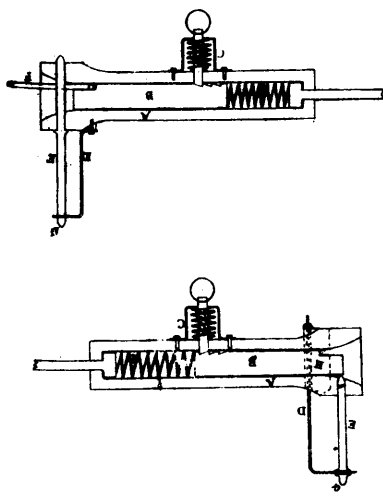
17877 Scarr's Fence.



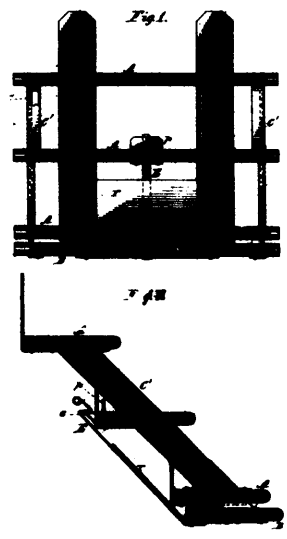
17878 Devlin's Car Coupling.



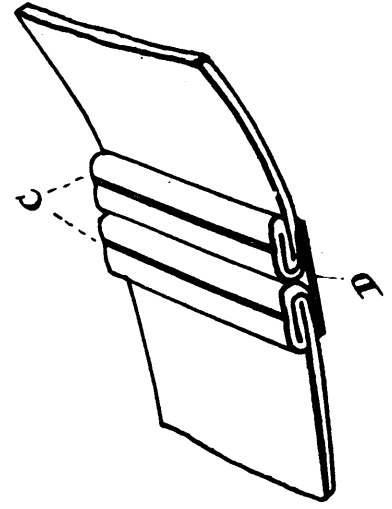
17879 Bears' Horse Hobble.



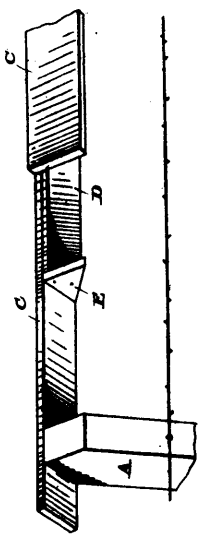
17880 Graham's Car Coupling.



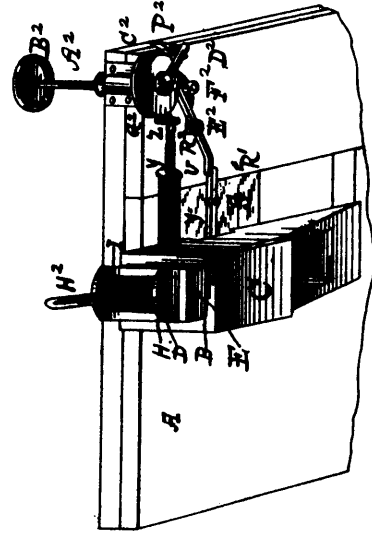
17881 Howe's Extensible Step for Car Platforms.



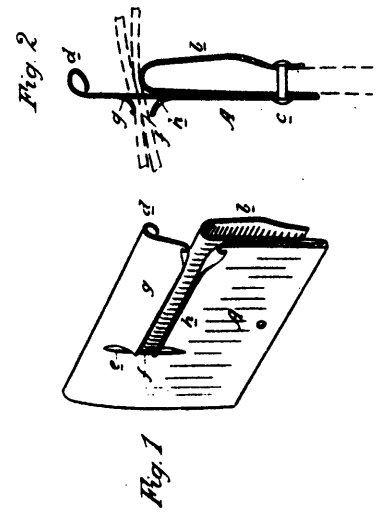
17882 Vallant's Seams for Fine Boots.



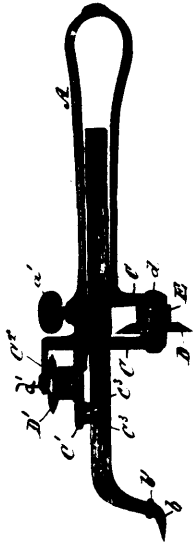
17883 Rodden's Wire Fencing.



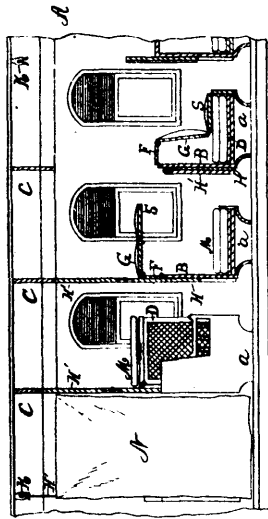
17884 Panabaker's Car Coupling.



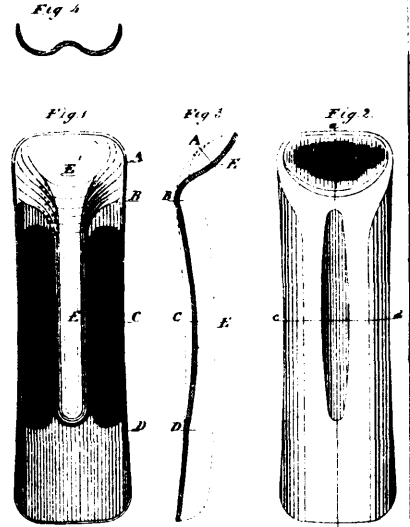
17885 Cottrell's Rein-Holder.



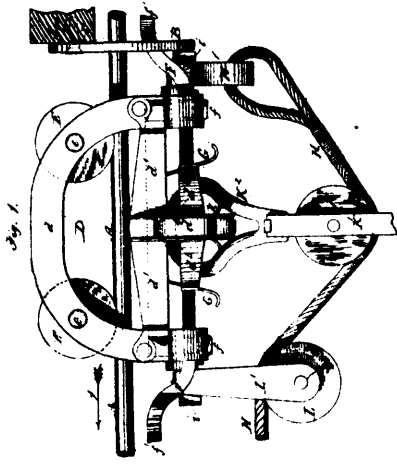
17886 Rath's Can Opener.



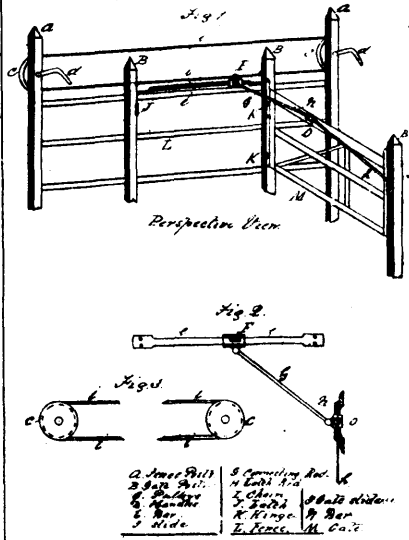
17887 Slicher's Sleeping Car.



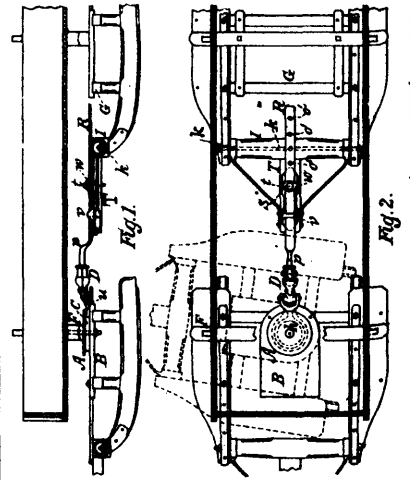
17888 Wood's Splints for Forearms.



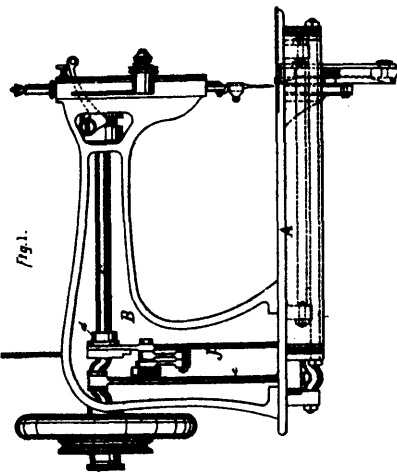
17889 St. John's Hay Elevator.



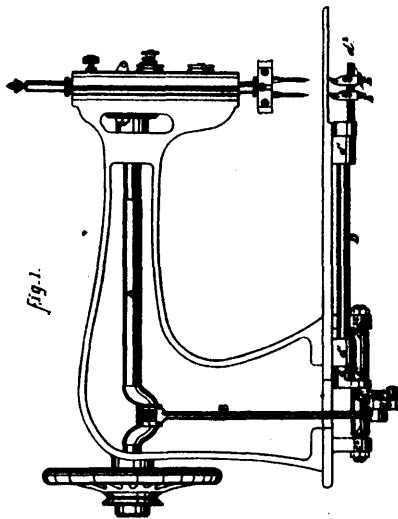
17891 Moyer's Gate Attachment.



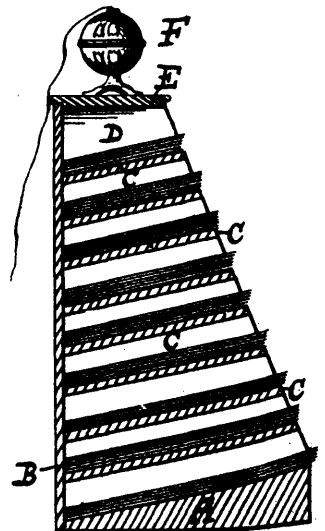
17892 Schroeder's Bob Sleighs



17993 Miller and Diehl's Sewing Machine.



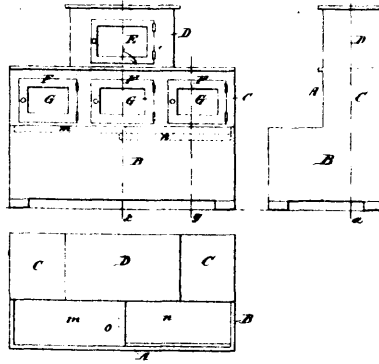
17894 Miller and Diehl's Sewing Machine.



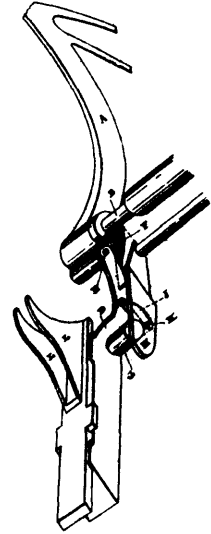
17895 Master's Paper Bag Holder.



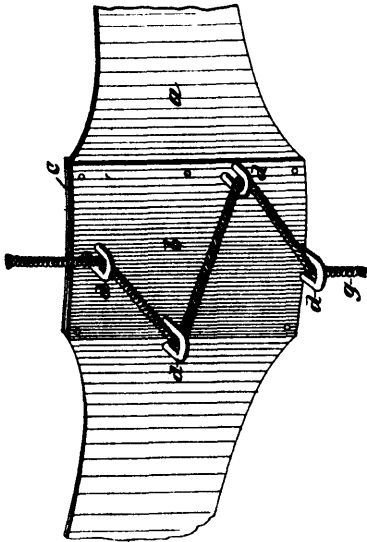
17896 Valliant's Boot.



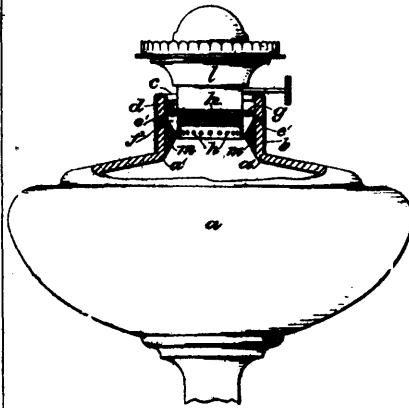
17897 Richer's Refrigerator.



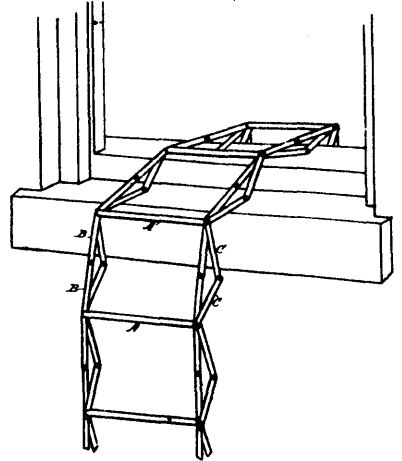
17898 Kettlewell's Harvester Binder.



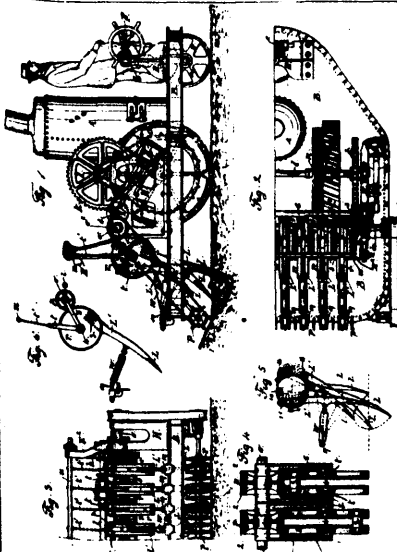
17899 Cutler's Fire Escape.



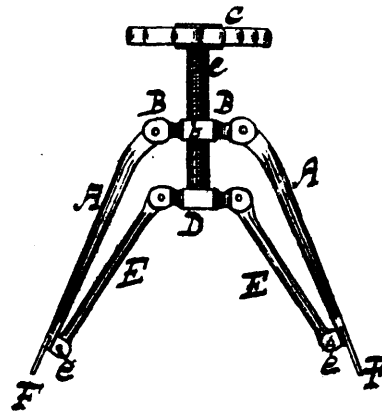
17900 Maxim's Oil Lamp.



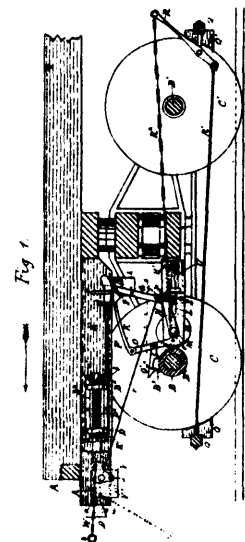
17901 Kimball and Barrett's Fire Escape.



17902 Stone's Steam Plow.



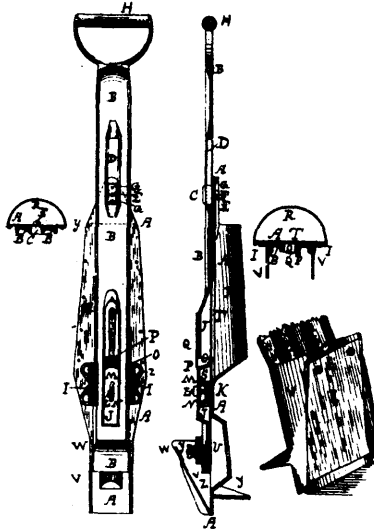
17903 Urie and Goyn's Tinner's Tools.



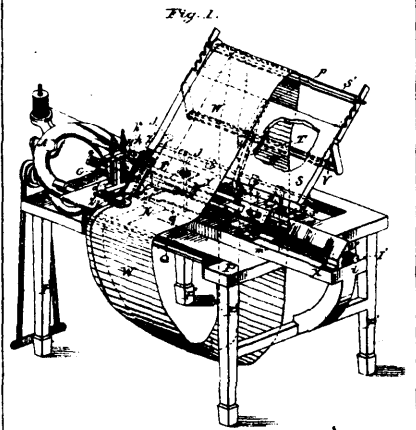
17904 Turner and Beard's Car Brakes.



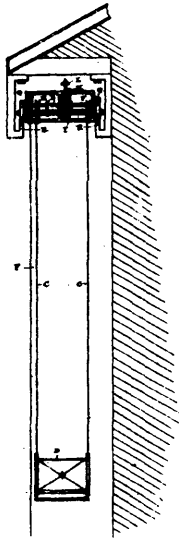
17905 Hoult's Safety Railroad Switches.



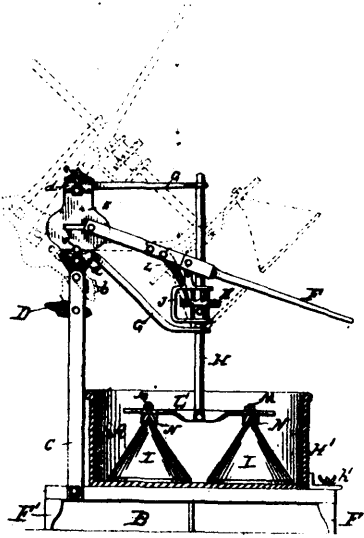
17906 Macomber's Hand Corn Planter.



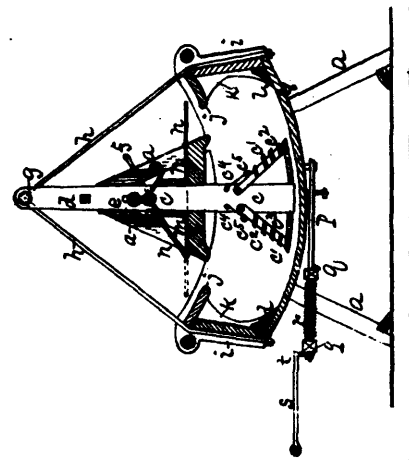
17907 Fisher's Sewing Machine.



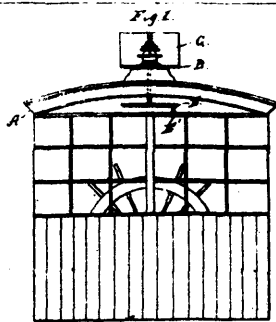
17908 Parmenter's Fire Escape.



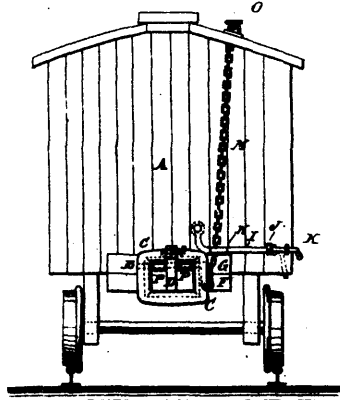
17909 Rhoades' Washing Machine.



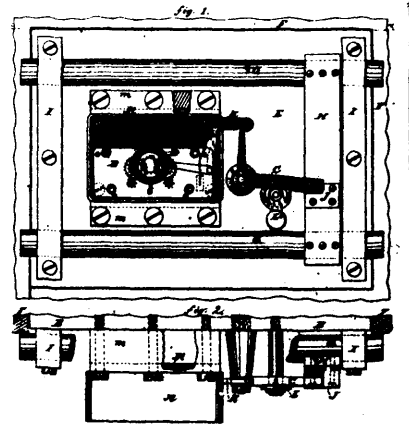
17910 Wilson's Washing Machine.



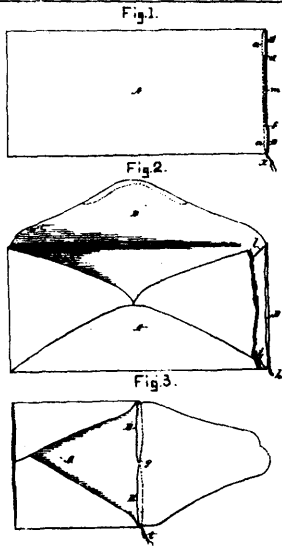
17911 White's Signal of Vessels.



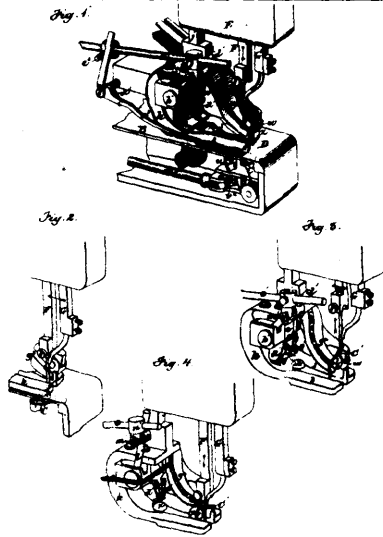
17912 Cullinan and Baldwin's Car Coupling.



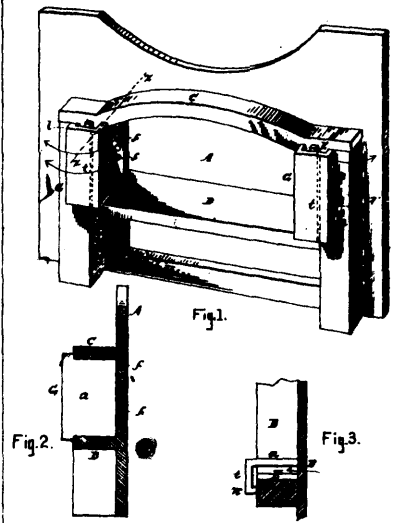
17913 Newbury's Chronometer.



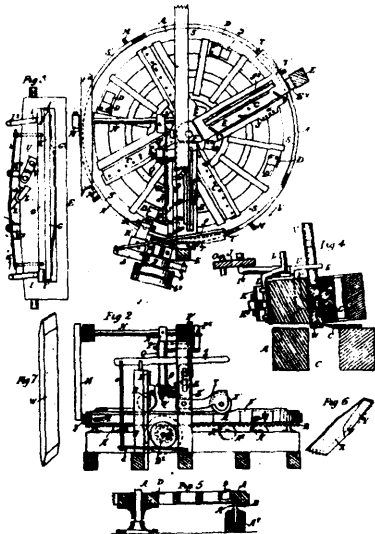
17814 McFarlin's Envelope.



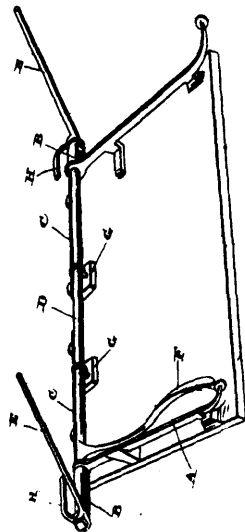
17915 Mathison's Button Sewing Machine.



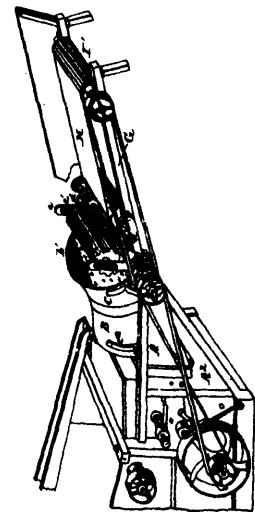
17916 O'Brien's Furnace Mouth.



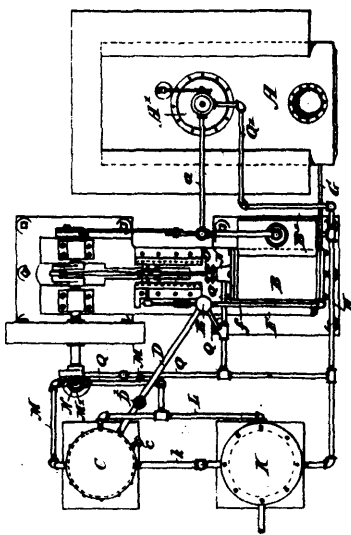
17917 Graydon and Jopling's Machinery for Cutting Wooden Barrel Hoops.



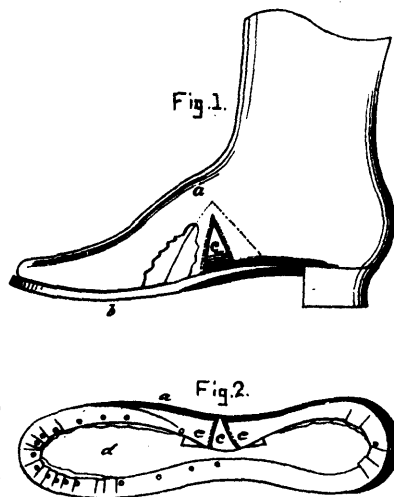
17918 McLaughlin's Buggy Tops.



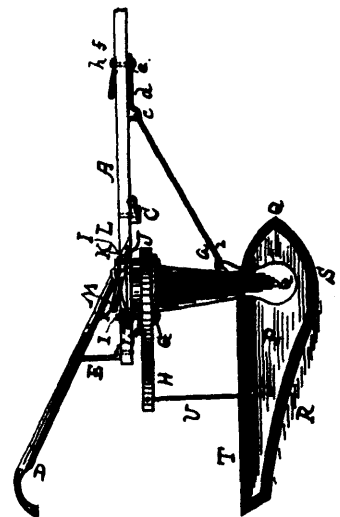
17919 Lightcap's Threshing Machine.



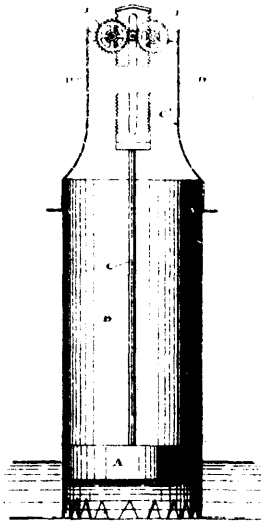
17920 Sweanor and Beuthner's Ammonia Engine.



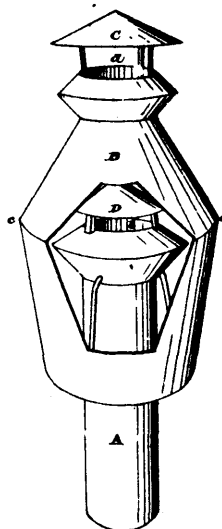
17921 Clark and Shaw's Boot and Shoe.



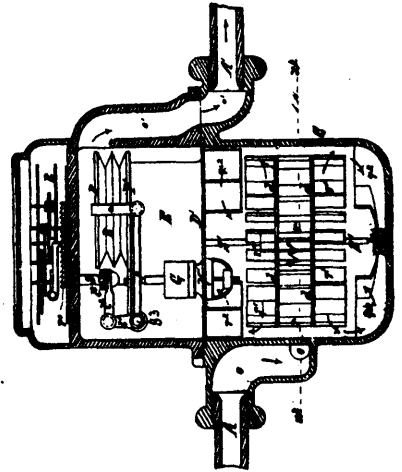
17922 Getchell's Hoe Cultivator.



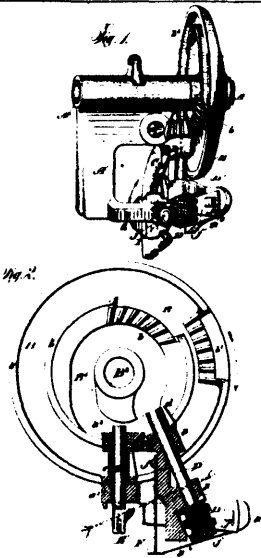
17923 Forster's Tide Meter.



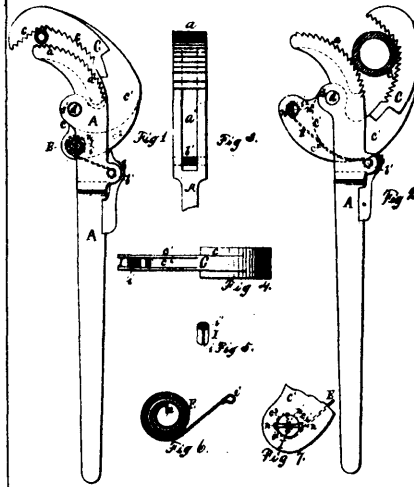
17924 Speer's Chimney Top.



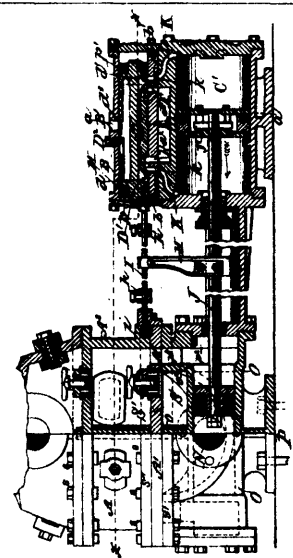
17925 Hesse's Fluid Meter.



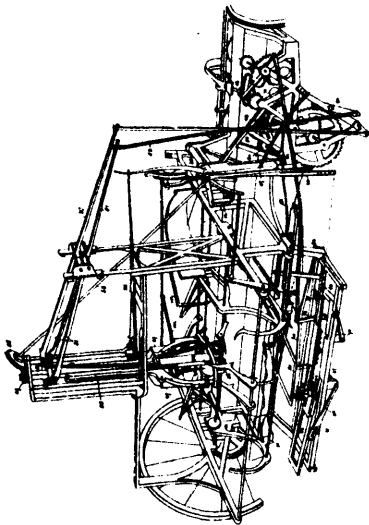
17926 Webster's Cord Holder.



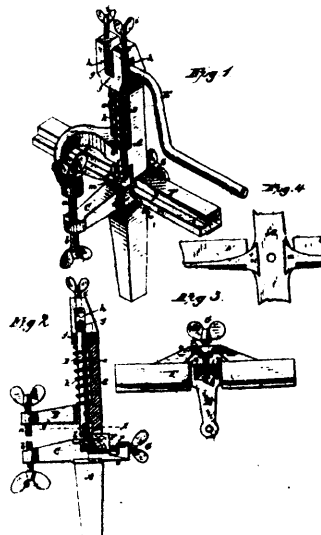
17927 Morrison and Jones' Pipe Wrench.



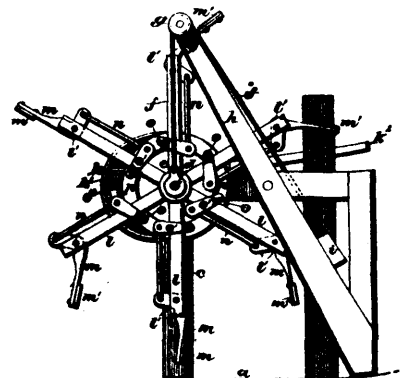
17928 Conway's Pumping Engine.



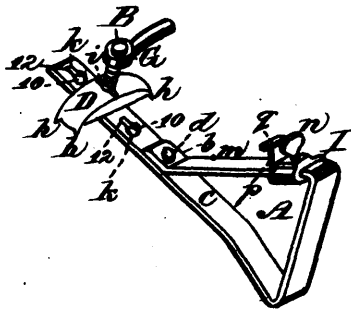
17929 Bell and McLeod's Binding Machine.



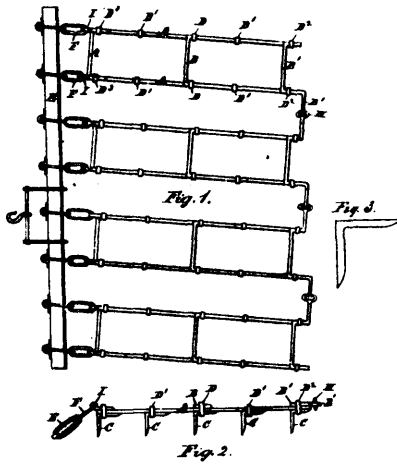
17930 East's Saw Set.



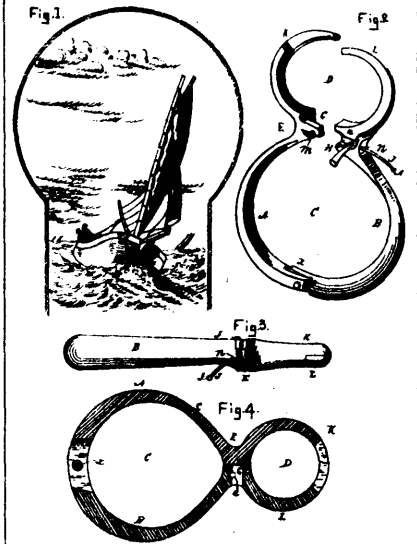
17931 Kanne's Harvester Reel.



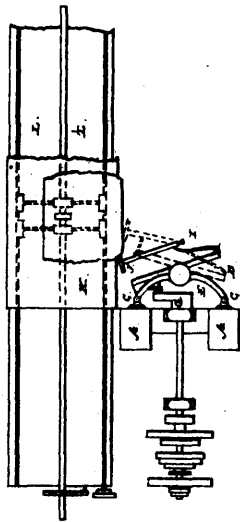
17932 Ryan's Shingling Brackets.



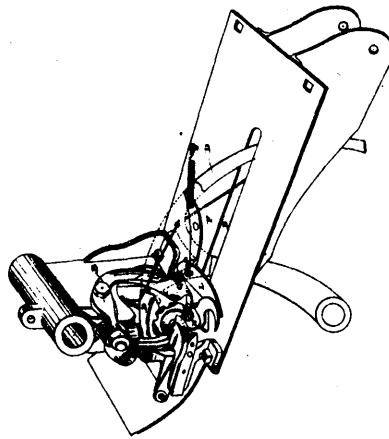
17938 Tinney's Harrow.



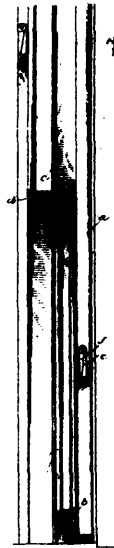
17935 Cook's Hanks.



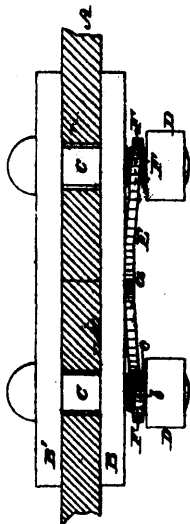
17936 Wallace's Stone Dressing Machine.



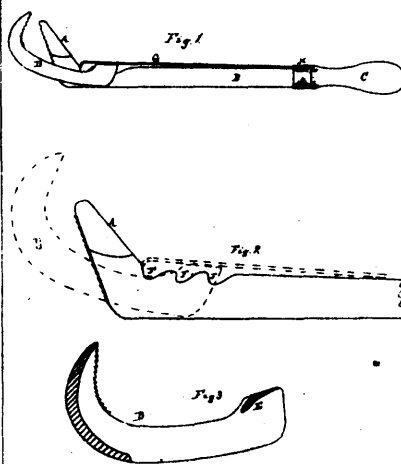
17937 McLachlan's Harvester.



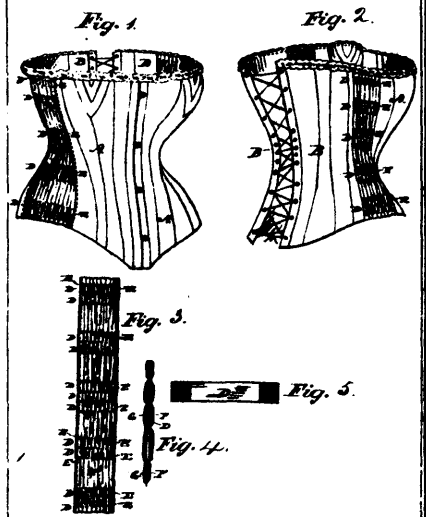
17938 Olason's Sash Holder.



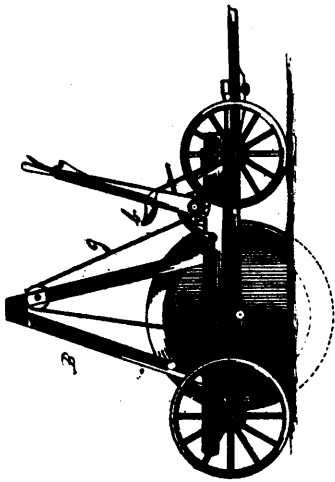
17939 Dand's Nut Fasteners.



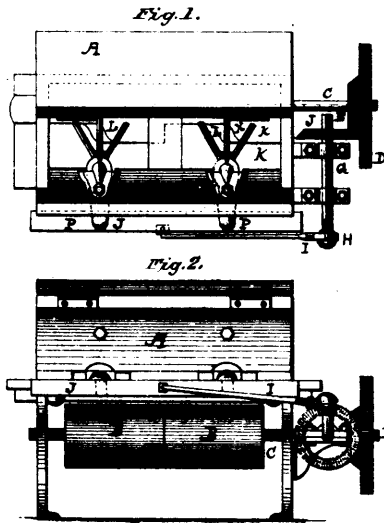
17940 Williams' Pipe Wrench.



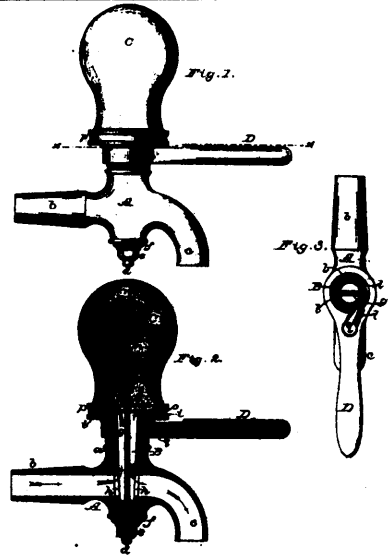
17941 Vanstone's Corsets.



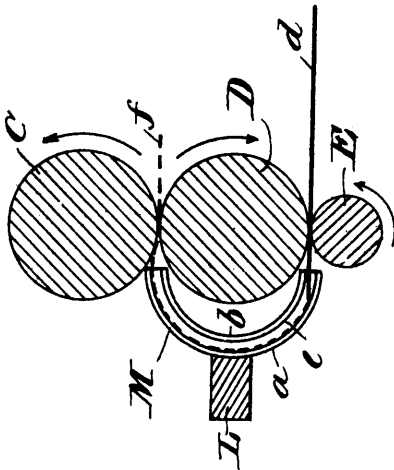
17942 Fagan and Smith's Tile Discher.



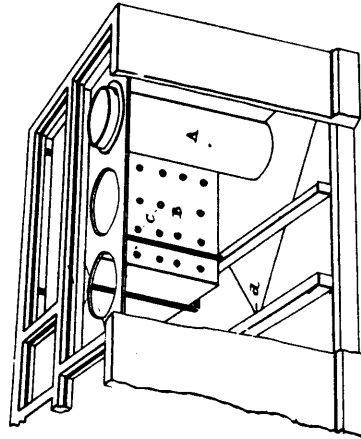
17943 Keller's Machine for Sowing Fertilizer.



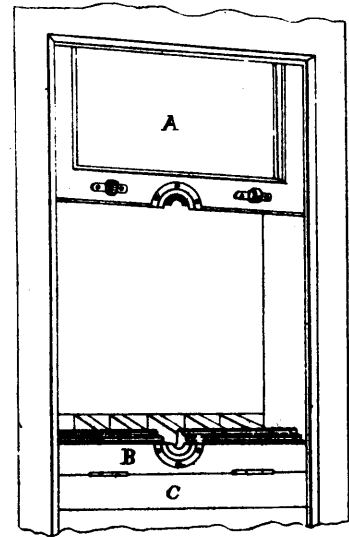
17944 Aborn's Filtering Faucet.



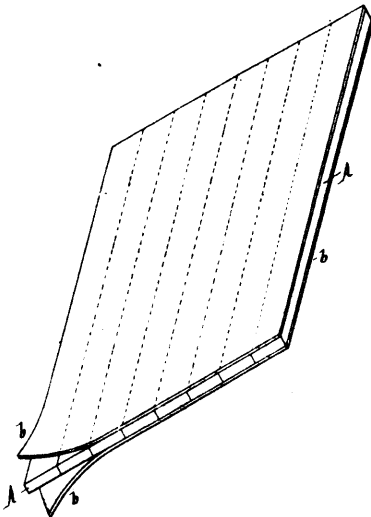
17945 Hersey's Rolling Mill.



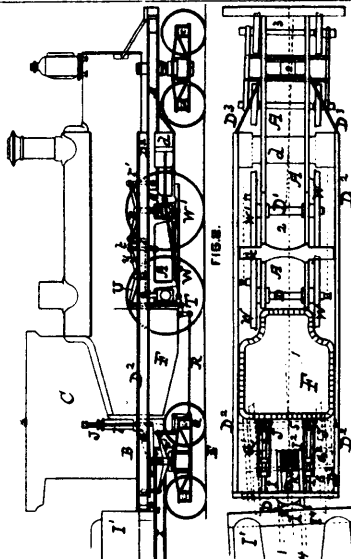
17946 Alexander's Ice Cream Refrigerator.



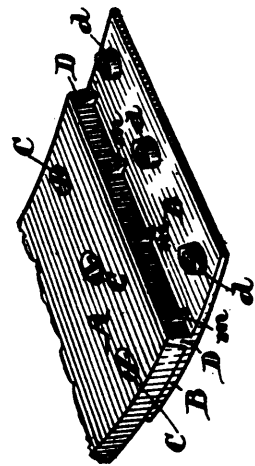
17947 Alexander's Beer Refrigerator.



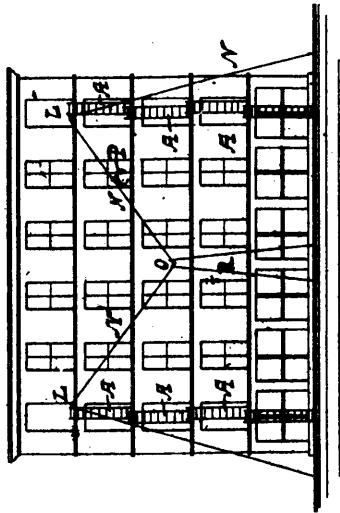
17948 Deuther's Backs for Picture Frames, &c.



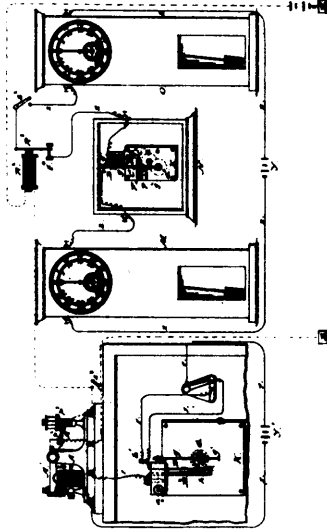
17949 Forney's Locomotive Engine.



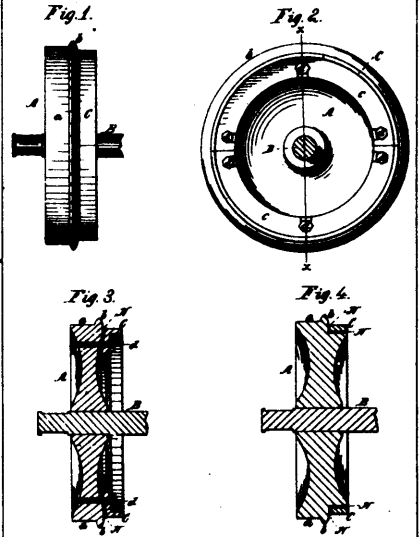
17950 Humphrey's Belt Fasteners.



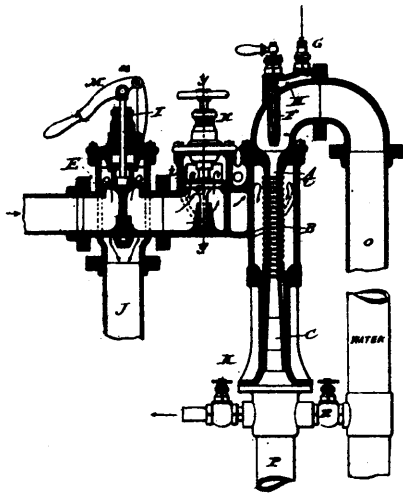
17951 Zorr's Fire Escape.



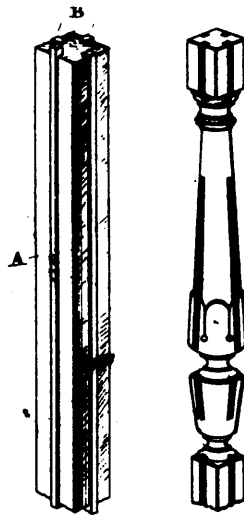
17952 Gardner's Time Controlling System.



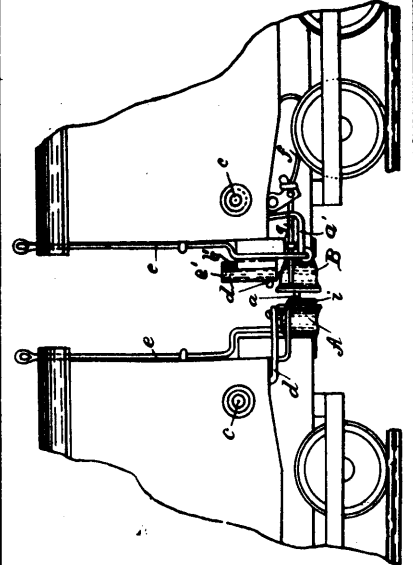
17953 Howe's Brake Rims for Car Wheels.



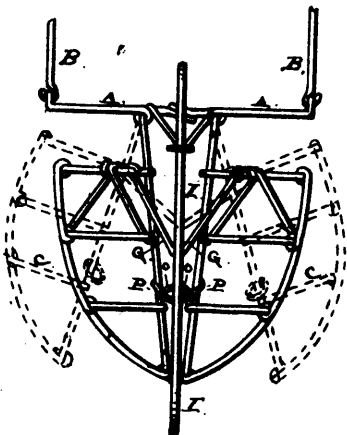
17954 Goehring's Steam Condenser.



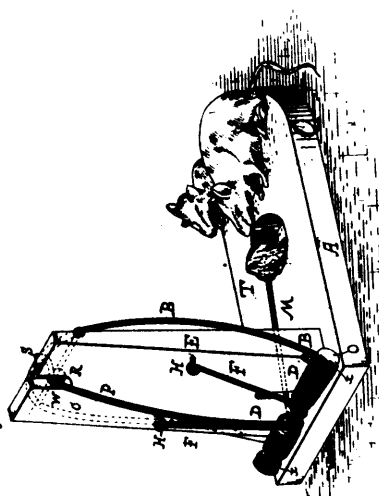
17955 Bigford's Combination of Wood Work.



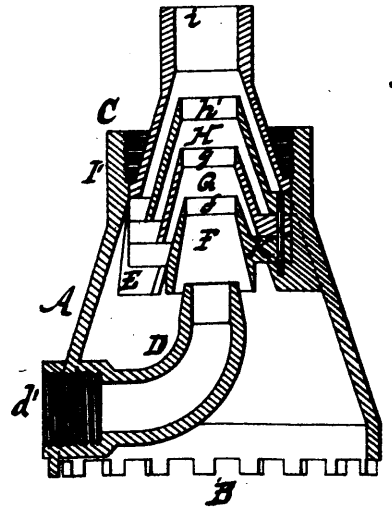
17956 Mayrand's Car Coupling.



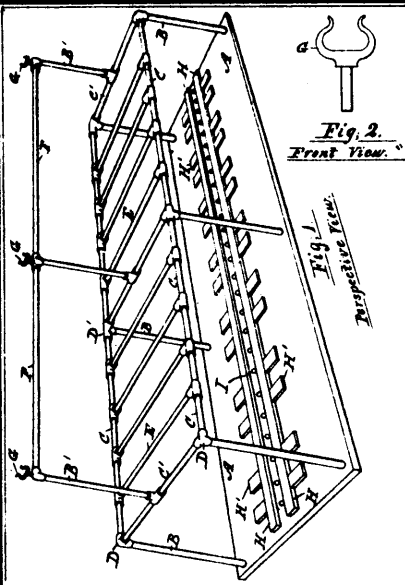
17957 Crockett's Muzzles for Animals.



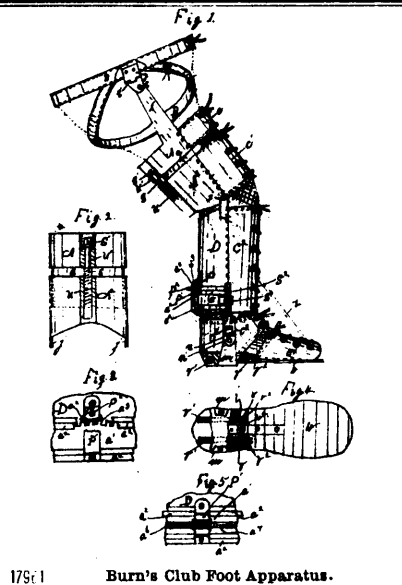
17958 Hull's Animal Trap.



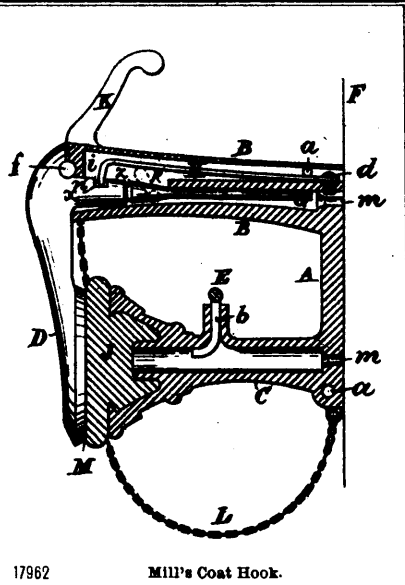
17959 Vanduzen's Elevator



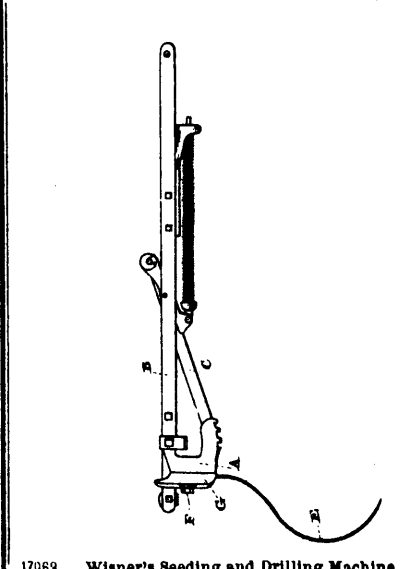
17960 Boynton and Toqus' Rack for Umbrellas, &c.



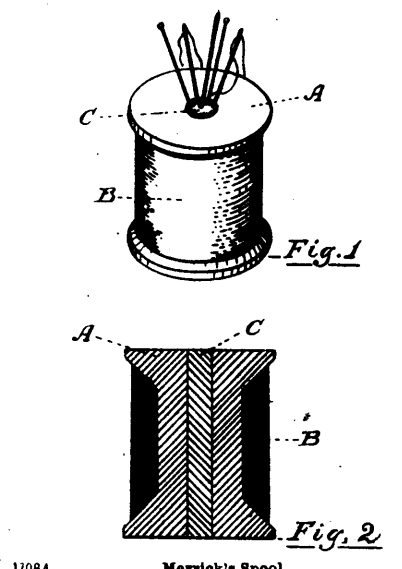
17961 Burn's Club Foot Apparatus.



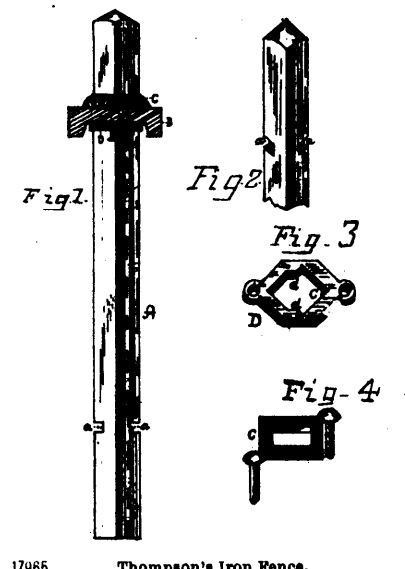
17962 Mill's Coat Hook.



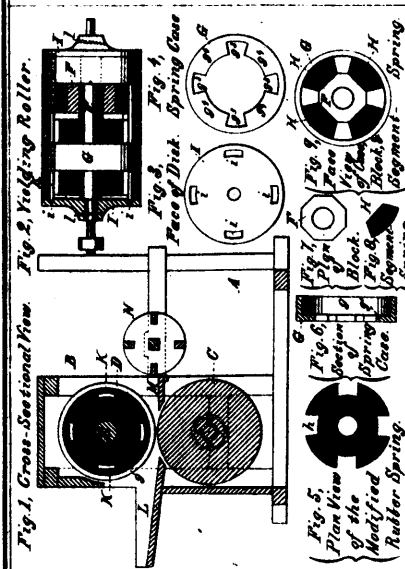
17963 Wisner's Seeding and Drilling Machine.



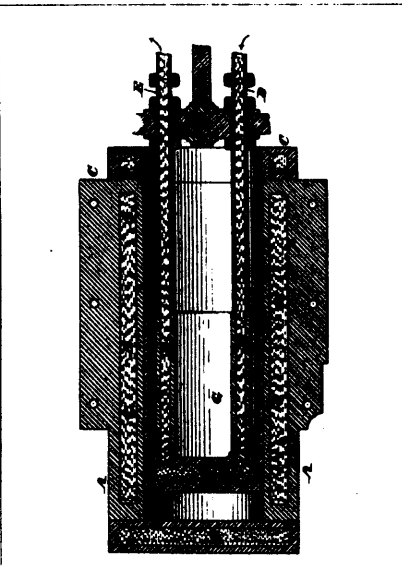
17984 Merrick's Spool.



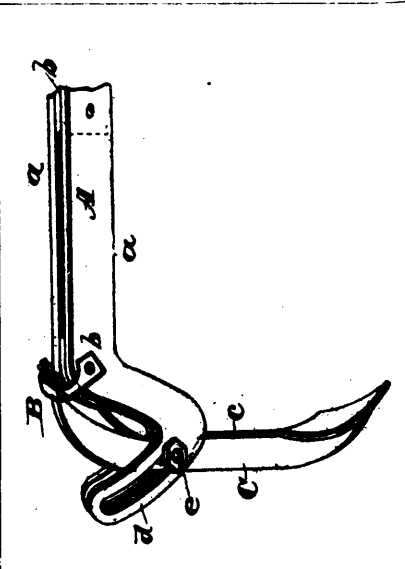
17965 Thompson's Iron Fence.



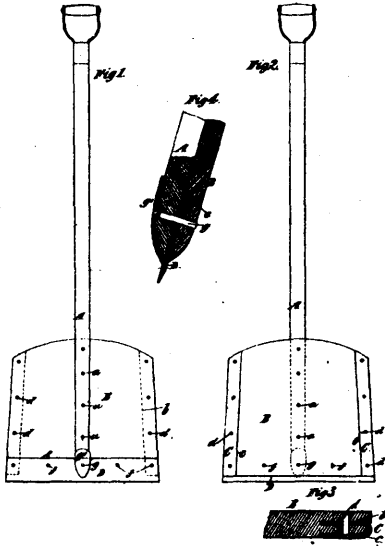
17986 Wannamaker's Flax Threshing Machine.



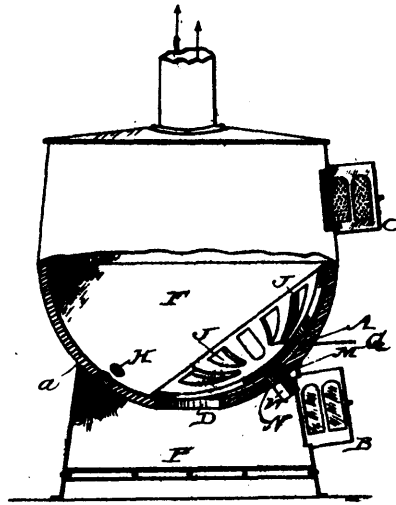
17967 Stetson's Hydro Carbon Engine.



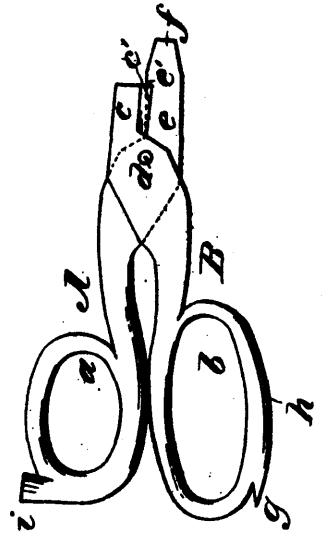
17958 Van Brunt's Cultivator.



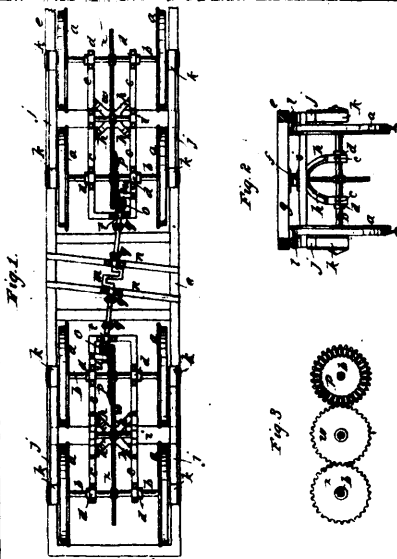
17969 Cole's Snow Shovel.



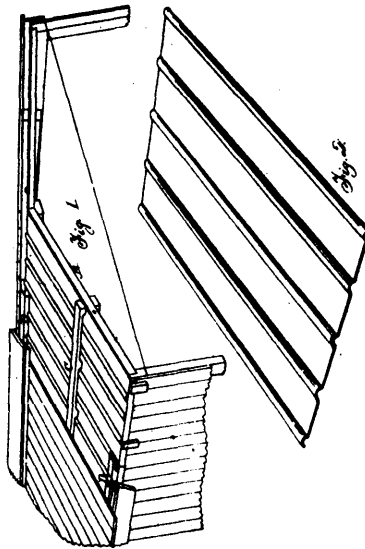
17970 Merriman's Grate.



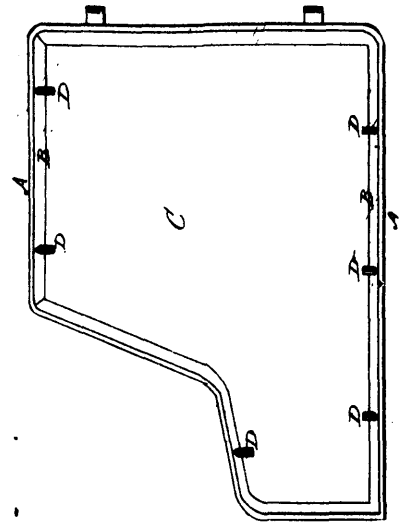
17971 Torrey's Combination Tools.



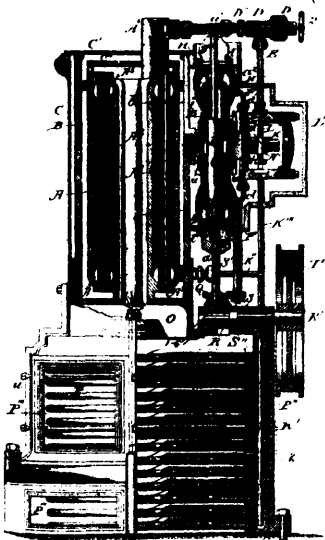
17972 Crippen's Locomotive Driving Gear.



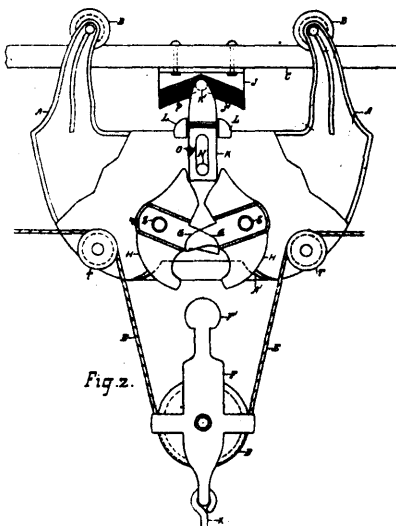
17973 Paige's Car Roofing.



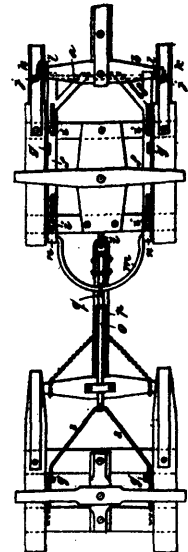
17974 Quinn's Oven Doors.



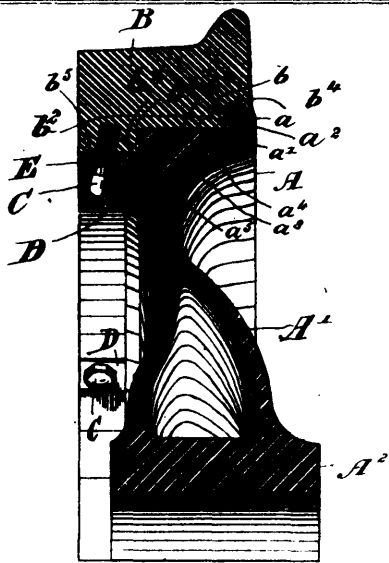
17975 Gateau's Gas Motor.



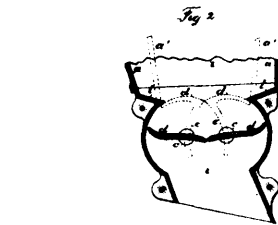
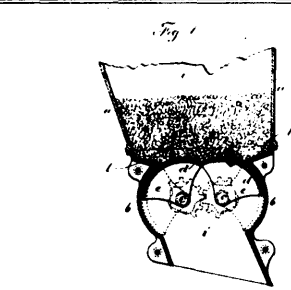
17976 Buchanan's Hay Elevator and Carrier.



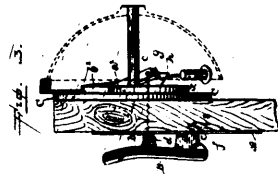
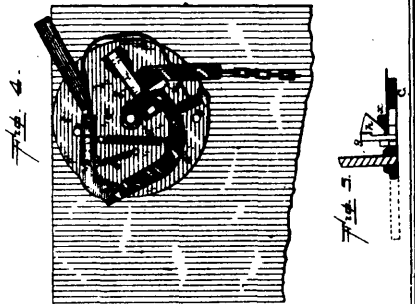
17977 Pelkey and Webster's Sled Brakes.



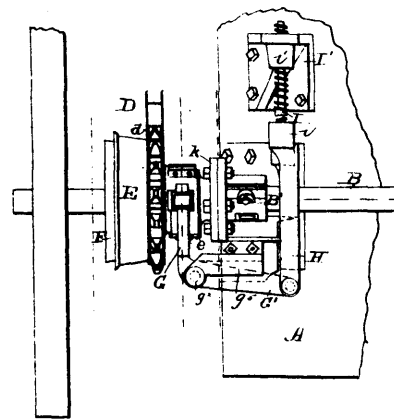
17978 Lindsay's Car Wheels.



17979 Smyth's Magazine Stoves.



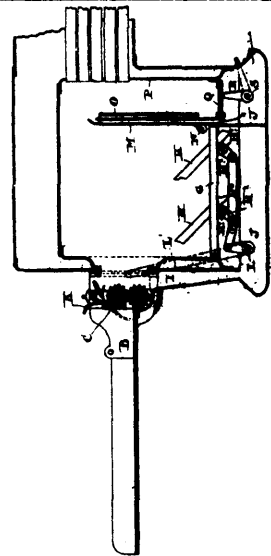
17980 Fay's Bell Pull and Burglar Alarm.



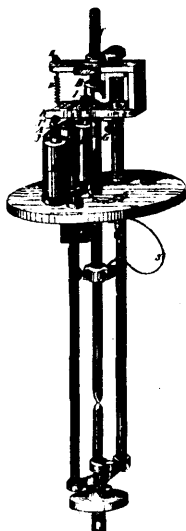
17981 Clarke's Traction Engine.



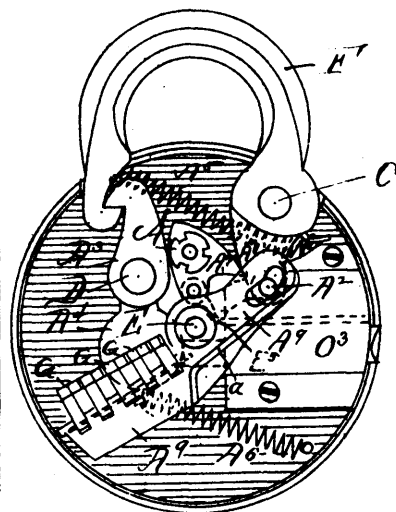
17982 Mulloy's Harness.



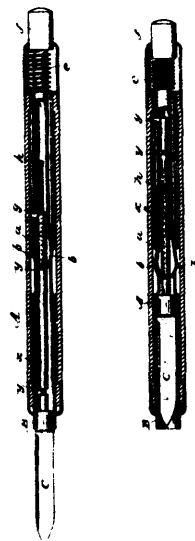
17983 Abell's Steam Boiler Furnace.



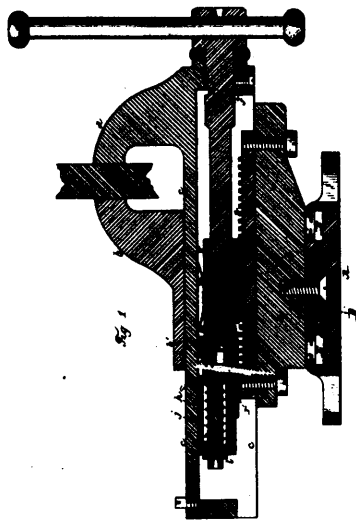
17984 Lever's Electric Light Apparatus.



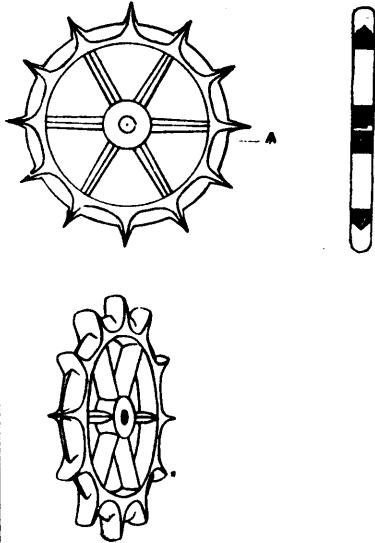
17985 Dickerman and Usher's Padlock.



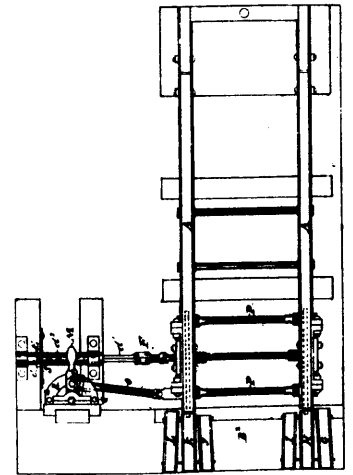
17986 Boman's Pen, Knife, &c. Holder.



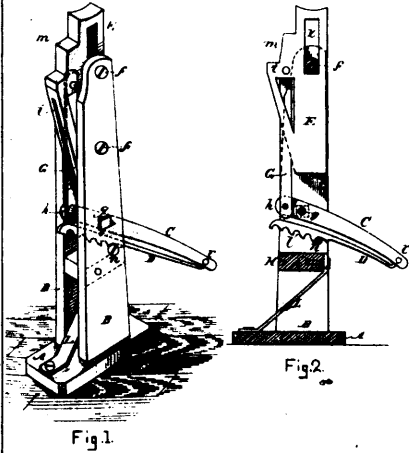
17987 Redd's Parallel Vises.



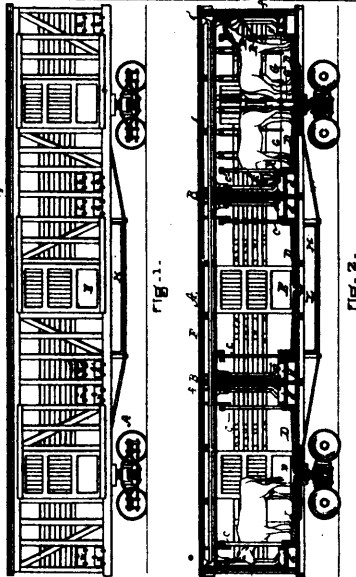
17988 McKenzie's Potato Digger Driving Wheels.



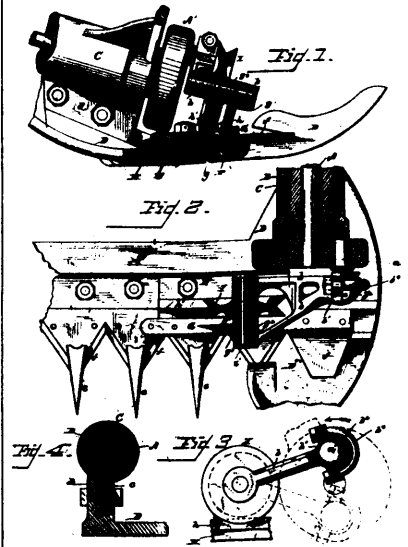
17990 O'Grady's Railway Switches.



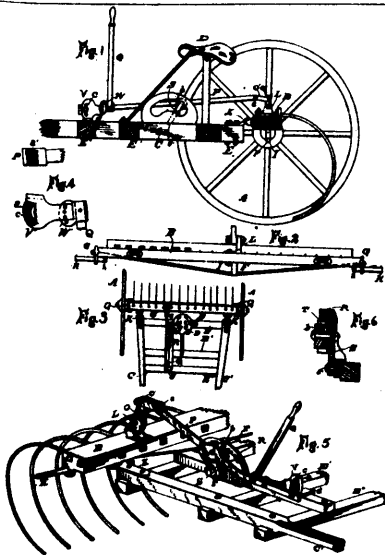
17991 Church's Carriage Jacks.



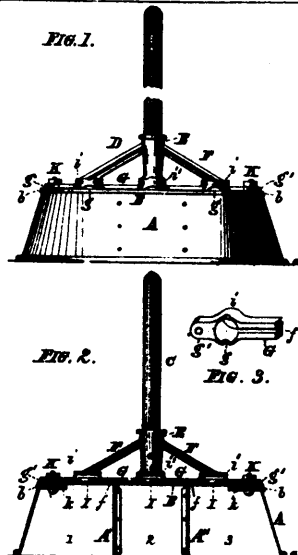
17992 Burton's Stock Car.



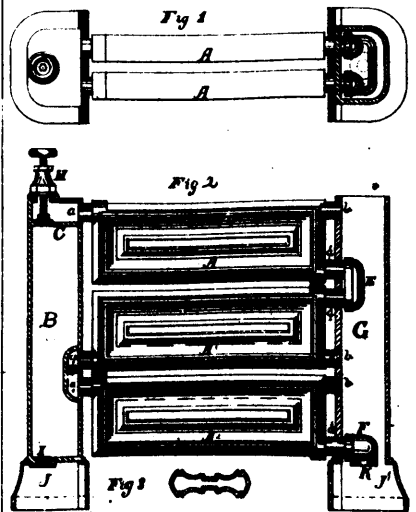
17993 Gause and Bass' Pitman Connections.



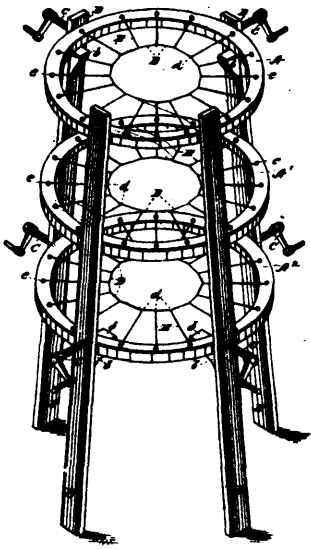
17994 Westcott and Conner's Horse Hay Rake.



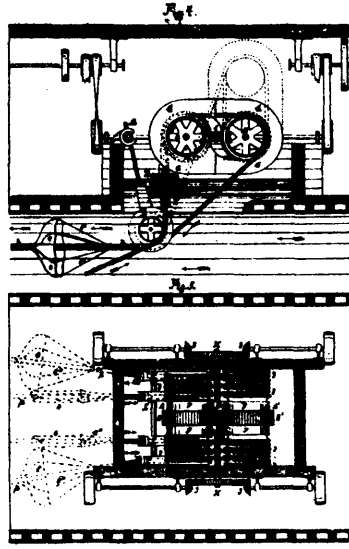
17995 Park and Parker's Washing Machine.



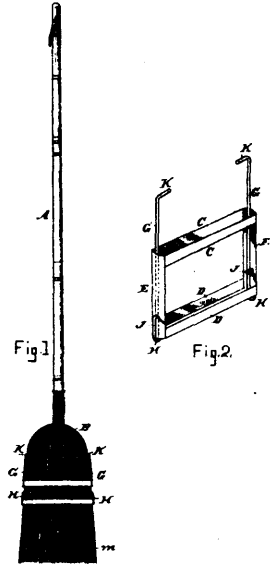
17996 Daniels' Radiator.



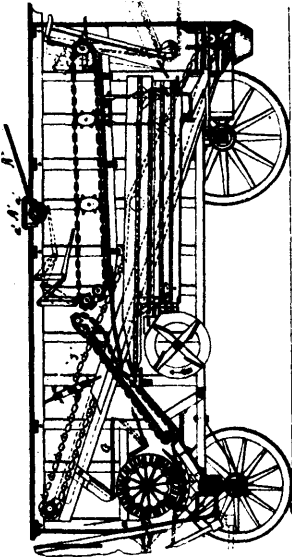
17997 Shaver's Telephone Exchanges.



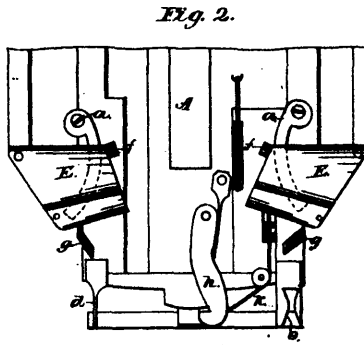
17998 Yagn's Water Power Apparatus.



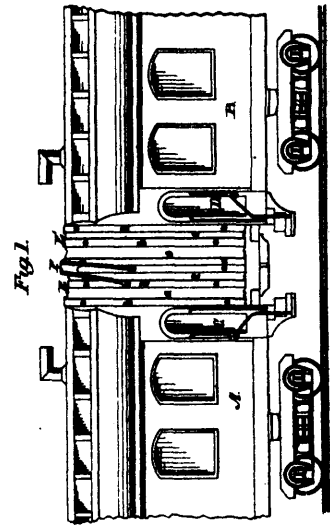
17995 Smith's Broom Band.



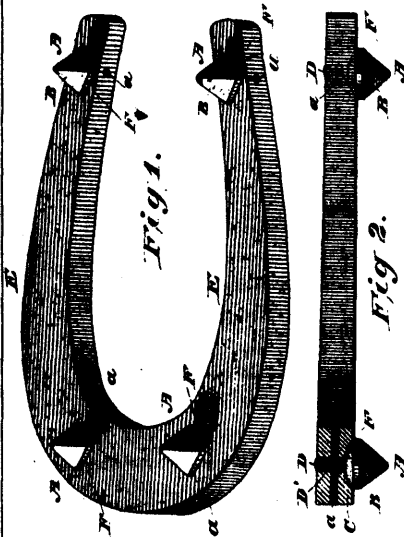
18000 Kaufman's Threshing Machine.



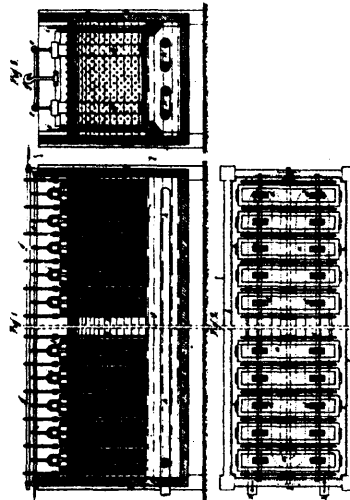
18001 Smith's Railway Car.



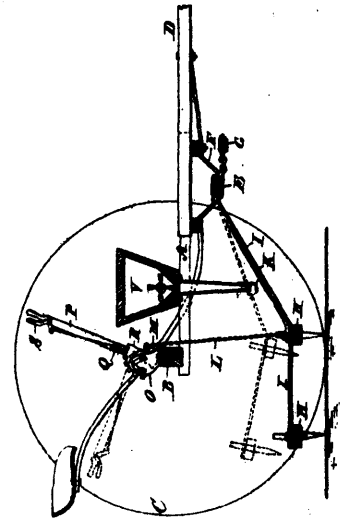
18002 Smith's Hoods for Car Platforms.



18003 Carroll's Horse Shoe.



18004 Ancel and Thollier's Metal Extractor.



18006 Cook's Sulkey Harrow